City of Columbia
Parking and Traffic Management Task Force
Final Report and Recommendations
February 6, 2017

Executive Summary

The City of Columbia Parking and Traffic Management Task Force met a total of eleven times over a 6-month period from July, 2016 - December, 2016. During the initial meetings the Task Force discussed and examined a broad array of parking issues. Beginning in October, three sub-committees were formed (Downtown, Neighborhoods and Transportation Demand Management) to begin work on drafting the Task Force's recommendations for City Council. From that time on, the Task Force meetings consisted of initial sub-committee meetings followed by full Task Force meetings to vote on final recommendations.

As demonstrated in the Final Recommendations for City Council Action on pages 23-27, the Task Force's overarching recommendation (number 7) is to form a long-term Parking and Transportation Management Commission, with the potential to partner with City staff to hire a parking and transportation management consultant to further examine and implement a number of ideas that the Task Force discussed.

The Task Force also completed several recommendations concerning the Mixed-Use Downtown (M-DT) district parking requirements in the proposed Unified Development Code (UDC). Namely, the recommendations include keeping the current requirement of one-quarter (.25) parking space per bedroom, to be subject to periodic review by the proposed Parking and Traffic Management Commission; parking requirement exemptions for developments of 20 bedrooms or less; prohibition of meeting minimum parking requirements through the provision of City managed hourly parking spaces; and a requirement to build all accessible parking spaces on-site.

In addition, the Task Force recommended the passage of an ordinance forbidding the resale of parking permits at a higher price than charged by the City. Finally, it recommended the allowance of the sale of CoMo Park cards to downtown retailers at a discount for businesses to retail; City staff is already partnering with the downtown Community Improvement District (CID) on implementing this recommendation.

Table of Contents

*Only the main meeting points are listed in the Table of Contents, for full meeting details, see meeting agendas and minutes: https://gocolumbiamo.legistar.com/DepartmentDetail.aspx?ID=33865&GUID=91C93C43-E4A5-433D-9527-7D8031E36C62&R=74328941-d426-45a3-a27b-cd77ccfede1a

In addition, a Parking and Traffic Management Task Force Table of Contents that includes all documents, both presented at meetings and sent through email, can be found at: http://www.como.gov/community-development/parking-traffic-management-task-force/

Appendices

L. Staff Presentation: Fee in Lieu and Parking Management Programs, 8-24-16
M. Parking Cost Structure Outlook, 2015
N. Critical Issues for Task Force Subcommittees 9-7-16
O. Downtown Parking Meter Hood Report, 10-12-16
P. Analysis of Downtown Surface Areas, 10-12-16
Q. Committee Member & Staff Feedback on PTMTF UDC M-DT Recommendations, 10-26-16
R. Parking Permit Management Strategy Suggestions, 11-9-16
S. Working Draft of PTMTF Recommendations, 11-9-16
T. Working Draft of PTMTF Recommendations, 11-16-16
U. Strategy for Finalizing Sub-Committee Recommendations, PTMTF 12-7-16
V. Working Draft of PTMTF Recommendations, 12-7-16
W. City Parking Permits Use by Garage-Lot 12-7-16
X. City Parking Permits Use by Garage-Lot, Updated 1-25-17
Y. Boone County Coordinated Transportation Services Report, 2006

1. Background to Task Force

1.1 Smart Growth Parking Audit, Workshop & Recommendations

In December of 2014 the City of Columbia was awarded free technical assistance from Smart Growth America (SGA) to complete a parking audit of downtown and adjacent neighborhoods and to hold a subsequent community forum and stakeholder workshop.

With assistance from SGA and their project consultant, Jim Charlier, the City completed a parking audit in August of 2015 that focused on portions of downtown (on-street parking and parking garages), the Benton-Stephens neighborhood, the East Campus neighborhood and the pilot parking permit area north of downtown. The audit was performed over a 3-day period, Thursday through Saturday, and parking capacity was measured 4 times a day, over 4-hour intervals from 8:00 am to 8:00 pm.

The audit revealed that although downtown on-street parking was full at times, the downtown parking garages that were studied (8th & Cherry, 10th & Cherry and 5th & Walnut) had both hourly and permit parking available at all times. The audit also found that the pilot permit parking area (on Walnut, Park Street, E. Ash and St. James) was highly underutilized, with peak utilization rates at 35 percent. Conversely, on-street parking in Benton-Stephens and East Campus was consistently at full capacity (see Appendix A, City of Columbia Parking Audit Results, August 2015 and Appendix B, Peak Demand in City Garages, August 2015).

Following the audit, on September 22, SGA project consultant Jim Charlier held an evening forum, open to the public, on smart growth parking regulation strategies. On September 23, Charlier conducted a day-long stakeholder workshop for elected officials, City commission representatives, City staff, downtown business owners, community organizations, neighborhood representatives and property owners, and University of Missouri staff and students to discuss the parking audit results and potential smart growth parking strategies in further detail.

The resulting SGA consultant report, based in part on feedback from the stakeholder workshop, identified four actions the City could take to address needed parking policies and strategies: 1) Form a city-wide parking commission; 2) The use of mode share and public transportation to reduce downtown parking demand; 3) Development of a transportation demand management program as a collaboration between the City and University; and 4) Preparation of a downtown access and circulation plan (see Appendix C, SGA Final Parking Recommendations, 2015).

1.2 Formation of Parking and Traffic Management Task Force

On November 16, 2015 staff presented the parking audit results and the SGA final parking recommendations to City Council. At that time City Council requested feedback from the downtown CID and the final 2011 Parking Task Force report before making any decisions on the SGA recommendations.

On January 4, 2016 staff presented a report to City Council that again included the parking audit results and the final SGA parking recommendations, as well as the final report from the 2011-2013 Parking Task Force and a letter from the downtown CID supporting the SGA recommendation to form a parking commission with diverse stakeholder representation, including downtown businesses, developers, property owners, residents, MU and other colleges. At that time City Council requested that staff collect feedback from the various stakeholders who attended the workshop on who they thought should be represented on a potential parking commission and/or task force. The council also stated a preference for a temporary task force, versus a long-term commission.

On May 16, 2016, in response to staff suggestion that the Parking Task Force discussion be put on hold during the administrative delay period, City Council requested a resolution calling for the formation of a Parking and Traffic Management Task Force to evaluate best parking and traffic management practices in other cities, the SGA recommendations, and the Unified Development Code (UDC) regulations related to downtown parking as soon as possible.

On June 6, 2016 staff presented a staff memo and stakeholder input on the member representation for a Parking and Traffic Management Taskforce. The following

organizations requested representation on the Task Force: the CID; the Downtown Leadership Council (DLC); the University of Missouri; The Missouri Students' Association (MSA); Downtown Houses of Worship; the Benton-Stephens Neighborhood Association (BSNA); The North Central Columbia Neighborhood Association (NCCNA), the East Campus Neighborhood Association (ECNA);the Columbia Apartment Association (CAA); the PedNet Coalition; the Bike/Ped Commission (BPC); the Public Transit Advisory Commission (PTAC); and the Disabilities Commission.

The June 6, 2016 resolution establishing the Parking and Traffic Management Task Force called for membership from all of the organizations stated above (see Appendix D, Staff Memo, Stakeholder Correspondence and Resolution for Establishment of Task Force, 6-6-16). In addition the City Council nominated Councilpersons Mike Trapp and Karl Skala to serve as Task Force co-chairs. Thus, the Task Force membership was as follows:

- Greg Cecil (Missouri United Methodist Church)
- Michael McClung (Downtown CID)
- Deb Sheals (Downtown CID)
- Janet Hammen (DLC)
- Michael Sokoff (University of Missouri)
- Amy Wasowicz (MSA)
- Sarah Klaassen (BSNA)
- John Clark (NCCNA)
- Cindy Neagle (ECNA)
- Kenny Kvam (CAA)
- Mark Stevenson (CAA)
- Annette Triplett (PedNet Coalition)
- Jason Patrie (BPC)
- Katherine Lee (PTAC) Chuck Graham (Disabilities Commission)
- Michael Trapp (Co-Chair)
- Karl Skala (Co-Chair)

Amy Wasowicz was nominated by MSA to serve on the Task Force. However, because she was out of town for the summer, Saad Malik served as the MSA representative during the summer portion of the Task Force.

Details of the Task Force mission and timeline will be provided in the next section of this report.

2. Summary of Task Force Meetings

2.1 July 13, 2016: Taskforce Mission & Timeline

The first Parking and Traffic Management Task Force meeting was held on July 13, 2016. The main order of business on that day was to review the taskforce mission, which was to be completed in 6 months by the end of December, 2016. The Task Force was asked to complete the below action items in the order listed:

- Review and evaluate parking requirements and options for parking requirement waivers within the M-DT District of the DRAFT Unified Development Ordinance Review.

- Review and evaluate best practices related to parking and traffic management in other cities, as provided through examples in the Smart Growth America (SGA) report and presentation.

- Study and evaluate the SGA recommended actions to address parking policies and strategies, including the use of mode share and public transportation to reduce downtown parking demand, development of a transportation demand management program as a collaboration between the City and University, and preparation of a downtown access and circulation plan.

- Recommend whether an ongoing Parking and Traffic Management Commission should be established.

2.2 July 27, 2016: Parking Taskforce History; Background on Parking in C-2 and M-DT; Introduction of "Fee in Lieu"

At its July 27th meeting, the Task Force first reviewed the final report and recommendations from the previous City of Columbia Parking Task Force, as well as a staff update on the completed recommendations (see Appendix E, 2011 Parking Task Force Final Report & Completed Recommendations, 1-15-13).

The Task Force then reviewed the August 18, 2014 Central Business District (C-2) Amendment that first established the requirement for residential development in the C-2 district to provide one-quarter (.25) parking space per bedroom (see Appendix F, C-2 Amendment 8-18-14).

The Task Force also reviewed the draft Unified Development Code (UDC) parking requirement for the proposed Mixed-Use Downtown (M-DT) district, which was, at the time:

Residential development and redevelopment in the M-DT district shall provide one quarter of one (0.25) parking space per bedroom. This requirement can be satisfied on the site or within one-half (0.5) mile of the site (see Appendix G, Draft UDC M-DT Parking Requirements 7-27-16).

In addition, the Task Force discussed why Clarion Associates, the firm that helped develop the UDC, originally recommended no parking requirements for the M-DT district, based on the perception of the following market based solutions that result from parking shortages:

- Shortage of inexpensive parking incentivize a public parking authority to construct more parking, or;
- Added revenue to be gained from parking leads private entities to construct more parking and make it available to the public for a price, or;
- Tenants, residents, and users of downtown buildings tend to drive and park less (and over time occupancy tends to swing towards those who have fewer needs for parking spaces) (see Appendix H, Clarion's Response to No Parking Requirements for M-DT, 7-14-16).

Finally, Task Force member John Clark introduced the concept of a transportation development charge, or a “fee in lieu” of building parking, to the Task Force. The proposal included an option for downtown developers to pay a fee of $3,000 a bed, and to provide bus passes to every resident of their new building, in lieu of building the required parking. The $3,000 per bed would be split between the City’s transit service (to cover the $130 annual pass for many years) and the parking utility (to pay for strong enforcement of adjacent neighborhoods' residential parking permit programs). In addition, the proposal mentioned the

possibility of also charging a fee in lieu for commercial parking (See Appendix I, Fee in Lieu Proposal, Clark 7-13-16).

2.3 August 10, 2016: Downtown Parking Map & Totals; Parking Related to Recent Downtown Development; Best Parking Practices

On August 10th the task force reviewed a map of the total parking spaces in the downtown area, including City parking lots and garages, private lots and garages, MU lots and garages and all on-street metered spaces. Table 1.1 shows a summary of the downtown City and private parking totals (MU totals are excluded because MU does not currently provide parking for off-campus housing). For more detailed information visit http://www.como.gov/Maps/cityparking/.

Table 1.1 Parking Totals, Downtown Columbia

	Off-Street (Garages & Surface Lots)	On-Street Metered Spaces	Total
City	2818	1772	4590
Private	4520	0	4520
Total	7338	1772	9110

In addition, staff provided a presentation to the Task Force that reviewed not only the history and details of parking requirements and requirement proposals in C-2 and M-DT, but also a summary of recent downtown development, including the number of bedrooms and accompanying parking spaces built (and currently under construction) since approximately 2010. Table 1.2 demonstrates that the total parking required for recent residential construction, both prior to the residential parking requirement and after, amounts to .23 spaces per bedroom, while the actual parking provided amounts to .26 spaces per bedroom. However, it is worth noting that the majority of required parking built prior to the C-2 code amendment is associated with the construction of Midtown by Brookside and an accompanying multi-story parking facility (410 spaces).

To put the recent residential construction in perspective, if every resident for each recent bedroom built did own a car, they would account for approximately a

quarter of all downtown parking spaces, excluding MU parking, which does not provide spaces for off-campus residents (58 percent of total public parking spaces; 59 percent of total private parking spaces; and 29 percent of total public and private downtown parking spaces, see Table 1.2).

Table 1.2 Recent Downtown Development in Relation to Downtown Parking

Development	Bedrooms	Parking Required	Parking Provided	Total City parking	Total private parking	Total Downtown Parking
Pre C-2	1782	380	473			
Post C-2 (.25 spaces per bedroom)	882	221	150 *(Vehicle On-Site)* 48 *(Vehicle Off-Site)* 23 *(Bike and Motorcycle)*			
Totals	2,664 (29% of total downtown parking)	601 *.23 spaces per bedroom*	694 *.26 spaces per bedroom*	4,590	4,520	9,110

The staff presentation also included a review of best parking management and regulation practices in other cities. The main takeaways are listed below:

- A number of communities are considering a fee in lieu of parking requirements or a development impact fee for parking demand generated by new buildings;
- The most efficient parking programs have a comprehensive understanding of parking supply and demand through regular parking audits, community surveys to measure parking perceptions and/or License Plate Recognition systems;
- Parking utilities generally support transportation demand management strategies to reduce parking demand;
- Residential Parking Permit Programs are typical near downtowns and/or universities to deter overflow commuter parking, paid in part by residents who benefit from preferential access to on-street parking. Set systems in

place for residential permit application, considers neighborhood support (generally through required signatures) and need (generally through a parking audit of the area);

- Removal of parking requirements for developments can spur more residential redevelopment of historic and/or commercial spaces and support more affordable housing by separating the cost of parking from the cost of housing; however, "no parking" requirements work best when paired with strong regulation and enforcement for on-street parking

See Appendix J, Staff Presentation: C-2, M-DT, Downtown Development & Best Parking Practices, 8-10-16.

The Task Force also had a short discussion concerning the fee-in-lieu proposal first presented at the July 27th meeting by member John Clark. Task force co-chair Mike Trapp requested that the Task Force and city staff look further into the fee in lieu concept, and discuss more in depth at the next meeting.

2.4 August 24, 2016: Parking Needs-Downtown Houses of Worship; Fee in Lieu and Parking Management Programs

The first discussion item for the August 24 Task Force meeting was the parking needs for downtown houses of worship. Taskforce member Greg Cecil brought a number of items for Task Force review, including a letter articulating parking needs for downtown churches with specific concerns over the nearby bagged parking meters (which restricts parking) resulting from current construction; a list of daily downtown church activities and typical number of participants; and a map showing the number of metered parking spaces near downtown churches (see Appendix K, Parking Needs, Downtown Houses of Worship, 8-24-16). Consequently, Task Force co-chair Skala requested a staff report detailing the issue of downtown meter bags in relation to parking near churches.

The second item for Task Force review was a staff presentation on fee in lieu and parking management programs, per the previous request of co-chair Trapp. The staff presentation covered the following points concerning City fee in lieu parking programs:

- A fee in lieu program does put the city into the position of managing all downtown parking, at least for residential, and/or commercial, if commercial development is included in the program;
- Thus, an effective fee in lieu program should be accompanied by comprehensive parking data management that includes knowledge of occupancy of available public and private parking and current levels of community satisfaction with parking availability, as well as an understanding of how much parking demand will be generated by new construction;
- Allowing developers to pay fees into a municipal parking fund in lieu of providing the required parking on site can support centralized public parking, density and walkability by limiting the number of separate parking facilities in a downtown area, which can encourage driving from one site to the next rather than parking once and walking between nearby destinations;
- And/or in some cases, the community may wish to establish the fund in such a way that it can also be used for transit, bicycle, and pedestrian improvements that can reduce parking demand;
- The research did not reveal any examples of downtown fee in lieu programs that paid for residential parking permit programs adjacent to downtown;
- By consolidating parking in centralized public lots or structures and allowing developers an alternative to providing parking on-site, a fee-in-lieu system can encourage in-fill development and redevelopment in existing downtowns or historic buildings. It can also improve the overall efficiency of parking provision by addressing the needs of the area as a whole, rather than the needs of each individual site;
- In-lieu fees of any kind should be linked to an index of construction costs, or should be reviewed and updated regularly, so that inflation and changing conditions will not distort them.

Given the need to tie fee in lieu rates to parking construction costs, staff also presented the historical Columbia parking garage construction costs to the task force. Staff found that with inflation, the average cost to build a parking space in downtown Columbia is $18,400. (See Table 1.3 and Appendix L, Staff Presentation: Fee in Lieu and Parking Management Programs, 8-24-16). This is similar the national median construction cost for a new parking

structure at $18,599 per space and $55.66 per square foot (see Appendix M, Parking Cost Structure Outlook, 2015):

Table 1.3: Historical Columbia Parking Garage Costs

Garage	Year	Spaces	Cost at time	Cost w/Inflation	Cost/Space at time	Cost/Space w/Inflation
Short Street	2013	418	$12,000,000		$28,708.13	
5th & Walnut	2011	701	$13,000,000		$18,545	
8th & Cherry	1999	175	$2,300,000	$3,000,000	$13,143	$17,143
6th & Cherry	1997	379	$4,000,000	$5,300,000	$10,554	$13,984
10th & Cherry	1995	276	$2,650,000	$3,800,000	$9,601	$13,768
Plaza	1986	349	$2,600,000	$5,100,000	$7,450	$14,613
Average Cost						$18,400*

*Includes 2013 Short Street Garage and 2011 5th & Walnut Garage costs.

Finally, at the August 24th meeting Task Force member Kathy Lee made a motion to form three sub-committees as Task Force working groups. The motion passed and the Task Force decided to continue the sub-committee discussion at the next meeting.

<u>2.5 September 7, 2016:</u> Discussion with Developer Eran Fields; Sub-Committee Formation and Priorities Brainstorming Session

On September 7, 2016 Eran Fields, developer of the downtown Rise, a primarily residential building under construction at the northeast corner of Ninth and Locust Street, attended the task force meeting to discuss what he had learned about parking management over his years of developing properties in various urban environments. The main points of the discussion were:

- Parking management should aim to improve the experience of being downtown by having short-term parking available fairly close to retail businesses.
- Most of Fields' developments have retail on the ground floor. He wants there to be easy, accessible parking for visitors. He makes a distinction between short-term parking for access to businesses vs. long-term parking for car storage for residents.
- Reduce required residential parking. If you build parking, there will be cars to fill the spaces. Make it expensive and inconvenient to drive and park, and instead affordable and convenient to use other forms of transportation. This also reduces the cost of car ownership for college students and their overall financial burden.
- University has a responsibility to reach out to students about how driving impacts the environment, personal finances, city maintenance costs, etc. The City also has a responsibility to work with University, educate and provide transit passes.
- Developers also have a responsibility to share this information. At Fields' developments, they have residents sign an agreement that stipulates they will not store a vehicle within a 1-mile radius of their development. Developers can also offer transit passes.
- Parking is expensive for developers, and developers will pay a fee in lieu to avoid it. City should consider transportation impact fee and/or fee in lieu for developers (just like water, sewer, electric impact fees that developers regularly pay).
- Also important to improve surrounding neighborhood residents' experience and reduce non-resident nuisance parking.

His experiences building in different areas:

- University of Florida: He built complexes with zero parking in Gainesville. They have been 100 percent leased for years, and have raised rent prices. Developers can provide more affordable housing if they do not have to provide parking.
- University of Washington and University of Oregon have no parking requirements, and he takes advantage of that every time.

After the discussion with Eran Fields, the Task Force brain stormed on the critical issues for the three sub-committees to consider. Task force staff liaison Leah Christian had broken out the topics from the smart growth workshop recommendations into three headings to both lead the discussion and form subcommittees around: Downtown Parking Management, Parking Management for Neighborhoods Adjacent to Downtown and Transportation Demand Management. The final ideas from this session can be found in Appendix N, Critical Issues for Task Force Subcommittees 9-7-16.

<u>2.6 October 12, 2016:</u> Vote on M-DT Parking Requirement Recommendations; Downtown Parking Meter Hood Report; Analysis of Downtown Surface Parking

On October 12, 2016 the task force sub-committees, Downtown, Neighborhoods and Transportation Demand Management (TDM), met for the first time to discuss their individual charges. Post subcommittee meetings, per the direction of the downtown subcommittee, the entire Task Force voted on, and passed, the recommendation for the following additions to the UDC's M-DT residential parking requirements. This recommendation was provided to the Planning and Zoning Commission at the time:

Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom. Entities are prohibited from meeting this requirement through the provision of publicly funded parking spaces. An on-site parking space shall be provided for each unit that is required, per the Fair Housing Act, to be accessible for persons with

disabilities. All other parking requirements can be satisfied on the site or within one-quarter (.25) mile of the site.

In addition, the taskforce recommends that the one-quarter (.25) parking space per bedroom requirement be reviewed periodically as conditions continue to evolve and as we increase our understanding of parking supply and demand.

Staff also provided the downtown parking meter hood report (see Appendix O, Downtown Parking Meter Hood Report, 10-12-16) and an analysis of surface area, including surface parking, per the three downtown districts (CID, M-DT and the DLC study area) (see Appendix P, Analysis of Downtown Surface Areas, 10-12-16), to the Task Force, but there was not time to review these items.

<u>2.7 October 26, 2016:</u> Staff and Committee Feedback on M-DT Parking Requirement Recommendations; Amended M-DT Parking Requirement Recommendations

On October 26, 2016 the Task Force subcommittees again met individually to discuss both the committee member and staff feedback on their October 12 UDC recommendations to the Planning and Zoning Commission (see Appendix Q, Committee Member & Staff Feedback on PTMTF UDC M-DT Recommendations, 10-26-16). After the subcommittee meetings, the entire Task Force voted on, and passed, the following revised language, based on staff suggestion, for their recommendation concerning the requirement for on-site accessible spaces for downtown developments:

All accessible parking spaces that are required by the City's current adopted Building Code shall be built on-site. All other parking requirements can be satisfied on-site or within one-quarter (.25) mile of the site.

The Task Force also voted to remove their recommendation to prohibit downtown developments from meeting their parking requirements through the provision of publicly funded parking spaces, and made a request for staff to provide further parking permit management strategy suggestions at the next meeting and to

provide data on downtown parking permit holders as soon as possible. The revised recommendations were provided to the Planning and Zoning Commission at the time.

2.8 November 9, 2016: Parking Permit Management Strategy Suggestions; Further Additions/Amendments to Working Draft of Task Force Recommendations

The November 9, 2016 Task Force meeting started with individual subcommittee meetings and was followed by the main Task Force meeting. The Task Force reviewed staff suggestions for managing parking permits (see Appendix R, Parking Permit Management Strategy Suggestions, 11-9-16). It also continued work on its final council recommendations (see Appendix S, Working Draft of PTMTF Recommendations, 11-9-16).

2.9 November 16, 2016: Strategy for Finalizing Sub-Committee Recommendations; Further Additions/Amendments to Working Draft of Task Force Recommendations

On November 16, 2016 the Task Force subcommittees met and were provided with a strategy for finalizing individual sub-committee recommendations to bring to a vote for the entire Task Force to add to the working draft of final recommendations.

The strategy was to identify problems/issues for the particular sub-committee area of focus (downtown, neighborhoods or TDM); define strategies for solving identified problems and to identify needed resources to fulfill strategies. Subsequent to the subcommittee strategy sessions, the Task Force voted on further additions and amendments to its final recommendations (see Appendix T, Working Draft of PTMTF Recommendations, 11-16-16).

<u>2.10 December 7, 2016</u>: Further Additions/Amendments to Working Draft of Task Force Recommendations; City Parking Permit Use by Garage/Lot

The taskforce subcommittees met and continued to work on finalizing their strategies (see Appendix U, Strategy for Finalizing Sub-Committee Recommendations, PTMTF 12-7-16) and individual recommendations. When the entire Task Force reconvened, it voted on further additions and amendments to its final recommendations on December 7th, 2016 (see Appendix V, Working Draft of PTMTF Recommendations, 12-7-16).

In addition, staff provided the requested data to the Task Force on the estimated percentage breakdown of downtown parking permit holders by use (see Appendix W, City Parking Permits Use by Garage-Lot 12-7-16). More recently City staff updated this information (see Appendix X, City Parking Permits Use by Garage-Lot, Updated 1-25-17). Table 1.4 on the following page demonstrates the estimated totals and percentage breakdown of downtown parking permits by use, based on the 6 garages and 3 primary lots that have permits open to the public shown on the maps in Appendix X.

Table 1.4: Estimated Totals and Percentage Breakdown of Parking Permits by Use

	1/25/2017	
	Number	**Percent**
Total Permits	2,417	100%
Estimated breakdowns by permit use*		
Business/employer**	1,087	45%
City of Columbia Employee	581	24%
Residential***	217	9%
Hotel	133	6%
Individual	99	4%
City of Columbia Fleet	96	4%
Other government	69	3%
Other	45	2%
To be determined	20	1%
House of Worship	15	1%

*As there is currently no means for identifying use through the parking permit application process (applicants are not asked if they are a downtown resident, employee, etc.), the numbers provided in the maps in Appendices W and X and in Table 1.4 above are based on a retroactive classification of customer type based on permit customer name. As a result of this data review process, and to improve future data management, the parking utility plans to start collecting "customer type" information during the permit application process.

**72% of the parking permits are for business or governments that have employees parking downtown. This increases to 76% if accounting for parking for City fleet vehicles.

***Note that the sum of "residential" and "individual", the class most likely to also be residential usage (but not entirely), is 316 or 15%.

2.11 December 14, 2016: Finalization of Taskforce Recommendations

On December 14th the subcommittees did not meet but instead the entire Task Force met to hash out its final recommendations (see Section 3, Recommendations for City Council Action).

In addition, Task Force member John Clark requested inclusion of the 2006 Boone County Coordinated Transportation Services Report in the appendices of the final Parking and Traffic Management Task Force report and the Task Force agreed (see Appendix Y, Boone County Coordinated Transportation Services Report, 2006).

3. Recommendations for City Council Action

Below are the Parking and Traffic Management Task Force final recommendations completed on December 14, 2016:

1. Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom.

2. M-DT district developments of 20 bedrooms or less shall be exempt from minimum parking requirements.

3. M-DT district developments shall be prohibited from meeting minimum parking requirements through the provision of hourly parking spaces managed by the City.

4. All accessible parking spaces that are required by the City's current adopted Building Code shall be built on-site in the M-DT district. All other parking requirements can be satisfied on-site or within one-quarter (.25) mile of the site.

5. Pass an ordinance forbidding the resale of parking permits at a higher price than charged by the City.

6. Allow the sale of CoMo Park cards to downtown retailers at a discount for businesses to retail in order to increase access and incentivize businesses to promote use.

7. The City Council shall appoint a permanent Parking and Transportation Management Commission with the following mission and responsibilities:

   A. The Commission shall partner with the City's parking utility to hire a parking and transportation management consultant to do the following:

   - Assess parking supply and demand downtown and in surrounding neighborhoods

- Develop a financial pro forma for the cost to operate and maintain parking infrastructure and systems, including residential parking permit programs and transportation demand management strategies

B. The Commission shall oversee a continuous assessment of parking availability and demand management strategies city-wide.

C. The Commission shall work to establish partnerships with downtown businesses, the CID and the DLC to facilitate market incentives for non-motorized transportation, bike share programs, frequent downtown transit orbiters and the consideration of mixed used neighborhood districts.

D. The Commission shall make recommendations to council concerning the parking requirements in the M-DT district as needed, no less than every two years, to address rapidly changing parking conditions downtown.

E. City staff shall provide regular evaluations of downtown parking supply and demand using systems such as License Plate Recognition (LPR), physical audits, downtown community surveys, evaluations of public perceptions of parking availability and cost analysis of new parking facilities to the Parking and Transportation Management Commission.

F. The Commission shall consider a program that would allow downtown developers to pay a fee to the City in lieu of meeting minimum parking requirements. Prior to the implementation of this program, the following would be addressed:

- Obtain a clearer understanding of downtown and surrounding neighborhood parking supply and demand.
- Study how to reduce parking demand. Bike/Pedway and Transit infrastructure will be considered in all proposals. Support the construction of bike lanes and pedways within new developments

Fees remitted to the City through a fee in lieu program should be used for, but not limited to, funding:

- A City managed and enforced parking system for downtown and surrounding neighborhoods, including residential parking permit programs (RPPP).
- A transportation demand management strategy such as walking, biking and transit infrastructure and promotion.
- Non-motorized education programs directed to groups that will benefit the most, specifically low-income and youth populations.

G. The Commission shall develop a process for creating fair, equitable, desired and effective residential parking permit programs (RPPP) in neighborhoods near downtown and the university. The purpose of RPPP is to allow people who live in neighborhoods surrounding downtown to safely park at or near their homes and to allow safe travel throughout the neighborhood.

In developing the RPPP process, the Commission shall consider or address the following issues:

- The lack of sufficient parking to meet the needs of existing residents, including their guests;
- How to protect residential neighborhoods from commuters and overflow parking from surrounding institutions and organizations;
- Ensure that long-term storage of cars by non-residents (overnight and multi-day parking) does not impact residential parking needs;
- Primary program funding should not come from neighborhood residents or parking meters on neighborhood streets.

Some neighborhoods should consider starting with Resident Parking Only signs (during certain hours), similar to signs found in the Grasslands, and education on neighborhood parking to see if they are effective at reducing overflow parking before implementing a fully operating RPPP.

In all, the Commission shall develop a comprehensive regulatory enforcement program for downtown and surrounding neighborhoods.

H. The Commission shall examine the current allotment of parking permits by land use groups (residential, commercial, employee, other) and consider measures to proportion distribution of parking permits based on specified land use. Such measures may require permit applicant verification of downtown residency or employment. Proportions could be based on expected total parking generated for each type of use.

I. The Commission shall complete a review and evaluation of best practices related to parking and transportation management in other cities, as provided through examples in the Smart Growth America (SGA) report and presentation, as the Task Force timeline and priorities emphasized making recommendations related to M-DT parking requirements in the UDC.

J. The Commission shall complete a study and evaluation of the SGA recommended actions to address parking policies and strategies. This will include the following:

- The use of mode share and public transportation to reduce downtown parking demand;
- Development of a transportation demand management program as a collaboration between the City and the University of Missouri, and other institutions and organizations that generate parking demand and traffic;
- Preparation of a downtown access and circulation plan.

K. In the interest of promoting non-motorized transportation, and reducing parking demand through the development of a walkable downtown, the Commission shall consider, and provide recommendation to City Council on, proposals for non-motorized thoroughfares in the downtown district.

L. The Commission shall consider expanding the downtown on-street parking permit program.

M. The Commission shall consider moving parking garage metered spaces to the ground floor.

N. The Commission shall consider the following recommendations related to accommodating the parking needs of downtown places of worship:

- Explore meter bag options, for example creating religious organization parking meter hood program, allowing long term use or continuous possession of parking meter hoods and/or sharing the list of upcoming meter hood reservations.
- Strategic taxi locations with house of worship valet options for Sunday mornings.
- Potential implementation of a bus service orbital that would provide transportation to downtown locations from one central location with participation from houses of worship.

O. The Commission shall consider the following recommendations related to parking meter time limits:

- Increase downtown meter time limits from 2 to 3 hours.
- Enforcement should be friendly and certain. First infraction should not be a ticket, but instead a note/coupon (from downtown business) with a reminder of time limits.
- Discouragement of repeat offenders with graduated parking fines.

P. The Commission shall consider the following recommendations related to parking utility financing:

- Review the appropriation of parking revenues, fines and fees

Q. The Commission shall consider the following recommendations related to parking signage:

- Review parking signage for uniformity, clarity, visibility. Collaborate with the University for consistent signage approach.

R. The Commission shall explore options for regional transit for long distance commuters such as shuttles to Jefferson City, St. Louis, Kansas City and other communities in mid-Missouri. The purpose would be to allow more students and visitors car-free options when in Columbia.

City of Columbia 2015 Parking Audit Results

I. Audit Time Period

Staff and volunteers measured parking capacity at the four time intervals, during the three days, shown below.

Days	Times
Thursday, August 27	8:00 am
Friday, August 28	12:00 pm
Saturday, August 29	3:30 pm
	8:00 pm

II. Focus of the Audit

Areas	Factors
Downtown on-street supply	Utilization*
Downtown off-street supply	Excess Capacity**
North Central Permit Pilot	Turnover***
Benton Stephens	
East Campus	

***Utilization**: The percentage of parking spaces utilized in any given area during the different times of the day/week

****Excess Capacity**: For on street parking, the number of empty spaces at any given time, minus the preferred number of empty spaces (about 15% of total supply for on-street). For off street parking, the number of empty spaces at any given time, minus the preferred number of empty spaces (about 10% of total supply for off-street).

*****Turnover**, in most areas one space per block was examined at each interval to see how long cars were staying. Staff and volunteers performed a specific downtown turnover study by chalking all of the cars parked on each block at each interval.

III. Downtown Audit Results

On Street Parking: Broadway from 8th-Short & 9th Street from Broadway to University			
	Thursday	**Friday**	**Saturday**
Utilization	55% utilization early morning, and between 70 & 80% rest of day	On Street 57% utilization early morning, and between 83 & 90% rest of day	31% utilization early morning, and between 78 & 86% rest of day
Excess Capacity	Excess capacity of +3 in morning, near -1 mid-day, near +1 late afternoon, and near -1 at night.	Excess capacity of 3 in morning, -.9 mid-day, -.3 late afternoon, and near -1.3 at night.	Excess capacity of 7 in morning, near -1 mid-day, near +.03 late afternoon, and near -.6 at night.
*Turnover	13 cars parked >than 3 hours; 3 cars parked more than 7 hours; 0 cars parked more than 12 hours	18 cars parked >than 3 hours; 7 cars parked more than 7 hours; 3 cars parked more than 12 hours**	17 cars parked >than 3 hours; 0 cars parked more than 7 hours; 1 cars parked more than 12 hours

*This turnover study focused on all the cars parked on both sides of Broadway from 8th to 10th street, and both sides of 9th street, from Broadway to Locust, a total of 110 spaces, (cars were chalked 4 times a day, based on the audit schedule times shown above).

**Parked overnight until Saturday morning

Off Street Parking: 8th & Cherry, 10th & Cherry, and 5th & Walnut Garages Hourly			
	Thursday	**Friday**	**Saturday**
Utilization	41% in early morning, and between 64 & 73% rest of day	34% in early morning, and between 64 & 76% rest of day	57% in early morning, and between 68 & 75% rest of day
Excess Capacity	Excess capacity near 40 early morning, 14 at mid-day, 19 in late afternoon and 15 at night.	Excess capacity near 22 early morning, 12 at mid-day, 12 in late afternoon and 26 at night.	Excess capacity near 26 early morning, 18 at mid-day, 13 in late afternoon and 12 at night
*Permit			
	Thursday	**Friday**	**Saturday**
Utilization	66% early morning, 81% mid-day, 49% late afternoon	47% early morning, 30% mid-day, didn't collect late afternoon	
Excess Capacity	Excess capacity of 66 early morning, 45 at mid-day, 14 late afternoon, 10 at night	Excess capacity of 30 early morning, 32 at mid-day	

***Permit** parking not enforced after 5:00 on weekdays or on Saturday or Sunday.

**Turnover: There was not enough staff or volunteer capacity to chalk all of the cars in this study. Therefore, one space in each garage was tracked to measure turnover. Turnover did not appear to be a major issue in the garages: Out of the 3 spaces in the garages examined for turnover 12 times throughout the parking audit study in the hour intervals shown above, 1 car was parked more than 3 hours, 2 cars were parked more than 7 hours, and 6 cars were parked more than 12 hours.

IV. Meter Permit Pilot Area Parking Results

The former City of Columbia Parking Task Force (established July, 2011), a voluntary group of citizens commissioned by the mayor to analyze parking throughout downtown Columbia, studied occupancy rates at our on-street meters and found our 10-hour meters, which are primarily on the periphery of downtown, to be heavily under-utilized. The Task Force proposed offering 200 discounted permits to downtown business employees for parking at these 10-hour meters as a way of utilizing these spaces and, at the same time, freeing up prime parking spaces in the central core for customers.

Below are the audit results of a number of those spaces, from Walnut and Providence, to Walnut and 5th; Park Street from 10th to Orr; E. Ash from Orr to St. James; and St. James from E. Ash to Park.

Meter Permit Pilot Parking Area			
	Thursday	**Friday**	**Saturday**
Utilization	6-30%	15-36%	6-35%
Excess Capacity	*Positive	Positive	Positive

*There was plenty of excess capacity in the meter permit pilot parking area at all times.

** **Turnover:** There was not enough staff or volunteer capacity to chalk all of the cars in this study. Therefore, one space on each block in the meter permit pilot area was tracked to measure turnover. Turnover did not appear to be a major issue in this area: Out of the 8 spaces in the area examined for turnover 12 times throughout the parking audit study in the hour intervals shown above, 7 car was parked more than 3 hours, 6 cars were parked more than 7 hours, and no cars were parked more than 12 hours.

V. East Campus and Benton Stephens

East Campus: University, Rosemary & Anthony from College to S. Williams			
	Thursday	**Friday**	**Saturday**
Utilization	89- 139%*	120-141%	85-113%
Excess Capacity	**Negative	Negative	Negative

*The number of available spaces in E. Campus was estimated using the same parking space length that is used to create downtown parking spaces. A number of volunteers informed staff that cars in this area were parked tightly into spaces, and often ran over into yellow lines or residential driveways.

**There was negative excess parking capacity in this East Campus area at all times during the audit.

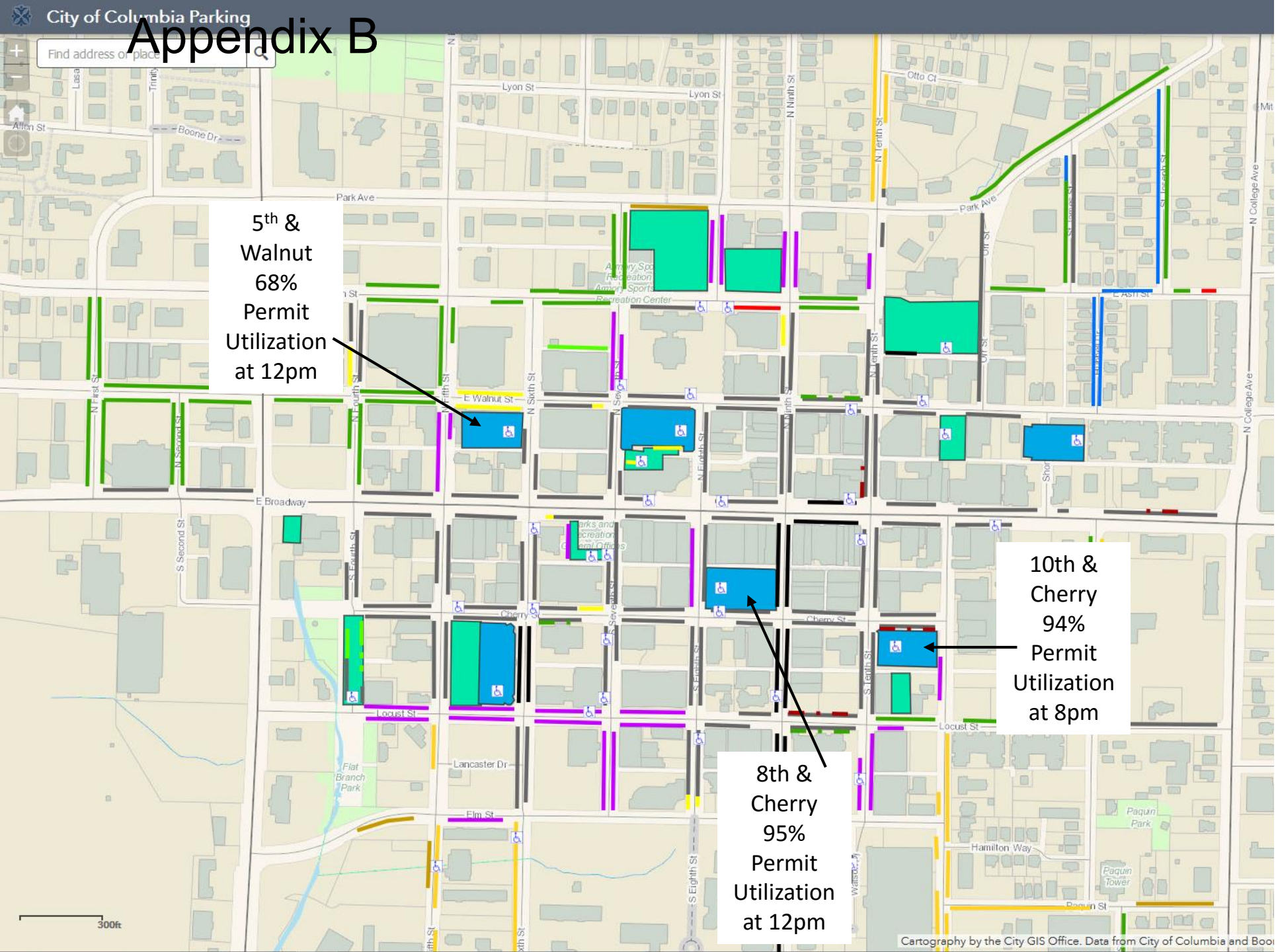
Benton Stephens: Windsor from College to Ripley & Ripley from Walnut to Richardson			
	Thursday	**Friday**	**Saturday**
Utilization	89-121%*	113-124%	113-135%
Excess Capacity	**Negative	Negative	Negative

*The number of available spaces in Benton Stephens was estimated using the same parking space length that is used to create downtown parking spaces. A number of volunteers informed staff that cars in this area were parked tightly into spaces, and often ran over into yellow lines or residential driveways.

**There was negative excess parking capacity in this Benton Stephens area at all times during the audit.

*****Turnover:** There was not enough staff or volunteer capacity to chalk all of the cars in this study. Therefore, one space on each block in East Campus and Benton Stephens was tracked to measure turnover. Cars in these areas were staying for long periods of time. Out of the 20 spaces in these areas examined for turnover 12 times throughout the parking audit study in the hour intervals shown above, all of the cars tracked were parked more than 3 hours, 8 of those cars were parked more than 7 hours and the majority (39 cars) were parked more than 12 hours.

Appendix B



August 2015 Peak

Peak utilization of parking permits from the August 2015 City Parking Audit

Surveyed Permit Parking 73% Utilization at 12pm

Smart Growth America
Making Neighborhoods Great Together

Columbia, Missouri

Parking Audit

Report and Suggested Next Steps

Building Blocks for Sustainable Communities Program
September 22 and 23, 2015

To: Leah Christian, Management Fellow, City Management Office

From: Jim Charlier, Charlier Associates, Inc.

Date: September 30, 2015

Background

The City of Columbia, Missouri, applied to Smart Growth America (SGA) for a parking audit workshop in order to "further current city efforts to reduce public demand for subsidized downtown parking, and to develop a fairer transportation system that benefits both car and non-car owners." Using a tool provided by SGA and guidance from the project consultant, City staff and volunteers conducted a parking audit to evaluate current parking usage and availability in several neighborhoods in, and adjacent to, downtown. After reviewing the results with City staff, the project consultant traveled to Columbia to conduct the parking audit workshop on September 22 and 23rd, 2015.

The parking audit workshop was designed as an opportunity to further discussions on how the City might most effectively partner with other entities to manage parking to achieve community revitalization goals. Following an evening presentation open to the public, the project consultant conducted a day-long stakeholder workshop for elected officials, city staff, downtown business owners and residents, civic association leadership and neighborhood representatives, and a leader of the University of Missouri facilities team. The workshop provided a neutral setting where an impartial parking expert could evaluate local policies and practices and offer advice based on the state of the practice, with an emphasis on what works well and what should be avoided.

The intent of the workshop was neither for SGA to create a plan nor bind the community to any particular course of action, but rather to facilitate a discussion within the community about how

best to manage parking in the Downtown Columbia area. The purpose of this memo is to the summarize SGA recommendations to support further discussion and decisions by Columbians to facilitate improved parking management.

1. Key issues addressed during the workshop

This workshop was focused on the Downtown Columbia area, including surrounding neighborhoods and taking into account the adjacent campus of the University of Missouri and the nearby campuses of Stephens College and Columbia College. Columbia is a city with a population of about 120,000 that holds the county seat of Boone County and is the only city in the Columbia Metropolitan Area.

Downtown Columbia is a thriving mixed-use downtown with healthy retail storefronts, destination restaurants, office buildings and a significant amount of multi-family residential space associated with student condo and apartment buildings. The presence of residential buildings has been a boon to the economic vitality in downtown, but also a source of growing, long-term (overnight/multi-day) parking demand.

The City has been interested in smart growth solutions and has had a number of smart growth successes. However, with a rapidly growing student and general population, and a culture of car dependency, demand for parking downtown and in adjacent neighborhoods has outpaced available supply. The city, university and community leaders realized that smart growth principles are a necessary part of any parking solution, but the community as a whole, as well as city staff, lacked understanding of how these principles could be applied to alleviate the parking predicament. As a result, public parking discussions devolve into struggles over public parking space, and city staff has not had an appropriate tool kit with which alleviate these community conflicts.

The parking audit workshop was intended to provide two opportunities for the city. First, it would provide a platform with which to bring diverse public parking stakeholders to the table. City leaders and staff, the University of Missouri, downtown groups and businesses, local not-for-profits and neighborhood associations were committed to participate in the workshop and to partner to implement tools learned from the session. Second, the workshop would provide new tools for city staff and the community to apply towards the resolution of their parking challenges.

Moreover, the workshop was intended to further city efforts to reduce public demand for subsidized downtown parking and to develop a more equitable transportation system that benefits all travelers. The City intends to use the knowledge gained from the workshop to integrate parking solutions into its ongoing development code update, improve the city's evolving residential parking permit program, create a downtown employee parking/transit program and a Parking Advisory Commission, and improve the overall usefulness of, and participation in, the public transit system.

Specific topics addressed at the public forum and stakeholder workshop included:

- Results of the parking audit conducted by the City using tools provided by SGA;
- Overall trends in travel demand in the US and in Missouri;
- Implications of technological advances for future parking demand;
- Basic principles of modern, strategic parking management;
- Strategic parking management techniques and practices, including:
- Shifting transportation mode share away from single occupant vehicles;
- Shared parking and joint parking and unbundling residential parking ownership;
- Fee-in-lieu payments;
- Grandfathering of storefront parking arrangements;
- Enforcement approaches and technologies;
- Timing of new parking supply;
- Parking and urban design;
- Permit parking;
- Time limits;
- Parking pricing; and,
- Parking districts and integrated parking management systems.

2. Target policies/ideas/strategies discussed during the workshops

Discussion at the well-attended evening public forum set the stage for more specific analysis and debate at the stakeholder workshop the next morning. The workshop culminated in the development of consensus goals and action items, derived from the work of break-out teams of local stakeholders, facilitated by SGA and city staff.

Stakeholder discussions centered around several key issues:

- The need for accurate, real-time metrics about parking demand and supply;
- How to integrate the programs and policies of the City and UM administration;
- How to protect and grow downtown businesses and the downtown economy;
- How to create a walkable downtown and walkable neighborhoods;
- How to increase transit service levels and transit ridership;
- How to protect residential neighborhoods from overflow university parking;
- How to implement a city-wide approach to residential parking permit districts;
- How to use leading edge technologies to improve parking management; and,
- How to equitably distribute the costs of providing parking to the end users.

Consensus goals developed by workshop attendees included:

1. People who live in neighborhoods are able to safely park near their homes.
2. Downtown parking is managed in a way that helps downtown grow and thrive.
3. Programs of the City and University affecting downtown are well integrated.

4. Long-term storage of cars (overnight and multi-day parking) does not impact business and residential short term parking needs.

3. Actions to address policies/strategies

The stakeholders developed the following list of consensus priority actions:

a. Form a city-wide parking commission. (Lead: shared by City staff and City Council)
This commission would initially focus on downtown and surrounding neighborhoods, but would later broaden its mission to include all areas of the city. The Columbia City Council has called for the formation of a Parking and Traffic Management Taskforce. Due to a current departmental re-organization process, the city plans to hold off on the formation of the Parking and Traffic Management Taskforce until September of 2016.

b. Use mode share and public transportation to reduce downtown parking demand. (Lead: Parking and Traffic Management Taskforce)
A consultant will complete a new transit plan for the local transit system (COMO Connect) in the coming months (procurement is almost complete). Use that project to develop metrics for mode shift away from driving and establish city-wide mode share objectives to ensure an integrated approach to parking and transportation. Mode share objectives are not included in the Transit Service Analysis and Planning Assistance Project contract with Olsson Associates that has already been approved by council. However, there is potential to include mode share objectives in any plan that is developed after the transit study is completed in early 2017. One of the Parking and Traffic Management Taskforce objectives will be to analyze and potentially include mode share objectives in the transit plan.

c. Public information, marketing and education. (Lead: Parking and Traffic Management Taskforce)
Develop a transportation demand management (TDM) program similar to GO Boulder, as a collaboration between the City and University, which provides information and educational resources on travel choices, including walking, bicycling, transit and driving. Develop outreach to ensure that people are aware of multimodal opportunities and have access to transit passes and other resources to encourage a shift in travel away from single occupant vehicles. Develop an employer TDM outreach to work with employers in Columbia (including the university and colleges) to help employees benefit from commute options and choices. With the exception of university and college partnerships, the City of Columbia currently has a number of outreach programs (see below) similar to those under the umbrella of GO Boulder. Barring council direction to alter current activities, staff plans to continue these programs:

COMO Connect, the City's Public Transit System, has a number of programs aimed at increasing awareness of, and access to, transit opportunities. Children under 5 years of age ride free, and students 5-18 years of age can ride free by displaying a valid student ID. The disabled, elderly (ages 65+ years), Medicare and Medicaid recipients, and qualified low income residents can apply

for half fare eligibility through the COMO Connect website. In addition, downtown employees qualify for half-price bus fares, priced at $25 a month. Finally, all persons, including city employees, who have purchased a parking permit in an unmetered off-street parking facility qualify for a free, annual unlimited use bus pass. These programs are currently promoted through the COMO Connect and the downtown Community Improvement District (CID) websites.

Since 2008, the city's Get About Education and Outreach programs, managed by the Parks and Recreation Department, has provided a growing number of programs designed to encourage and educate our community about the benefits of healthy transportation. Bicycle safety and skills classes follow the curriculum of the League of American Bicyclists, a national advocacy organization. Classes are offered free of charge and include City Cycling, Bike Buddy, bicycle maintenance and weather related cycling seminars. Encouragement programs include a wide variety of theme rides introducing cyclists of all skill levels to bicycle friendly routes. Ride participants are introduced to streets with bike lanes or pedways and those with low traffic volume and connectivity to the Columbia trails system. GetAbout staff participates in numerous outreach opportunities throughout the year at community-wide events, campus activities and workplace seminars. Collateral materials include bike maps, trail guides and bicycle/pedestrian safety pamphlets. GetAbout partners with the CID and various City departments (Transit, Health and Columbia Police Department) to offer awareness activities including Bike, Walk and Wheel Week, Trails Day and Lighten up Columbia (bike light giveaway program). Funding for GetAbout Columbia is provided by the Federal Highway Administration's Non-Motorized Transportation Pilot Program.

On August 17th, 2015, the city's parking utility started a pilot project offering 200 discounted permits to downtown business employees, and others with long-term parking needs, to park at 10-hour meters away from prime parking spaces in the city's central core. Permits are currently $35 a month and are processed by Parkmobile, Inc. To date, 38 permits have been sold.

As for a larger employer TDM approach, any effective one would need to be completed by MU and University Hospital and focus not only on employees but students as well. The Parking and Traffic Management Taskforce will explore this option further, as it will include University of Missouri representation. It will also seek ways to potentially strengthen and promote the city's current TDM programs.

d. Prepare a downtown access and circulation plan. (Lead: Parking and Traffic Management Taskforce)

Develop a downtown access and circulation plan to address parking and transportation in downtown and the surrounding neighborhoods. The ACP will result in strategies for improving the operations of each mode – pedestrian, bicycle, transit and personal vehicle – and will establish metrics to support ongoing monitoring and reporting of progress toward plan implementation. Data collection in support of performance metrics will be an early part of plan development. The project will evaluate leading edge technological solutions and tools for parking, transit and traffic management. The plan will address long-term vehicle storage needs (overnight/multi-day parking) to free up short-term parking for access to downtown businesses. The project will be coordinated

with the Planning and Zoning Commission, the Bicycle/Pedestrian Commission and the new Parking Commission (see a above) to ensure broad awareness of the emerging plan and strong community buy-in and support for implementation.

Staff believes that the existing public street system and circulation pattern is adequate to serve the downtown area. Besides the on-street and public garage vehicular parking spaces that are available, other projects have been done and/or are pending that will potentially improve downtown access for a variety of modes.

The GetAbout program has implemented hundreds of additional bicycle racks/bicycle parking spaces in the downtown area, and provided funding for sidewalk repairs and improvements, which has been a major upgrade to non-motorized mode access. Other sidewalk projects are continually in process.

The pending Transit Master Plan to be done for COMO Connect will provide new research to maximize the efficiency of COMO Connect's downtown access, and potentially increase ridership and result in a mode shift away from private motor vehicles.

The parking utility has already begun to attend to downtown's long term parking needs through permit price structures based on traveler intent (i.e. hourly visitor, downtown employee, downtown resident, etc.) and prices will continue to be adjusted accordingly as the city grows.

However, the City Council would like the Parking and Traffic Management Taskforce to examine the possibility of a downtown access and circulation plan. The city cannot offer a firm commitment to such a plan until the taskforce has gathered more information.

4. Timeframe for accomplishing actions

Within 3 months following workshop

- Provide City Council with a briefing on outcomes from the parking audit and workshop and this action plan (Completed)

September, 2016

- Implement new Parking Commission and/or Taskforce

Winter and Spring 2017

- Probable initiation of development of transit plan for COMO Connect
- Likely inclusion of mode share analysis and objectives in plan development

Spring 2017

- Prospective inclusion of new TDM outreach program in 2018 budget development for consideration by City Council

- Potential inclusion of new downtown access and circulation plan in 2018 budget development for consideration by City Council

Fall 2017

- Potential initiation of development of new TDM outreach program
- Potential initiation of development of new downtown access and circulation plan

Assistance provided with grant support from U.S. EPA's Office of Sustainable Communities under their Building Blocks for Sustainable Communities Program

Appendix D

Department Source: Community Development - Planning
To: City Council
From: City Manager & Staff
Council Meeting Date: June 6, 2016
Re: Establishing a Parking and Traffic Management Task Force (Case #16-139)

Executive Summary

Establishing a Parking and Traffic Management Task Force

Discussion

This action will establish a Parking and Traffic Management Task Force, per the request of City Council. As the result of a Smart Growth America (SGA) parking audit, workshop and resulting recommendations last fall, the City Council requested stakeholder feedback (as represented by parking workshop attendees) on the potential composition of a Parking and Traffic Management Task Force. In addition, in recent months, as downtown churches have become more involved in downtown parking challenges, a number of council members have requested that they also have representation on the task force.

The proposed resolution reflects the parking stakeholder and City Council requests for the Parking and Traffic Management Task Force composition, with the exception of the Downtown Community Improvement District (CID) request for four member representatives, which has been pared down to two CID member representatives in order to keep task force size manageable. The correspondence and feedback from stakeholder groups is attached to this report, with the exception of The North Central Columbia Neighborhood Association (NCCNA), the East Campus Neighborhood Association (ECNA), and churches within the CID area. Representatives from NCCNA and ECNA provided verbal feedback to staff of their interest in serving on a Parking and Traffic Management Task Force. In addition, staff is expecting a letter from 3 churches within the downtown CID area, but, to date, these letters have not been received.

The mission of the task force, as directed by City Council, is to evaluate examples of parking and traffic management best practices in other cities that are provided in the SGA report and presentation; evaluate the SGA consultant recommendations; evaluate the parking requirements and options for parking requirement waivers within the M-DT District of the DRAFT Unified Development Ordinance (UDO); whether an ongoing Parking and Traffic Management Commission should be established. The draft language includes a six-month time frame for the task force to complete its work.

Fiscal Impact

Short-Term Impact: None
Long-Term Impact: None

Appendix D

Vision & Strategic Plan Impact

Vision Impacts:
Primary Impact: Downtown, Secondary Impact: Transportation, Tertiary Impact: Development
Strategic Plan Impacts:
Primary Impact: Infrastructure, Secondary Impact: Economy, Tertiary Impact: Not Applicable
Comprehensive Plan Impacts:
Primary Impact: Land Use & Growth Management, Secondary Impact: Mobility, Connectivity, and Accessibility, Tertiary Impact: Livable & Sustainable Communities

Legislative History

Date	Action
11/16/2015	SGA Consultant Recommendations presented to Council in a report. Council requested feedback from the Downtown CID and the final 2011 Parking Task Force report before proceeding with the creation of a parking commission or task force.
1/04/2016	CID feedback and the final 2011 Parking Task Force report were provided to council in a report. Council requested that staff seek stakeholder feedback (as represented by attendees at the parking workshop) on the potential makeup of a Parking and Traffic Management Task Force, which, if formed, could also evaluate the possibility of sustaining a longer term Parking and Traffic Management Commission.
5/16/2016	In response to staff suggestion that the Parking and Traffic Management Task Force discussion be put on hold during the administrative delay period, City Council requested a resolution calling for the formation a Parking and Traffic Management Task Force to evaluate best parking and traffic management practices in other cities, the SGA recommendations, and the UDO regulations related to downtown parking as soon as possible.

Suggested Council Action

Appendix D

Should Council agree, staff recommends adoption of the resolution creating the Parking and Traffic Management Task Force.

Appendix D

Leah,

As president of the Benton-Stephens Neighborhood Association, I feel that impacted neighborhoods should have a representative. I feel it necessary to give each neighborhood a chance to voice their own concerns or preferences, as each neighborhood is impacted differently and each have different needs.

If you require a formal letter, please let me know and I'll be happy to draft one.

Peter Norgard

Peter Norgard
University of Missouri
349 Engineering Building West
Columbia, MO 65211
573.356.5203

Appendix D

I would like this commission to have liaisons or representatives from the Bike/Ped Commission, the Public Transit Advisory Commission, and the Disabilities Commission.

Thanks,
Rachel Ruhlen
Bike/Ped Commission
Public Transit Advisory Commission

Appendix D

We would like to have one member from the Columbia Disabilities Commission on the Parking and Management Task Force.

Chuck Graham, Columbia Disabilities Commission

Appendix D

Downtown Columbia Leadership Council
Meeting Minutes
March 22, 2016, 4:00 p.m.
City Hall, Conference Room 1A

Members Present:	Heiddi Davis, University of Missouri Brent Gardner, City Council Appointee Janet Hammen, Neighborhood Representative Sara Loe, Planning and Zoning Commission Nick Peckham, City Council Appointee *****Tim Teddy, Community Development Director Brian Treece, Historic Preservation Appointee Ben Wade, Community Improvement District Scott Wilson, Downtown resident
Staff Present:	Megan Allen, Management Fellow Tony St. Romaine, Deputy City Manager
Members Absent:	*Stacey Button, REDI Pat Fowler, Neighborhood Representative Randy Gray, City Council Appointee Cliff Jarvis, Columbia College Karen Miller, Boone County Commission Richard Perkins, Stephens College

***** Indicates Ex-Officio status.

The meeting was called to order at 4:01.

Welcome/Introduce Guests: Ben Wade was introduced as a new representative from the Downtown Community Improvement District.

Approval of Minutes: Mr. Wilson made a motion to approve the January minutes; Mr. Perkins seconded. All in favor, motion carried.

<u>Ulytic - Billy Martin:</u>
Ulytic is a local tech company that develops affordable tools for measuring a variety of traffic activity in urban areas. The company is working to create data layers of physical activity in places. They are not focusing on parking right now, and have only been in business for a little less than a year. They run algorithms on existing traffic and IP camera networks to collect real-time data and a real time data layer regarding pedestrian, bicycle, and motor vehicles traffic and activity patterns, both indoor and outdoor settings. They created their own hardware so that they can collect data where cameras don't already exist and it guarantees that privacy won't be compromised. How this device works is that it can be affixed to the side a building or utility pole and it records video locally. It looks

at pixel and light changes and determines where objects are moving. It then deletes the image and only transmits data. They have four units collecting data in downtown Columbia right now. A DLC member asked if the product was GIS based and Mr. Martin replied yes. He noted that they are working with Matt Gerike, the City of Columbia GIS Manager and they have permission to put cameras up on street lights and utility poles. They haven't done that yet because they are not easily accessible. He added that there is a pilot project downtown right now that is tracking emissions and environmental data, which is the next phase they see this technology going.

A DLC member asked if the company was working with the City. Mr. Martin replied the company was working solely with the GIS Department right now, no one has funded the deployment of their devices, which they have funded themselves. They hope that once they have the data from the pilot, they will do some press releases and get more customers interested in the product.

He explained that the reason they developed this product is because cities are growing at a rate of 7 million people per year, and is expected to continue. This poses real problems for cities and thus the Smart Cities market emerged. Most of the elements pertaining to Smart Cities relies on traffic data. The problem is that the current state of collecting data is very archaic and gives you a very small sample size. In 2016 the state of the art method for taking pedestrian counts at an intersection or roadway is standing on the sidewalk and counting that number of objects that move through it. There is a bit of an arms race to produce a product that can do this sort of thing. He explained some of the differences in this product compared to competitors. He reviewed the pricing which is currently $150 per month per data point, or $100 per data point with a one year subscription. So if the City wants to look at the signals of 9th and Broadway. The City would need to purchase eight data points: four for each four lanes of traffic and four for each four lanes of pedestrian traffic. So that would be $800 a month to do that. The hardware is not ready for sale yet, they are looking at four to six more weeks. This is a $1,500 product and if they continue to sell data from it to local businesses or real-estate companies they share 5% of that revenue with the device owner. Projections show that it will take less than two years to pay off a device and after that it is just supplemental income. They are looking into a leasing option for the device as well.

Mr. Martin noted that transportation is one thing they are hoping to really help with here in Columbia. CATSO, Columbia's Transportation Planning Organization, pays for this data to be collected on a yearly basis and they are hoping to provide this data to them year-round. For municipal governments or CID's, this product can provide data for future projects. He added that they will be putting out a study from over the True/False weekend that can show the impact on local business and traffic flow. A DLC member asked if True/False requested the service or if it was done by the company itself. Mr. Martin explained that True/False is not a customer right now and once there is evidence that the product does what they say it does, they believe more customers will be interested.

A DLC member asked when the pilot ends. Mr. Martin replied that the pilot program ends on April 1, 2016 but the company is looking to extend that period, if possible. A DLC member asked what Ulytic is trying to accomplish either downtown or with DLC. Mr. Martin explained that the company is trying to find reasons to have either their own product up, or access to current traffic data. A DLC member asked if the product could be used for parking. Mr. Martin replied that parking could be a market for their product. The company is still working on software that will be able to work with still objects. Mr. Treece asked if the product is in position year-round. Mr. Martin replied that the longer the amount of time a device is collecting data and the larger the sample size, the more valuable it is going to be to the customer. Mr. Treece commented that this type of product could be useful with planning projects. He mentioned College and Providence Rd. improvements and how this product could have helped to see how a change in traffic patterns can affect neighborhoods before the projects actually began. Mr. Martin also suggested that using the product to study traffic before and after construction would lend to the planning of similar projects. Mr. Martin explained what data points are and how they work. A DLC member asked how the product can distinguish between objects; bicycles, pedestrians, vehicles. Mr. Martin explained that bicycles can be hard to distinguish because they can move at the same speed as vehicles and are in the same path way as vehicles, and is only 50% accurate, but it gets better over time as data is processed. Pedestrians and vehicles are more easily distinguishable by size and the pixels in the image.

Mr. Martin explained that the company is working out of the incubator hub in REDI. The company is made up of prior entrepreneurs with various skills and experience in the field. Mr. Treece asked Mr. Martin why he came to speak to the DLC. Mr. Martin asked for the DLC's insight for ways that the company might be used in Columbia. He expressed the benefits of the product for retail and downtown businesses. The product can track pedestrian traffic in front of stores, tracking the amount of pedestrians that enter into a business, analyzing which store fronts attract customers, etc. Mr. Treece commented that one of his tenets is that before something is changed, it needs to be measured. He asked if it would be possible to use the product to determine how many people attempt to park downtown and how far someone is willing to park before someone gives up and goes to the mall. Mr. Martin replied that it might be possible but not something that was part of the initial idea for the product. A DLC member asked how many are deployed right now. Mr. Martin replied there are two above Herald's donuts (9th and Locust and 9th and Cherry data) and two by KOPN at 10th and almost all the way over to Hitt. Those capture both vehicle and pedestrian data.

A DLC member commented that the DLC asked the GIS department to create a 3D model of downtown but that request was never acted on. Mr. Teddy explained that he thought the City provided a virtual simulation but he wasn't sure of the quality. A DLC member continued that he imagined most citizens are unaware of the information that you are able to identify that will help to see the before and after of particular projects, which is why the 3D model would be useful. Mr. Martin agreed, saying the devices are perfect for analyzing before and after and analyzing traffic data. Mr. St. Romaine asked Mr. Martin is he had previously talked with Richard Stone (City Traffic Engineer)

regarding the product. Mr. Martin replied that he briefly had a conversation and that he would get in touch with Mr. Stone again regarding the product.

Mr. Teddy asked if the product could predict parking turnover on block-by-block basis. Mr. Martin explained that once the new software is developed, that yes, it would be able to have real time information that can analyze parking turnover. Essentially, we would like to find more ways to continue piloting our product here in Columbia.

A DLC member asked if the software generates reports based on different types of traffic. Mr. Martin replied that currently, the software can distinguish semi-truck vs everything else but they would like to continue piloting to create software that can distinguish between other types of vehicles such as a taxi and a tracker, for example. A DLC member asked if these cameras are used for other types of things, such as public safety. Mr. Martin explained that one thing the company is looking into is how the product can be used for other types of analysis, one being public safety. It is possible to create a product that can identify drastic deviations in traffic flow in real time and maybe contact dispatch. The software would then take a snap shot to be used. It could be a potentially lifesaving application. A DLC member asked if someone were to dial 911 in the intersection, could a video be captured of who was coming and going. Mr. Martin said no, that is not possible right now but if that is something that would be useful, it is something they could look into.

Parking and Traffic Management Task Force Feedback:

Mr. Treece explained that City Council requested that the DLC select a participant to represent the group on the Task Force. Members self-identified interest in sitting on the Task Force. Jan Hammen offered to sit on the Task Force. Without objection, this group agreed to send a letter recommending that the DLC have a participant on the Task Force and that participant be Janet Hammen. Mr. Treece made mention of her previous experience in the Access Circulation Transportation Town Hall meeting and East Campus experience.

Neighborhood Town Hall Meeting - New Development Code:

Mr. Teddy explained that he talked with Ms. Fowler earlier that day and that there was an issue with the April 16th date. He wanted to be able to use all of the available space at City Hall but there was an event scheduled in Conference Room 1A/1B during this time (Youth Advisory Council event). Mr. Teddy proposed April 30th as a new date for the event. Ms. Fowler will follow-up if the proposed date is doable. From the April 30th event, the P&Z process will begin. Mr. Teddy explained that the Planning and Zoning code would be discussed beginning in May. Mr. Treece expressed the sense of urgency for the Town Hall Meeting was to make sure that the event happened before the Code went to P&Z. The plan is to discuss the code at consecutive meetings. It will take about a month or so to go through this process before going to Council for further action. The City is working on comprehensive report for City Council of things that have been accomplished, remaining issues, and discussion. Conceptually the report will be sectioned as follows: no changes to current code, changes to current code, and brand new additions to the code.

Mr. Treece asked if there were any concerns from the group regarding moving the date of the Town Hall Event. Ms. Hammen expressed her frustration over the Town Hall meeting. She explained that the DLC requested this event in January or February, at which time a request for space was made. There was consternation that having put the request in so early in advance, then not hearing anything from the City, and now being told that we cannot do it as requested. Some members of the DLC will be out of town on the proposed date and now will not be able to participate.

St. Romaine asked if there was any indication as to how many participants there might be. Ms. Hammen expressed that there is no way of knowing until the DLC begins to publicize the event how many people would be interested in attending. He wondered if other sites were a possible option, such as the ARC. It was noted that the DLC wanted to have this event downtown if people are going to learn about the government. They really are trying to get people to come downtown and see that this is where things all the City things are going on, especially if we are trying to attract more of the inner core of the City, although everyone would be affected. It was discussed that the Council Chambers were not conducive to discussion and the Historical Building Mezzanine was too small of a space for this event.

A DLC member expressed that the DLC has had questions about infrastructure and parking and they wondered if these issues would be discussed at the Town Hall Meeting. Ms. Hammen replied that on a secondary level they would be discussed, but it's more about the new Unified Code and how citizens participate in that process. A DLC member asked how this would address the infrastructure and parking questions. Mr. Teddy explained that in the development code, the subdivision chapter is where infrastructure is identified. If the primary audience is focused on the downtown area, the zoning code will not tell us how to plan for infrastructure. Ms. Hammen stated that it will apply due to the parking codes; it may affect C-2 zoning. The new code will also address the sufficiency of services and that is a major factor. So, infrastructure and parking could potentially be two large discussions during this event. Mr. Treece reminds that the new code will affect the whole city and Ms. Hammen agreed.

Mr. Treece asked how the DLC felt about becoming a sponsor for the event and asked Ms. Hammen if the City has helped to appropriate a modest amount of funds for the event. Ms. Hammen replied that Ms. Fowler previously requested a budget. Mr. Treece said that he will follow-up regarding this topic.

C-2 Zoning/Clarion Update: No update at this time.

Mayor's Infrastructure Task Force: No update at this time.

Other Topics:
Mr. St. Romaine reminded the DLC that Board and Commission budgets were due to the Clerk's Office on March 21, 2016 but Heather Cole requested an extension until Friday, March 25. He asked if the DLC would like to submit a budget. Mr. Treece requested that a budget of $1,000 for the purpose of holding a Town Hall Meeting event and other miscellaneous needs for over the next twelve months be submitted for the DLC budget.

Public Comment: None

Next meeting: April 26, 2016

Adjourn: Meeting adjourned at approximately 5:10 p.m.

Appendix D

Hi Leah,

I think it would be appropriate to include PedNet, the Bike/Ped Commission, and the Disabilities Commission on the task force.

Thank you,
Lawrence Simonson, Assistant Director, PedNet

Appendix D

Greetings,

I would like to be considered as a representative on the Parking and Traffic Management Taskforce.

There are many factors which make me a qualified applicant.

Personal student parking history: First is my direct involvement with parking as a student beginning in December 1970 when I came here to attend MU. At that time, there were no vacancies near campus and a friend and I leased a trailer several miles out in the country on a narrow patch of gravel known as Grindstone Road. Since it was too far to walk, we drove into town and hunted for parking in the East Campus Neighbor area! Some things just don't change!

Experience: I have over 45 years of experience with students and other renters in many areas of Columbia, but especially East Campus, Stephens College, Columbia College and the central downtown areas. I have been active in several neighborhood organizations including the North Central Columbia NA, Benton-Stephens NA, Ridgeway NA and the East Campus NA.

Memberships: I have also been active as a member of the Columbia Apartment Association for over 4 decades, am a past president and current board member. I am also a member of the Missouri Apartment Association and the National Apartment Associations and the Chamber of Commerce. I attended many classes and passed exams to become a Missouri Real Estate Broker and Realtor in 1973 and still hold those licenses.

Community involvement and Professionalism: I served on the Columbia Bicycle Commission for 10 years. I have attended many, many meetings concerning parking including the recent 2015 Community Parking Forum and Workshop, preceded by involvement in the Art's District Permit Parking Program and many other meetings and discussions. Parking is so important to me, mostly because of the needs of my residential renters that I joined the National Parking Association and currently manage about 600 parking spaces. My son and daughter assist me in providing this parking to over 600 people. We have worked hard to help find solutions to Columbia's parking issues that are fair to everyone. And we are not done. There is more to do.

Please consider me for this Taskforce. I think I can be of help. It would be my honor to serve. Please call if you have any questions.

Thank you.

Mark Stevenson
573-999-0671

Appendix D

COLUMBIA
APARTMENT
ASSOCIATION

March 24, 2016

Dear Council Members:

The Columbia Apartment Association (CAA) recommends Ken Kvam to serve as a representative on the Parking and Traffic Management Taskforce. Due to considerable rental housing in the target areas of downtown and adjacent neighborhoods that will be addressed by the Taskforce, the CAA believes representation on behalf of its membership is vital. Rental property owners have a considerable economic stake in the discussion and outcome of the decisions resulting from the work of the Taskforce.

A long-standing member of the CAA, Ken has participated since 2001 in ongoing discussions related to East Campus parking and traffic issues. He attended all East Campus parking meetings for interested parties moderated by City staff member Richard Stone, and he has attended City sponsored parking meetings for the downtown and Benton-Stephens neighborhood.

Ken followed the City's 2015 Community Parking Forum and Workshop discussions through the participation of several CAA members and is familiar with the Consultant/Staff Parking Workshop Recommendations resulting from that community workshop. Ken contributes unique hands-on knowledge of parking and traffic issues from his extensive work as parking maintenance specialist for several East Campus rental companies. In this capacity, he is in the East Campus neighborhood on a daily basis managing parking issues and is keenly aware of the parking routines, habits, and patterns of the public and traffic issues that affect the area.

A life-long resident of Columbia, Ken is a graduate of the University of Missouri, the owner of rental property, and a manager for a company specializing in East Campus rental housing. He is avidly interested in the topic of parking and traffic as a business owner of investment property and as a concerned and informed citizen of Columbia.

I urge the City Council to consider Ken for the Parking and Management Taskforce. The CAA considers this a matter of consequence for its members, and we desire to bring our ideas and perspectives to the table through representation by an individual who can make a contribution to the Taskforce discussion.

Sincerely,

Sheila Garten
President

Appendix D

Leah,

I'd be happy to serve on the Parking Taskforce. I'll be out of state for July and part of August, so I'll have another member of my committee attend during that time if necessary.

Best,

Amy Wasowicz

University of Missouri, Columbia- 2018
School of Journalism | Undeclared

College of Arts and Science | Political Science

MSA Senator| Interim Chair | Campus & Community Relations
Contact | (630) 336-7679

Appendix D

Leah,
I will volunteer to serve on the taskforce, if deemed appropriate.
Thank you,
Mike Sokoff
Director, MU Parking & Transportation Svcs.

Appendix D

The District · Downtown Community Improvement District
11 South 10th Street · Columbia, MO 65201 · (573) 442-6816
DiscoverTheDistrict.com

December 10, 2015

City of Columbia
Mayor and Council Members
701 East Broadway
Columbia, MO 65205

Dear Mayor and Council Members:

The Downtown Community Improvement District is in full support of the SMART Growth Parking Audit Workshop recommendation to create a parking commission. We agree that the commission should include diverse stakeholder representation, including downtown businesses, developers, property owners, residents, MU and other local colleges. In December of 2014 and July of 2015, we submitted recommendations for a proposed commission slate, which we ask you to consider. (Enclosed are these letters for reference)

Convenient and close parking to shops, restaurants and businesses is imperative to the economic success of downtown and offers ease of access for our customers.

We understand that parking issues are ongoing and increasingly complex. The CID would like to be part of the solution, and we appreciate the opportunity to provide feedback on this process.

Sincerely,

Katie Essing

Katie Essing
Executive Director
Downtown Community Improvement District

Appendix D

The District • Downtown Community Improvement District
11 South 10th Street • Columbia, MO 65201 • (573) 442-6816
DiscoverTheDistrict.com

December 11, 2014

Mayor and City Council Members,

On behalf of the CID Board of Directors, I would like to express our appreciation of your support in creating a Parking Advisory Regulatory Commission to continue the focus on parking for downtown Columbia. Convenient and close parking to shops, restaurants and businesses is imperative to the success of downtown and offers ease of access for our customers.

We understand that parking issues are ongoing and increasingly complex. The CID would like to be part of the solution, and requests that the commission include members of the CID, DLC and other downtown stakeholders.

We recognize that the CID supports a diverse group of businesses, property owners, developers and residents and that the DLC provides complimentary representation and includes nearby neighborhood associations. We recommend selecting a diverse group of 7 individuals with the following make-up:

- 4 Members of the CID
- 2 Members of the DLC
- 1 Member at Large

Feedback from the surrounding academic community is also important, and we propose that the commission members be assigned as liaisons with adjacent campuses to bring issues and suggestions forward.

In addition, we would request that John Glascock serve as the City Staff liaison. We also note that this commission may need to meet just quarterly and as needed for projects, rather than on a monthly basis.

The CID would also be happy to assist further in the creation of the commission. Thank you for your consideration of these suggestions.

Sincerely,

Katie Essing
Executive Director
Downtown Community Improvement District

Appendix D

The District · Downtown Community Improvement District
11 South 10th Street · Columbia, MO 65201 · (573) 442-6816
DiscoverTheDistrict.com

July 17, 2015

Mayor and City Council Members,

On behalf of the CID Board of Directors, I urge you to create a Parking Advisory Regulatory Commission to continue the focus on parking for downtown Columbia. Convenient and close parking to shops, restaurants and businesses is imperative to the economic success of downtown and offers ease of access for our customers.

We understand that parking issues are ongoing and increasingly complex. The CID would like to be part of the solution, and requests that the commission include members of the CID, DLC and other downtown stakeholders.

We advocate that this parking commission be created right away, so that members may participate in the upcoming SMART Growth Workshop in September.

We recognize that the CID supports a diverse group of businesses, property owners, developers and residents and that the DLC provides complimentary representation and includes nearby neighborhood associations. We recommend selecting a diverse group of 7 individuals with the following make-up:

- 4 Members of the CID
- 2 Members of the DLC
- 1 Member at Large

Feedback from the surrounding academic community is also important, and we propose that the commission members be assigned as liaisons with adjacent campuses to bring issues and suggestions forward.

In addition, we would request that John Glascock serve as the City Staff liaison. We also note that this commission may need to meet just quarterly and as needed for projects, rather than on a monthly basis.

The CID would also be happy to assist further in the creation of the commission. Thank you for your consideration of these suggestions.

Sincerely,

Katie Essing
Executive Director
Downtown Community Improvement District

CID Board

Blake Danuser
Binghams

Adam Dushoff
Addison's

Tony Grove
Grove Construction

Christina Kelley
Makes Scents

Tom Mendenhall
The Lofts at 308 Ninth

Michael McClung
Quinton's, Resident

Allan Moore
Moore & Shryock

John Ott
Paramount Building

Tom Schwarz
Landmark Bank

Deb Sheals
Historic Preservation Consulting

Ben Wade
Guitarfinder

Michael Wagner
Boone County National Bank

Marti Waigandt
808 Cherry

Skip Walther
Walther, Antel, Stamper & Fischer

Andrew Waters
Columbia Daily Tribune

Appendix D

Introduced by _____ Council Bill No. R 76-16

A RESOLUTION

establishing the Parking and Traffic Management Task Force.

WHEREAS, City staff and volunteers conducted a parking audit at the end of August, 2015 to evaluate current parking usage and availability in several neighborhoods in, and adjacent to, the downtown area; and

WHEREAS, a Smart Growth America (SGA) project consultant conducted a day-long stakeholder workshop for elected officials, City staff, downtown business owners and residents, University of Missouri staff and students, and civic association leadership and neighborhood representatives to discuss the audit results and strategic parking strategies; and

WHEREAS, based on the workshop discussions, the SGA project consultant made recommendations, including the creation of a parking task force or commission, to support further discussion and decisions by Columbians to facilitate improved parking management; and

WHEREAS, the City of Columbia is currently completing a comprehensive update of its land development codes, and current land use regulations for the downtown area may be replaced or supplemented by form-based controls that will have a direct impact on parking requirements related to downtown development.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. There is hereby established the Parking and Traffic Management Task Force. Its purposes include the following:

- A review and evaluation of best practices related to parking and traffic management in other cities, as provided through examples in the Smart Growth America (SGA) report and presentation.

- A study and evaluation of the SGA recommended actions to address parking policies and strategies, including the use of mode share and public transportation to reduce downtown parking demand, development of a transportation demand management program as a collaboration between the City and University, and preparation of a downtown access and circulation plan.

- Review and evaluation of parking requirements and options for parking requirement waivers within the M-DT District of the DRAFT Unified Development Ordinance Review.

- Recommending whether an ongoing Parking and Traffic Management Commission should be established.

SECTION 2. The Task Force shall be appointed and consist of fifteen (15) members comprised as follows:

- One (1) member shall be a representative of a church within the Downtown Community Improvement District boundaries to be appointed by the Council. Applicants for this position must submit their application along with a letter from the church certifying that the applicant has been designated by the organization as its representative.

- Two (2) members shall be representatives of the Downtown CID to be appointed by the CID.

- One (1) member shall be a representative of the Downtown Columbia Leadership Council (DLC) to be appointed by the DLC.

- One (1) member shall be a representative of the University of Missouri to be appointed by University of Missouri Administration.

- One (1) member shall be a University of Missouri student to be appointed by the Missouri Students Association.

- One (1) member shall be a representative of the Benton-Stephens Neighborhood Association (BSNA) to be appointed by the BSNA.

- One (1) member shall be a representative of the North Central Columbia Neighborhood Association (NCCNA) to be appointed by the NCCNA.

- One (1) member shall be a representative of the East Campus Neighborhood Association (ECNA) to be appointed by the ECNA.

- Two (2) members shall be representatives of the Columbia Apartment Association (CAA) to be appointed by the CAA.

- One (1) member shall be a representative of the PedNet Coalition to be appointed by PedNet.

- One (1) member shall be a representative of the Bicycle and Pedestrian Commission to be appointed by the Bicycle and Pedestrian Commission.

- One (1) member shall be a representative of the Disabilities Commission to be appointed by the Disabilities Commission.

- One (1) member shall be a representative of the Public Transit Advisory Commission (PTAC) to be appointed by the PTAC.

SECTION 3. In addition to the members of the Task Force, the City Council shall designate two (2) co-chair persons for the Task Force who shall be nonvoting.

SECTION 4. A quorum to hold a meeting shall consist of eight (8) members and at least one (1) co-chair. All meetings shall be open to involvement and participation by as many additional community members who desire to attend.

SECTION 5. The Task Force shall make a final report to the City Council of its findings and recommendations six (6) months following appointment. The Task Force shall be dissolved upon submitting its final report.

SECTION 6. The Task Force shall be provided reasonable staff support.

ADOPTED this _____ day of _____, 2016.

ATTEST:

_____ _____

City Clerk Mayor and Presiding Officer

APPROVED AS TO FORM:

_____

City Counselor

WALTHER ANTEL
STAMPER & FISCHER
Attorneys at Law

Trusted Counsel. Effective Advocates.

Skip Walther
Rusty Antel
Gary L. Stamper
Marsha Fischer

January 15, 2013

Mayor Bob McDavid
City of Columbia
701 E. Broadway
Columbia, MO 65201

Re: Parking Task Force

Dear Mayor McDavid:

Please accept this report as a final report of the Parking Task Force that you appointed in July, 2011.

Our Task Force previously submitted to you our report of December 1, 2011, in which we made the following recommendations:

1. A "pay-on-foot" system be utilized in the proposed Short Street Garage for metered spaces in that garage.
2. That the City Council approve a pilot project for electronic meters on Ninth Street south of Broadway. Specifically, we recommended that the Digital Payment Technologies multi-space system and the IPS Group single space system be tested for a minimum of 90 days, with the multi-space system to be installed on Ninth Street between Broadway and Cherry, and the single space system to be installed on Ninth Street between Cherry and Locust.

Both of the recommended systems were eventually installed. The Digital Payment Technologies multi-space system was problematic in that many users complained (1) about waiting in line to use the machines; (2) that the machines were not intuitive and were difficult to use; (3) that the machines did not function as intended; and (4) that it was inconvenient to locate and then walk to the machines to pay for parking. Additionally, parking utility staff found that the electronics in the machines were defective and it was necessary to spend a considerable amount of manpower to keep the machines functioning. Because of the myriad problems with the multi-space system, the Task Force unanimously agreed to prematurely discontinue the pilot project as to the multi-space machines.

In contract with the multi-space machine experience, the single space machines manufactured by the IPS Group worked almost flawlessly and without significant criticism from the public. These machines remain in place on Ninth Street south of Locust.

There was a considerable gap between meetings of the Task Force (from January to August) as the group awaited the results of the pilot project.

700 Cherry Street | P.O. Box 7686 | Columbia, Missouri 65205 | tel (573) 442-2454 | fax (573) 874-3332 | www.wasf-law.com

3. The task force recommended that the multi-space machines that are already in our parking garages be configured to accept payment by credit card.
4. The task force unanimously recommended that consideration be given to the installation of an electronic sign on the Short Street garage that would that would identify vacant spaces by floor.

Although not identified in the December 1, 2011 report, the Task Force did recommend to the City Council that: (1) Short Street remain open from Broadway to Walnut; (2) the Short Street Garage be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00; (3) that Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.

Of course, the Task Force met several times subsequent to December 1, 2011. The following constitutes a summary of those issues considered and actions taken subsequent to December 1, 2011.

The Task Force received a report from the parking utility staff that several dozen electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street. Staff estimated the expense at $55,000.00 and said that the expense could be paid from the FY 2013 budget for the utility. The Task Force unanimously recommended that electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.

Thereafter, the Task Force and the parking utility staff examined meter usage patterns in downtown Columbia. It was clear that certain specifically defined areas in downtown Columbia were being under-utilized from a meter usage standpoint. Generally, the areas coincided with those parts of downtown with ten hour meters. In order to make those meters more attractive, and in light of the increasing presence of downtown residents, the Task Force unanimously recommended that the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters. In order to effectuate this recommendation, it would be necessary to paint the heads of all ten hour meters in the same color as the hang tag permits so that motorists could easily determine which meters were available for use with the permits. The Task Force also unanimously recommended that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00. It was the impression of the Task Force that the hang tags must be offered for sale at an attractive price. Staff reported that the revenue being generated from ten hour meters is so low that even a low priced hang tag would generate more revenue than is currently being received.

The Task Force discussed the current parking environment in downtown Columbia. There were differing opinions whether or not a parking problem presently exists, but it was noted that several residential developments were likely to be built in downtown, and perhaps the C2 zoning classification might need to be amended to include a C2 residential zoning classification that would require at least some off street parking. The Task Force unanimously recommended that the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.

The Task Force noted that several businesses in downtown Columbia open at 10:00 a.m., and that there was significant activity after 6:00 p.m. While the Task Force did not recommend an increase in meter

enforcement hours, the Task Force unanimously recommended that beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

In summary, here are the suggestions voted upon and approved by the Parking Task Force:

1. That a "pay-on-foot" system be utilized in the proposed Short Street Garage for metered spaces in that garage.
2. Short Street remain open from Broadway to Walnut.
3. The Short Street Garage should be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00.
4. That Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.
5. That a pilot project be implemented for electronic meters on Ninth Street south of Broadway for a minimum of 90 days, with a multi-space system to be installed on Ninth Street between Broadway and Cherry, and a single space system to be installed on Ninth Street between Cherry and Locust.
6. That the multi-space machines that are already in our parking garages be configured to accept payment by credit card.
7. That consideration be given to the installation of an electronic sign on the Short Street garage that would that would identify vacant spaces by floor.
8. That electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.
9. That the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters, and that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00.
10. That the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.
11. That beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

All of the recommendations of the Task Force were unanimously approved. In addition to those recommendations, there were a number of issues that were discussed **but which were not the subject of a motion**. In summary, those ideas were:

a. To give consideration to additional metered spaces in the areas surrounding the Arts District (north of Walnut, east of Tenth Street).

b. In discontinuing the pilot project for the multi-space meter system, the Task Force implicitly determined that a multi-space system on the street was inferior to both the meters that lack current technology as well as the single space meters with current technology such as those installed in the pilot project.

c. In order to make the parking experience more convenient, the Task Force suggested to staff that meter heads be painted with different colors to signify the different periods of time a meter can be legally used.

d. It was generally agreed that most if not all street meters be ultimately replaced with high technology meters. Parking utility staff currently has sufficient inventory of parts for the older models, particularly since several dozen older models will be taken out of service once the new high tech meters are installed on Broadway and on Ninth Street. Over time, however, the older models will need replacement, and it was generally agreed that having one system of street meters was superior to having multiple systems. It was clear that budgetary considerations precluded wholesale replacement. On the other hand, revenue production for the high tech meters was noticeably greater than revenue generated from the older models, which led staff and the Task Force to conclude that the high tech meters will pay for themselves in a relatively short period of time.

e. One of the drawbacks (perhaps the only one) with the IPS Group meters is that they do not accept the city's EZ Park cards. These cards are very popular for those who use them; however, the amount of revenue generated from those cards is not significant. Nevertheless, the Task Force encouraged the parking utility staff to request information from potential vendors of single space high tech meters as to their compatibility with the city's EZ Park cards.

f. It was the general consensus of the Task Force that parking utility staff be encouraged to improve the cleanliness of the parking garages.

g. Assuming single space high tech meters can be installed in larger numbers, it was the general consensus of the Task Force that consideration be given to creating more zones with differing rates within zones. The reasoning was that zones with low usage might benefit from lower rates, which might increase usage and increase revenue.

h. The Task Force discussed, but did not reach a consensus, on the idea of allowing residential permits in certain downtown zones.

i. The Task Force discussed, but did not reach a consensus, on recommending to City Council that it allocate more resources to the parking utility so that enforcement efforts could increase and so that additional educational/marketing resources could be utilized.

j. There was general consensus that the parking utility engage in more vigorous marketing efforts regarding the EZ Park cards and that those cards be offered to merchants at a discount so that they could be more easily distributed to the public.

k. The Task Force generally agreed that all meters should display easily read and understood information regarding meter rates, hours of usage and days of operation.

The Parking Task Force met approximately 17 times and attempted to address the tasks suggested by the mayor. The first task was to determine why the city charges for parking. Without parking meter revenue, the city would have no parking garages since the bonds issued to pay for the cost of constructing garages are repaid solely from marking meter revenue. It is clearly true that downtown merchants would be negatively affected by the absence of meters since there would be no incentive for motorists to limit their parking time to a set number of hours. Consequently, the inventory of available parking spaces would be significantly reduced, and merchants would lose those customers who could not find convenient parking spaces.

The second task was to determine the extent to which technology could be incorporated into the parking utility. High tech single space meters were overwhelmingly popular. They produce more income than conventional meters, in part because they accept credit cards and in part because they were simple to use. The Task Force believed that the benefits of high tech single space meters outweighed the disadvantage of not being able to use the city's EZ Park cards, although the Task Force suggested that vendors be encouraged to make their systems compatible with the EZ Park cards.

Additional technology was discussed, such as installing individual electronic pucks in each metered space. This system would allow meters to zero out the remaining time if a vehicle left the space and thereby increase revenue. This system would also be connected to an electronic application that would inform motorists of exactly where a vacant space existed. This system would maximize customer convenience. The Task Force did not recommend this system based solely on the cost of installing and maintaining it. It was not believed that there would be sufficient revenue in the near future to pay for this expensive option.

The third task was to determine the best use of our parking utility assets. The Task Force agreed with staff's current rate system for the various assets to the extent that the rate system encourages motorists to use vacant inventory in the garages. In the early months during which the Task Force was meeting, the city had adopted a lower rate structure for the Fifth and Walnut garage, which successfully increased use in that garage. It was evident that permit pricing has an effect on parking demand.

The ultimate goal of parking meter strategy is to encourage a supply of vacant spaces while also designing an efficient system where meters are largely utilized. Providing motorists with lower rate choices or with more convenience afforded by meter permits may encourage more use in low use areas.

Additionally, high tech meters provide motorists with additional convenience because of the different payment options, and this added convenience should result in lower numbers of meter violations.

The Task Force has not voted to disband, but it became increasingly difficult to gather a quorum to conduct business. This report has been distributed to the Task Force by email and the members have approved this report for submission.

I believe that the tasks requested of us by you have been accomplished, and that the members of the Task Force worked very diligently and with much cooperation and thoughtfulness during this lengthy process. With your permission, I submit this report as the final report of the Parking Task Force.

Sincerely,

Skip Walther
Chair, Parking Task Force

Appendix E

Re: Parking Task Force

Dear Mayor McDavid:

Please accept this report as a final report of the Parking Task Force that you appointed in July, 2011.

Our Task Force previously submitted to you our report of December 1, 2011, in which we made the following recommendations:

1. A “pay-on-foot” system be utilized in the proposed Short Street Garage for metered spaces in that garage.

2. That the City Council approve a pilot project for electronic meters on Ninth Street south of Broadway. Specifically, we recommended that the Digital Payment Technologies multi-space system and the IPS Group single space system be tested for a minimum of 90 days, with the multi-space system to be installed on Ninth Street between Broadway and Cherry, and the single space system to be installed on Ninth Street between Cherry and Locust.

Both of the recommended systems were eventually installed. The Digital Payment Technologies multi-space system was problematic in that many users complained (1) about waiting in line to use the machines; (2) that the machines were not intuitive and were difficult to use; (3) that the machines did not function as intended; and (4) that it was inconvenient to locate and then walk to the machines to pay for parking. Additionally, parking utility staff found that the electronics in the machines were defective and it was necessary to spend a considerable amount of manpower to keep the machines functioning. Because of the myriad problems with the multi-space system, the Task Force unanimously agreed to prematurely discontinue the pilot project as to the multi-space machines.

In contract with the multi-space machine experience, the single space machines manufactured by the IPS Group worked almost flawlessly and without significant criticism from the public. These machines remain in place on Ninth Street south of Locust.

There was a considerable gap between meetings of the Task Force (from January to August) as the group awaited the results of the pilot project.

3. The task force recommended that the multi-space machines that are already in our parking garages be configured to accept payment by credit card.

4. The task force unanimously recommended that consideration be given to the installation of an electronic sign on the Short Street garage that would that would identify vacant spaces by floor.

Although not identified in the December 1, 2011 report, the Task Force did recommend to the City Council that: (1) Short Street remain open from Broadway to Walnut; (2) the Short Street Garage be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00; (3) that Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.

Appendix E

Of course, the Task Force met several times subsequent to December 1, 2011. The following constitutes a summary of those issues considered and actions taken subsequent to December 1, 2011.

The Task Force received a report from the parking utility staff that several dozen electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street. Staff estimated the expense at $55,000.00 and said that the expense could be paid from the FY 2013 budget for the utility. The Task Force unanimously recommended that electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.

Thereafter, the Task Force and the parking utility staff examined meter usage patterns in downtown Columbia. It was clear that certain specifically defined areas in downtown Columbia were being under-utilized from a meter usage standpoint. Generally, the areas coincided with those parts of downtown with ten hour meters. In order to make those meters more attractive, and in light of the increasing presence of downtown residents, the Task Force unanimously recommended that the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters. In order to effectuate this recommendation, it would be necessary to paint the heads of all ten hour meters in the same color as the hang tag permits so that motorists could easily determine which meters were available for use with the permits. The Task Force also unanimously recommended that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00. It was the impression of the Task Force that the hang tags must be offered for sale at an attractive price. Staff reported that the revenue being generated from ten hour meters is so low that even a low priced hang tag would generate more revenue than is currently being received.

The Task Force discussed the current parking environment in downtown Columbia. There were differing opinions whether or not a parking problem presently exists, but it was noted that several residential developments were likely to be built in downtown, and perhaps the C2 zoning classification might need to be amended to include a C2 residential zoning classification that would require at least some off street parking. The Task Force unanimously recommended that the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.

The Task Force noted that several businesses in downtown Columbia open at 10:00 a.m., and that there was significant activity after 6:00 p.m. While the Task Force did not recommend an increase in meter enforcement hours, the Task Force unanimously recommended that beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

In summary, here are the suggestions voted upon and approved by the Parking Task Force:

1. That a “pay-on-foot” system be utilized in the proposed Short Street Garage for metered spaces in that garage.

Staff installed 3 pay-on-foot machines as well as a pay-in-vehicle option at the exit gate that was installed in the Short Street Garage late 2013. Customers and staff experienced numerous problems

with the pay machines and gate arms primarily due to flaws in the manufacturer's design. The gate arms and pay machines were disabled and temporary parking meters were set in place until a new gate arms system could be installed. Staff anticipates a new system to be installed by spring of 2017.

2. Short Street remains open from Broadway to Walnut.

Short Street is open from Broadway to Walnut.

3. The Short Street Garage should be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00.

The Short Street Garage was constructed with 418 spaces over 7 levels.

4. That Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.

5. That a pilot project be implemented for electronic meters on Ninth Street south of Broadway for a minimum of 90 days, with a multi-space system to be installed on Ninth Street between Broadway and Cherry, and a single space system to be installed on Ninth Street between Cherry and Locust.

See Skip's comments above on the results of the pilot. Staff has since installed credit-card capable single-space parking meters in the 900 block of Broadway, 900 East from Broadway to University, Hitt Street from University to Rollins, and parts of University between Hitt and college.

6. That the multi-space machines that are already in our parking garages be configured to accept payment by credit card.

All multi-space machines have been configured to accept payment by credit card.

7. That consideration be given to the installation of an electronic sign on the Short Street garage that would identify vacant spaces by floor.

See comments listed under suggestion 1. Once a new gate arm system is installed, it will be connected to the two electronic vacancy signs that hang above the entrances to the Short Street Garage.

8. That electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.

See comments under suggestion 5.

9. That the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters, and that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00.

With the use of Parkmobile and input from the CID, Staff implemented The Downtown Employee Permit Program in August 2015. Initially, 200 permits were allowed for the program and we had

anticipated those selling out quickly. As it turns out, we are averaging about 70 permits per month. The meters where the Employee Permit Program can be used are primarily north of Broadway. Upon inspection, it appears that additional meters south of Broadway could be beneficial. Staff is working with the CID to evaluate and determine the best place to expand this program. The CID is also actively promoting the program and looking for ways to incentivize the use.

10. That the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.

11. That beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

The change in meter enforcement hours from 8:00 a.m. through 6:00 p.m. to 9:00 a.m. through 7:00 p.m. went into effect January 2015.

All of the recommendations of the Task Force were unanimously approved. In addition to those recommendations, there were a number of issues that were discussed but which were not the subject of a motion. In summary, those ideas were:

a. To give consideration to additional metered spaces in the areas surrounding the Arts District (north of Walnut, east of Tenth Street).

Parking meters were installed on Park Avenue from College to 10th Street in late 2014.

b. In discontinuing the pilot project for the multi-space meter system, the Task Force implicitly determined that a multi-space system on the street was inferior to both the meters that lack current technology as well as the single space meters with current technology such as those installed in the pilot project.

c. In order to make the parking experience more convenient, the Task Force suggested to staff that meter heads be painted with different colors to signify the different periods of time a meter can be legally used.

Meter heads were painted with different colors to signify the maximum time allotted at the meters in early 2014.

d. It was generally agreed that most if not all street meters be ultimately replaced with high technology meters. Parking utility staff currently has sufficient inventory of parts for the older models, particularly since several dozen older models will be taken out of service once the new high tech meters are installed on Broadway and on Ninth Street. Over time, however, the older models will need replacement, and it was generally agreed that having one system of street meters was superior to having multiple systems. It was clear that budgetary considerations precluded wholesale replacement. On the other hand, revenue production for the high tech meters was noticeably greater than revenue generated from the older models, which led staff and the Task Force to conclude that the high tech meters will pay for themselves in a relatively short period of time.

Staff has determined that, due to the high cost of monthly maintenance fees and service charges, it doesn't make sense financially to put credit-card capable single-space parking meters everywhere, especially in low-occupancy areas such as where the 10-hour meters currently reside. Single-space coin-only parking meters will need to be kept in these areas until it makes sense, financially, to switch out to credit-card capable coin-only meters.

Regarding single-space coin-only meters, the majority of the City's meters are 15+ years old. Staff feels the need to replace the equipment due to obsolescent parts with some parts no longer being available and to provide better customer service. New meter equipment will allow for better tracking of occupancy rates so that we can make more informed decisions regarding locations for longer or shorter allowed parking times as well as to provide a better way to manage where the CID's permit parking program permits could potentially be used. We will also upgrade our collection system and equipment. Ultimately approximately 1,750 meters will be replaced over a one to three year span depending on available funds. The plan is to replace the meters in a phased in approach pending modifications to the Smart card system. Some current meter locations could be converted to Parkmobile permit only spaces as that approach has been successful in targeted areas.

e. One of the drawbacks (perhaps the only one) with the IPS Group meters is that they do not accept the city's EZ Park cards. These cards are very popular for those who use them; however, the amount of revenue generated from those cards is not significant. Nevertheless, the Task Force encouraged the parking utility staff to request information from potential vendors of single space high tech meters as to their compatibility with the city's EZ Park cards.

See comments under recommendation D above. New parking meter equipment is currently being sought. We are looking for a vendor who will be able to provide us the exclusive rights to the EZ Park Card, meaning we'll own the mapping of the card itself, which we can then require whatever other vendors we choose for parking control, such as gate arms for example, to be able to accept payment from. This will eventually allow for the EZ Park Card to be utilized at all parking control machines.

f. It was the general consensus of the Task Force that parking utility staff be encouraged to improve the cleanliness of the parking garages.

The Parking Utility has hired an additional full- time custodian, added more waste reciprocals, improved lighting and cameras to cut down on illegal urination and defecation, simplified the concerned customer call-in process, and acquired numerous additional equipment such as pressure washers, a sweeper/scrubber, and an ATV, all in an effort to better maintain the cleanliness of the garages.

g. Assuming single space high tech meters can be installed in larger numbers, it was the general consensus of the Task Force that consideration be given to creating more zones with differing rates within zones. The reasoning was that zones with low usage might benefit from lower rates, which might increase usage and increase revenue.

Creating different set rates, or a fluctuating rate dependent on expected occupancy, are things Staff are currently considering.

h. The Task Force discussed, but did not reach a consensus, on the idea of allowing residential permits in certain downtown zones.

i. The Task Force discussed, but did not reach a consensus, on recommending to City Council that it allocate more resources to the parking utility so that enforcement efforts could increase and so that additional educational/marketing resources could be utilized.

j. There was general consensus that the parking utility engage in more vigorous marketing efforts regarding the EZ Park cards and that those cards be offered to merchants at a discount so that they could be more easily distributed to the public.

k. The Task Force generally agreed that all meters should display easily read and understood information regarding meter rates, hours of usage and days of operation.

Staff has taken great measures to improve the visibility of information on our meters regarding meter rates, hours of usage, and days of operation. Parking staff have analyzed other cities such as Des Moines and Topeka, and have determined that the amount of information provided to our customers parking at the meters is substantially higher than those Cities we analyzed.

The Parking Task Force met approximately 17 times and attempted to address the tasks suggested by the mayor. The first task was to determine why the city charges for parking. Without parking meter revenue, the city would have no parking garages since the bonds issued to pay for the cost of constructing garages are repaid solely from marking meter revenue. It is clearly true that downtown merchants would be negatively affected by the absence of meters since there would be no incentive for motorists to limit their parking time to a set number of hours. Consequently, the inventory of available parking spaces would be significantly reduced, and merchants would lose those customers who could not find convenient parking spaces. Mayor Bob McDavid January 15, 2013 Page 5

The second task was to determine the extent to which technology could be incorporated into the parking utility. High tech single space meters were overwhelmingly popular. They produce more income than conventional meters, in part because they accept credit cards and in part because they were simple to use. The Task Force believed that the benefits of high tech single space meters outweighed the disadvantage of not being able to use the city's EZ Park cards, although the Task Force suggested that vendors be encouraged to make their systems compatible with the EZ Park cards.

Additional technology was discussed, such as installing individual electronic pucks in each metered space. This system would allow meters to zero out the remaining time if a vehicle left the space and thereby increase revenue. This system would also be connected to an electronic application that would inform motorists of exactly where a vacant space existed. This system would maximize customer convenience. The Task Force did not recommend this system based solely on the cost of installing and

maintaining it. It was not believed that there would be sufficient revenue in the near future to pay for this expensive option.

The third task was to determine the best use of our parking utility assets. The Task Force agreed with staff's current rate system for the various assets to the extent that the rate system encourages motorists to use vacant inventory in the garages. In the early months during which the Task Force was meeting, the city had adopted a lower rate structure for the Fifth and Walnut garage, which successfully increased use in that garage. It was evident that permit pricing has an effect on parking demand.

The ultimate goal of parking meter strategy is to encourage a supply of vacant spaces while also designing an efficient system where meters are largely utilized. Providing motorists with lower rate choices or with more convenience afforded by meter permits may encourage more use in low use areas.

Additionally, high tech meters provide motorists with additional convenience because of the different payment options, and this added convenience should result in lower numbers of meter violations.

The Task Force has not voted to disband, but it became increasingly difficult to gather a quorum to conduct business. This report has been distributed to the Task Force by email and the members have approved this report for submission.

I believe that the tasks requested of us by you have been accomplished, and that the members of the Task Force worked very diligently and with much cooperation and thoughtfulness during this lengthy process. With your permission, I submit this report as the final report of the Parking Task Force.

Sincerely,

Skip Walther

Chair, Parking Task Force

WALTHER ANTEL
STAMPER & FISCHER
Attorneys at Law

Trusted Counsel. Effective Advocates.

Skip Walther
Rusty Antel
Gary L. Stamper
Marsha Fischer

January 15, 2013

Mayor Bob McDavid
City of Columbia
701 E. Broadway
Columbia, MO 65201

Re: Parking Task Force

Dear Mayor McDavid:

Please accept this report as a final report of the Parking Task Force that you appointed in July, 2011.

Our Task Force previously submitted to you our report of December 1, 2011, in which we made the following recommendations:

1. A "pay-on-foot" system be utilized in the proposed Short Street Garage for metered spaces in that garage.
2. That the City Council approve a pilot project for electronic meters on Ninth Street south of Broadway. Specifically, we recommended that the Digital Payment Technologies multi-space system and the IPS Group single space system be tested for a minimum of 90 days, with the multi-space system to be installed on Ninth Street between Broadway and Cherry, and the single space system to be installed on Ninth Street between Cherry and Locust.

Both of the recommended systems were eventually installed. The Digital Payment Technologies multi-space system was problematic in that many users complained (1) about waiting in line to use the machines; (2) that the machines were not intuitive and were difficult to use; (3) that the machines did not function as intended; and (4) that it was inconvenient to locate and then walk to the machines to pay for parking. Additionally, parking utility staff found that the electronics in the machines were defective and it was necessary to spend a considerable amount of manpower to keep the machines functioning. Because of the myriad problems with the multi-space system, the Task Force unanimously agreed to prematurely discontinue the pilot project as to the multi-space machines.

In contract with the multi-space machine experience, the single space machines manufactured by the IPS Group worked almost flawlessly and without significant criticism from the public. These machines remain in place on Ninth Street south of Locust.

There was a considerable gap between meetings of the Task Force (from January to August) as the group awaited the results of the pilot project.

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3. The task force recommended that the multi-space machines that are already in our parking garages be configured to accept payment by credit card.
4. The task force unanimously recommended that consideration be given to the installation of an electronic sign on the Short Street garage that would that would identify vacant spaces by floor.

Although not identified in the December 1, 2011 report, the Task Force did recommend to the City Council that: (1) Short Street remain open from Broadway to Walnut; (2) the Short Street Garage be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00; (3) that Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.

Of course, the Task Force met several times subsequent to December 1, 2011. The following constitutes a summary of those issues considered and actions taken subsequent to December 1, 2011.

The Task Force received a report from the parking utility staff that several dozen electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street. Staff estimated the expense at $55,000.00 and said that the expense could be paid from the FY 2013 budget for the utility. The Task Force unanimously recommended that electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.

Thereafter, the Task Force and the parking utility staff examined meter usage patterns in downtown Columbia. It was clear that certain specifically defined areas in downtown Columbia were being under-utilized from a meter usage standpoint. Generally, the areas coincided with those parts of downtown with ten hour meters. In order to make those meters more attractive, and in light of the increasing presence of downtown residents, the Task Force unanimously recommended that the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters. In order to effectuate this recommendation, it would be necessary to paint the heads of all ten hour meters in the same color as the hang tag permits so that motorists could easily determine which meters were available for use with the permits. The Task Force also unanimously recommended that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00. It was the impression of the Task Force that the hang tags must be offered for sale at an attractive price. Staff reported that the revenue being generated from ten hour meters is so low that even a low priced hang tag would generate more revenue than is currently being received.

The Task Force discussed the current parking environment in downtown Columbia. There were differing opinions whether or not a parking problem presently exists, but it was noted that several residential developments were likely to be built in downtown, and perhaps the C2 zoning classification might need to be amended to include a C2 residential zoning classification that would require at least some off street parking. The Task Force unanimously recommended that the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.

The Task Force noted that several businesses in downtown Columbia open at 10:00 a.m., and that there was significant activity after 6:00 p.m. While the Task Force did not recommend an increase in meter

enforcement hours, the Task Force unanimously recommended that beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

In summary, here are the suggestions voted upon and approved by the Parking Task Force:

1. That a "pay-on-foot" system be utilized in the proposed Short Street Garage for metered spaces in that garage.
2. Short Street remain open from Broadway to Walnut.
3. The Short Street Garage should be built with as many parking spaces as are possible given the estimated construction cost of $7,000,000.00.
4. That Option E that was proposed to the City Council be adopted for the Short Street Garage configuration.
5. That a pilot project be implemented for electronic meters on Ninth Street south of Broadway for a minimum of 90 days, with a multi-space system to be installed on Ninth Street between Broadway and Cherry, and a single space system to be installed on Ninth Street between Cherry and Locust.
6. That the multi-space machines that are already in our parking garages be configured to accept payment by credit card.
7. That consideration be given to the installation of an electronic sign on the Short Street garage that would that would identify vacant spaces by floor.
8. That electronic single space meters be purchased for installation on Ninth Street from Broadway to University Avenue and on Broadway from Ninth Street to Tenth Street.
9. That the City Council authorize the issuance of hang tag permits that can be used for all ten hour meters, and that each hang tag be specifically marketed to business owners and their employees at the monthly rate of $35.00.
10. That the City Council review the C2 zoning ordinance to determine whether a parking requirement should be imposed for residential developments in downtown Columbia.
11. That beginning meter enforcement be shifted from 8:00 a.m. to 9:00 a.m. and that meter enforcement end at 7:00 p.m. instead of 6:00 p.m.

All of the recommendations of the Task Force were unanimously approved. In addition to those recommendations, there were a number of issues that were discussed **but which were not the subject of a motion**. In summary, those ideas were:

a. To give consideration to additional metered spaces in the areas surrounding the Arts District (north of Walnut, east of Tenth Street).

b. In discontinuing the pilot project for the multi-space meter system, the Task Force implicitly determined that a multi-space system on the street was inferior to both the meters that lack current technology as well as the single space meters with current technology such as those installed in the pilot project.

c. In order to make the parking experience more convenient, the Task Force suggested to staff that meter heads be painted with different colors to signify the different periods of time a meter can be legally used.

d. It was generally agreed that most if not all street meters be ultimately replaced with high technology meters. Parking utility staff currently has sufficient inventory of parts for the older models, particularly since several dozen older models will be taken out of service once the new high tech meters are installed on Broadway and on Ninth Street. Over time, however, the older models will need replacement, and it was generally agreed that having one system of street meters was superior to having multiple systems. It was clear that budgetary considerations precluded wholesale replacement. On the other hand, revenue production for the high tech meters was noticeably greater than revenue generated from the older models, which led staff and the Task Force to conclude that the high tech meters will pay for themselves in a relatively short period of time.

e. One of the drawbacks (perhaps the only one) with the IPS Group meters is that they do not accept the city's EZ Park cards. These cards are very popular for those who use them; however, the amount of revenue generated from those cards is not significant. Nevertheless, the Task Force encouraged the parking utility staff to request information from potential vendors of single space high tech meters as to their compatibility with the city's EZ Park cards.

f. It was the general consensus of the Task Force that parking utility staff be encouraged to improve the cleanliness of the parking garages.

g. Assuming single space high tech meters can be installed in larger numbers, it was the general consensus of the Task Force that consideration be given to creating more zones with differing rates within zones. The reasoning was that zones with low usage might benefit from lower rates, which might increase usage and increase revenue.

h. The Task Force discussed, but did not reach a consensus, on the idea of allowing residential permits in certain downtown zones.

i. The Task Force discussed, but did not reach a consensus, on recommending to City Council that it allocate more resources to the parking utility so that enforcement efforts could increase and so that additional educational/marketing resources could be utilized.

j. There was general consensus that the parking utility engage in more vigorous marketing efforts regarding the EZ Park cards and that those cards be offered to merchants at a discount so that they could be more easily distributed to the public.

k. The Task Force generally agreed that all meters should display easily read and understood information regarding meter rates, hours of usage and days of operation.

The Parking Task Force met approximately 17 times and attempted to address the tasks suggested by the mayor. The first task was to determine why the city charges for parking. Without parking meter revenue, the city would have no parking garages since the bonds issued to pay for the cost of constructing garages are repaid solely from marking meter revenue. It is clearly true that downtown merchants would be negatively affected by the absence of meters since there would be no incentive for motorists to limit their parking time to a set number of hours. Consequently, the inventory of available parking spaces would be significantly reduced, and merchants would lose those customers who could not find convenient parking spaces.

The second task was to determine the extent to which technology could be incorporated into the parking utility. High tech single space meters were overwhelmingly popular. They produce more income than conventional meters, in part because they accept credit cards and in part because they were simple to use. The Task Force believed that the benefits of high tech single space meters outweighed the disadvantage of not being able to use the city's EZ Park cards, although the Task Force suggested that vendors be encouraged to make their systems compatible with the EZ Park cards.

Additional technology was discussed, such as installing individual electronic pucks in each metered space. This system would allow meters to zero out the remaining time if a vehicle left the space and thereby increase revenue. This system would also be connected to an electronic application that would inform motorists of exactly where a vacant space existed. This system would maximize customer convenience. The Task Force did not recommend this system based solely on the cost of installing and maintaining it. It was not believed that there would be sufficient revenue in the near future to pay for this expensive option.

The third task was to determine the best use of our parking utility assets. The Task Force agreed with staff's current rate system for the various assets to the extent that the rate system encourages motorists to use vacant inventory in the garages. In the early months during which the Task Force was meeting, the city had adopted a lower rate structure for the Fifth and Walnut garage, which successfully increased use in that garage. It was evident that permit pricing has an effect on parking demand.

The ultimate goal of parking meter strategy is to encourage a supply of vacant spaces while also designing an efficient system where meters are largely utilized. Providing motorists with lower rate choices or with more convenience afforded by meter permits may encourage more use in low use areas.

Additionally, high tech meters provide motorists with additional convenience because of the different payment options, and this added convenience should result in lower numbers of meter violations.

The Task Force has not voted to disband, but it became increasingly difficult to gather a quorum to conduct business. This report has been distributed to the Task Force by email and the members have approved this report for submission.

I believe that the tasks requested of us by you have been accomplished, and that the members of the Task Force worked very diligently and with much cooperation and thoughtfulness during this lengthy process. With your permission, I submit this report as the final report of the Parking Task Force.

Sincerely,

Skip Walther
Chair, Parking Task Force

Appendix F

022173

Permanent Record
Filed in Clerk's Office

Introduced by McDavid

First Reading 8-4-14 Second Reading 8-18-14

Ordinance No. 022173 Council Bill No. B 245-14 A

AN ORDINANCE

amending Chapter 29 of the City Code as it relates to street-side non-residential first floor space on portions of Broadway and Ninth Street, tall structures and residential parking in C-2 (central business) zoning districts; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. Chapter 29 of the Code of Ordinances of the City of Columbia, Missouri, is hereby amended as follows:

Material to be deleted in ~~strikeout~~; material to be added underlined.

Sec. 29-15. District C-2, central business district.

(a) Purpose. This district is intended to provide for commercial facilities in the central business district. The principal land uses are retail sales, services, offices, mixed-use including housing and public facilities.

(b) Permitted Uses. In district C-2, no building, land or premises shall be used and no building shall be hereafter erected, constructed, reconstructed or altered, except for one or more of the following uses (for exceptions, see section 29-28, Nonconforming Uses, and section 29-31, Board of Adjustment):

All permitted uses in district C-1 with the exception that dwelling units shall also be subject to section 29-8(d)(6)~~.~~ and no dwelling units shall be permitted within the street-side first floor space in buildings on the following blocks within district C-2:

Broadway, from Providence Road to Hitt Street; and

Ninth Street, from the south side of Walnut Street to Elm Street.

The street-side first floor space shall include an entrance door on either Broadway or Ninth Street and may include separate doorways, entry spaces, and stair or elevator shafts that provide access to dwelling units on an upper floor level or behind non-residential building space.

. . .

(c) Conditional Uses. The following uses shall be permitted in district C-2 only after the issuance of a conditional use permit pursuant to the provisions of section 29-23:

. . .

(10) All proposed construction, renovation, or alteration activities necessary to permit the facility to occupy an existing or new structure shall be in accordance with the requirements of chapter 6 and chapter 9 of this code. Activities begun before submission, review and approval of professionally sealed plans and the issuance of a building permit shall be a violation of the conditional use permit conditions and this code.

Uncovered, surface commercial parking for automobiles and light trucks abutting a public street, except for publicly-owned parking facilities. Parking areas located behind buildings, not directly adjacent to a public street (except an alley), are permitted.

Uncovered, surface off-street parking areas, except for publicly-owned parking facilities.

(d) Height and Area Regulations. In district C-2 any building, portion of a building or dwelling hereafter erected, constructed, reconstructed or altered shall be subject to the following regulations (for exceptions, see section 29-26, Height and Area Exceptions):

(1) Lot size. No minimum requirement.

(2) Yards. No minimum requirement.

(3) Building height. ~~No maximum height.~~ Buildings shall have a minimum of two (2) stories consisting of a minimum of twenty-four (24) feet. One hundred twenty (120) feet or ten (10) stories is the maximum building height permitted by right. Buildings that exceed one hundred twenty (120) feet or ten (10) stories shall be subject to review by the planning and zoning commission and approval by the city council according to the standards and procedures in section 29-15 (d)(7).

(4) Vision clearance. No requirement.

(5) Floor area. No minimum requirement.

(6) Parking. On-site parking is required for dwelling units in new buildings and buildings expanded after August 18, 2014. There shall be no parking requirement for new dwelling units created in buildings or enclosed portions

of buildings that are at least fifty (50) years old. There shall be no parking requirement for buildings or portions of buildings that exist as of August 18, 2014 that are removed and rebuilt, in whole or in part, to restore but not expand the previously existing building, and there shall be no parking requirement for buildings that have been issued a building permit prior to August 18, 2014. (See section 29-30, Off-Street Parking and Loading.)

(7) Tall structure approval. All buildings that exceed one hundred twenty (120) feet or ten stories in height shall require council approval. Requests for tall structure approval in district C-2 shall require a petition on a form provided by the director and shall be referred to the planning and zoning commission for a recommendation and city council consideration of an ordinance approving the tall structure in the same manner and following the same procedural steps as described in section 29-33 of this code.

Petitioners shall provide the planning and zoning commission with preliminary building plans (elevations and representative floor plans), site plan including adjacent streets and alleys, and a shade study. A "shade study" represents, in graphic form, the shade cast by the tall structure on adjacent properties and streets, by time of day and by season. An example of adverse impacts revealed by a shade study would be complete shading of rooftop solar panels mounted on an adjacent, lower building.

A tall building may be approved by the city council if it satisfies the following criteria:

(i) The height is consistent with adopted city plan recommendations for maximum building height in the specific location;

(ii) The additional height will not impair emergency response to the subject building or other places in the immediate vicinity in the opinion of the fire code official and chief of police;

(iii) The additional height will not have an adverse impact on the availability of air and light to adjacent buildings and public streets; adequate spacing exists between the proposed building and openings in the walls of an adjacent building or between the proposed building and rooftop spaces used as amenities to allow the penetration of sunlight to those openings or rooftop spaces;

(v) The additional height will not create demand on any public utility or public infrastructure in excess of available capacity, as concluded by an engineering analysis of the projected utility loads and the existing and planned capacities of infrastructure to accommodate it; and

(vi) Public sidewalks, crosswalks, and streets adjacent to the site are of sufficient capacity to handle the anticipated pedestrian and vehicular traffic generated by the tall structure, as concluded by a traffic impact analysis.

. . .

Sec. 29-30. Off-street parking and loading regulations.

(a) *General Requirements.*

(1) Except for non-residential buildings in district C-2, existing buildings and portions of existing buildings fifty (50) years and older in district C-2 reused for residential purposes, and except as provided in subsection (a)(2), all uses established and all buildings erected, constructed, reconstructed, or expanded after November 19, 2001 shall be provided with off-street parking spaces, either in the form of parking garages or open parking areas for the parking of motor passenger vehicles, as specified herein.

. . .

(b) *Parking Requirements.* Off-street parking spaces shall be provided for all uses in accordance with the minimum requirement set forth in Table 29-30(b)(1).

Table 29-30(b)(1)

	Required Parking
Residential	
One- and Two-Family Dwelling Units	2 spaces/dwelling unit for one-family attached and unattached dwellings; 2 spaces/unit for two-family units having up to 2 bedrooms; three spaces/unit in two-family units of 3 or more bedrooms
One-family Attached Units	2 spaces/dwelling unit
Multi-Family Dwellings	1.0 spaces/dwelling unit for "efficiency" apartment (i.e., units without a separate bedroom); 1.5 spaces/dwelling unit for 1 bedroom units; 2 spaces/dwelling unit for 2 bedroom units; 2.5 spaces/dwelling for 3 or more bedroom units; In addition to required parking for residents, 1 space/5 dwelling units will be required for visitor parking
Dormitories	1 space/2 occupants the building is ultimately designed to accommodate
Fraternity/Sorority Houses	1 space/2 occupants

Elderly and Handicapped Housing	1 space/unit
Boardinghouse or Rooming House	1 space/2 occupants the building is ultimately designed to accommodate
Nursing (or Convalescent) Homes and Residential Care Facilities	1 space/4 beds plus 1 space/employee
Bed and Breakfast	1 space/guest room plus 2 parking spaces/dwelling unit
Motel, Hotel	1 space/room plus 1 space/20 rooms (to accommodate motel/hotel staff) plus 75% of the normal spaces required for accessory uses (e.g. banquet rooms, meeting rooms, restaurants, etc.) if applicable.
Mobile Home	2 space/dwelling unit
Temporary Shelters	1 space/employee plus 1 space/every 4 occupants the shelter is designed to accommodate
Residential Uses within C-2 (Central Business District)	0.25 space/bedroom for new residential dwelling units in new buildings. Minimum parking supply may be located: a. Onsite in a parking structure, b. At-grade or below grade surface parking under a building, c. Surface parking behind a building, d. Surface parking for which a conditional use permit has been approved; or e. In a public or private parking structure or lot within 2,640 feet (one-half mile) of the residential entry; provided there is a written agreement to purchase or lease spaces in a public or private parking structure or lot for as long as the building is used as a residential dwelling. The parking requirement for standard motor vehicle parking spaces may be reduced by any of the following: a. Each motorcycle and motor scooter parking space may be counted as one vehicular parking space, up to ten percent (10%) of the total spaces required; b. Each required bicycle parking space shall be counted as the equivalent of one motor vehicle parking space, as specified in section 29-30(m). The community development director may recommend, and the city council may approve, a reduction in the calculated parking requirement based on a parking management

	strategy that may include some combination of: a. Car share programs; b. Purchase of bus passes for the use of the Columbia transit system by tenants; c. Provision of private transit services to building residents; d. A parking study that documents a reduced demand for parking.
Public and Quasi-Public Uses	
. . .	

. . .

SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this 18th day of August, 2014.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

Appendix F

City of Columbia

701 East Broadway, Columbia, Missouri 65201

Agenda Item Number: B 245-14
Department Source: Community Development - Planning
To: City Council
From: City Manager & Staff
Council Meeting Date: August 4, 2014
Re: An Ordinance Amending Chapter 29, Sections 29-15 and 29-30 Regarding Use of First Floor Space, Residential Parking, and Tall Structures in the C-2 Central Business District (Case 14-48)

Documents Included With This Agenda Item

Council memo, Resolution/Ordinance
Supporting documentation includes: Summary of Board/Commission Reports, Maps, Excerpts from Minutes, Correspondence from Public

Executive Summary

Attached for Council consideration is an ordinance that makes three changes to the C-2 Central Business District. The first change establishes a requirement that permits only non-residential space on the street-side, first floor level of buildings on Broadway (Hitt Street to Providence) and Ninth Street (between Walnut and Elm). The second establishes a parking requirement for new residential construction throughout the C-2 District. The third change establishes a public review and approval process for tall structures in the C-2 District.

Discussion

On March 17, 2014 the City Council referred a draft zoning ordinance to address the topics of first floor space, residential parking, and tall buildings in the C-2 Central Business District to the Planning & Zoning Commission. The Council asked that these three issues be examined ahead of the schedule for the comprehensive development code update.

The ordinance makes three changes to the C-2 District. It limits the use of street-facing, first-floor space on Broadway and Ninth Streets to non-residential uses. The ordinance also establishes a parking requirement for new residential construction in new buildings or building additions. Finally, the ordinance subjects buildings taller than 10 stories or 120 feet in height to a public review process following the same procedural steps as a zoning amendment.

C-2 District Background

The City has had zoning since 1935. Originally the downtown area was zoned "District F: Central Business District" with a maximum height of eight stories or 100 feet. In the 1950s the City updated the zoning ordinance to rename "F" District C-2 and retain the maximum height standards with a special provision for maximum 45 feet and three story height applying to C-2 properties west of Third Street (Providence Road). In the early 1960s the maximum height standard disappeared. When the City adopted minimum off-street parking requirements in the 1950s, it exempted the C-2 District though C-2 zoning permitted parking lots by right in the C-2 District until the late 1990's when they were made a

conditional use. In the 1980s for a time all dwelling units in C-2 required a conditional use permit and were made subject to the minimum lot area/maximum residential density standards of the R-4 District. In the 1990s residential uses became permitted by right with the only limitation on density a minimum dwelling unit size.

The C-2 District as it exists today generally extends from just east of College Avenue to Garth Avenue on the west, and from north of Ash Street to Elm Street, with a number of zig-zags around the perimeter. There are also several individual properties not contiguous to the downtown C-2 District, including a parcel on Paris Road north of I-70.

The current C-2 District has a minimum of rules. There are no required yards or setbacks and there is no maximum or minimum height of buildings. There is no parking requirement for any permitted use. Surface parking lots are permitted but only as a conditional use. There is a large list of permitted uses that incorporates all permitted uses in subordinate districts R-1 through C-1 as well as uses introduced in the C-2. The permitted uses include R-3 District permitted uses subject to a minimum dwelling unit size of 400 square feet.

First-floor non-residential requirement

Traditionally buildings in the downtown have had commercial space on the first floor level and offices or dwelling units above. More recent development is frequently single-use: office buildings, restaurants, and recently apartment buildings. In compact downtowns it is not uncommon to see requirements that first floor space be commercial or at least "active" space to help enliven the downtown streets. Residential units on the ground floor create intervals of private space between shops, offices providing services, cafes, and places of assembly where the public is encouraged to enter or at least pass by. Some ordinances take a design approach, requiring a percentage of facades to have windows and doors.

The proposed amendment prohibits residential space on the street-side, first floor level of buildings on Broadway, between Hitt Street and Providence Road, and Ninth Street between Walnut Street and Elm Street. On the streets selected, the existing use of first floor space is non-residential: retail, office, government, institutional, and religious but no residential - no properties will be made non-conforming. Residential entries to upstairs dwelling units and rear first-floor dwelling units are permitted. The ordinance aims to preserve the public nature of the streets as well as the privacy of occupants in residential buildings.

Residential parking requirement

In C-2 the City has taken a "district" approach to parking by consolidating parking supply in public, on-street spaces, public parking garages, and public surface lots. The strategy has generally been successful by allowing property owners, builders, and investors to maximize the use of land for productive building space instead of expensive amenities like guest parking. In downtowns many visitors park once for multiple visits and this lowers parking demand per unit in comparison to less dense and diverse areas of the City.

Residential parking is unique because it requires that parking spaces be available around the clock. The City owns a large supply of parking but the majority of it is either reserved or metered hourly. If new

residential development generates a demand for parking without contributing to the supply, spillovers of parked cars into neighborhoods and unauthorized parking spaces may be the result.

The ratio of parking proposed for new residential development, 0.5 spaces per bedroom, is roughly half the requirement in multiple-family housing elsewhere in the City. The proposed ordinance requires parking for all new residential buildings and additions to buildings; it does not require parking for dwelling units created in existing historic buildings. The ordinance also does not affect buildings that exist today that may need to be rebuilt after a disaster, or buildings that have a permit before the effective date of the ordinance. The minimum parking can be provided on or up to one-half mile off-site provided that off-site parking is secured by an appropriate long term agreement. Ten percent of required parking may be motorbike or motorcycle parking and required bicycle parking is counted toward satisfaction of the parking requirement. There is a procedure for "parking management plans," incorporating transit, car sharing, and other measures to reduce parking required.

Tall structure approval

The existing C-2 provisions do not limit the height of buildings. The majority of buildings in Columbia are below high rise (i.e., approximately 70 feet) construction heights but as land values rise and site area for development and redevelopment becomes scarce in the downtown the City is likely to have more high rise structures. A number of cities have special requirements for tall structures, including step-backs above a specified floor level; open space set-asides; and street level design and use requirements; a few include building energy performance provisions. In the initial review of the C-2 District Council received a committee suggestion that the City consider a two-tier approach to building height with buildings above ten stories subject to performance or bonus provisions with specific recommendations to be prepared by the City's professional code consultants.

The proposed ordinance does not impose a maximum height but it does require review of plans by the Planning & Zoning Commission and the City Council for any structure that exceeds ten stories or 120 feet in height, whichever applies. The ordinance includes required items of information - preliminary building elevations, representative floor plans, site plan including adjacent streets, and a shade study - and it describes the procedural steps as the same as those for rezoning or planned development approval - notice and public hearing of the Planning & Zoning Commission, Council consideration of an ordinance. There are criteria for approval that relate to public safety, traffic, utility capacity, and impacts on adjacent property.

Planning & Zoning Commission review and recommendation

The Planning & Zoning Commission conducted public hearings on the proposed C-2 amendments on April 24, May 22, and July 24, 2014 with a work session discussion on June 19, 2014. Ultimately the Commission voted on July 24 to approve the proposed ordinance by a vote of six in favor, one opposed and two absent on both the street level non-residential and the residential parking provisions; the Commission voted four in favor, three opposed, two absent on the tall structure approval provisions. Commissioners also voted seven in favor, none opposed, two absent that there be a "sunset" to all three provisions two years from passage of the ordinance by Council or upon adoption of a new development code whichever is first to occur.

The Commission differed on the height issue. Some commissioners objected to the plan consistency criterion that refers to height limits recommended in City plans because the ten story tall structure definition was already above the eight story maximum heights on Broadway and five story maximum heights on Walnut recommended by the *Downtown Charrette Report*. Motions to amend the tall structure height to recognize these lower height recommendations, or strike the plan consistency criterion as written, failed to carry a majority. The issue of transitional building heights - maximum buildings heights at the edges and in other special areas of C-2 - will most certainly be considered in the general update of zoning regulations led by Clarion Associates.

Previous hearings and issues

The proposed ordinance has been revised twice in response to public and commissioner comments. Changes include the clarification that existing buildings and buildings with building permits will not be made non-conforming; the addition of flexible parking solutions and a procedure for reduction of required parking supply; clarification of the tall structure review criteria (general language changes and a historic preservation criterion was deleted by Commission suggestion because commissioners thought it singled out tall buildings). Staff made a change to street level non-residential use requirements to allow residential entries to upstairs and rear first story space on Broadway and Ninth.

Throughout the process critics of the proposed ordinance objected to the timing of the ordinance as an interim measure that would take effect before a complete revision to the development regulations. The City's consultant, Clarion Associates, follows what they believe to be a tried and true methodology of drafting districts and uses first, then development standards like height and parking, and finally administration and enforcement for the entire city and the entire ordinance. The consultant looked at the initial draft of the interim amendments and pronounced it to be a reasonable targeted approach to several issues of concern without disrupting the larger code amendment project.

Fiscal Impact

Short-Term Impact: None. Preparation and implementation of the ordinance using City forces does not require additional resources.
Long-Term Impact: None.

Vision, Strategic & Comprehensive Plan Impact

Vision Impact: Community Character, Development, Downtown
Strategic Plan Impact: Growth Management, Infrastructure
Comprehensive Plan Impact: Land Use & Growth Management, Infrastructure, Livable & Sustainable Communities

Suggested Council Action

The Planning and Zoning Commission (by votes of 6-1 on the street-level non-residential; 6-1 on the residential parking; and 4-3 on the tall structures provisions) recommends approval of the ordinance and recommends (7-0) that it include a "sunset" provision that makes the new provisions effective only for a

City of Columbia

701 East Broadway, Columbia, Missouri 65201

period of two years after passage or until a new development code is adopted by the Council, whichever shall be the first to occur.

Legislative History

July 24, 2014: Commission hearing and recommendation
May 22, 2014: Continued Commission hearing
April 24, 2014: Initial Commission hearing
March 17, 2014: Council referral of draft to Planning & Zoning Commission

Department Approved

City Manager Approved

29-4.4 Parking and Loading[660]

(a) Applicability[661]

(1) General Requirements

(i) The standards of this Section 29-4.4 shall apply to all development and redevelopment, unless specifically excepted or modified by another provision of this Code.

(ii) Required off-street parking areas in existence on November 19, 2001, shall not be reduced below, or if already less than, shall not be further reduced below, the requirements for such use as would be required for the use as a new use of a building, structure or premises under the provisions of this section.

(2) Exceptions[662]

(i) **M-DT District**[663]

(A) Development and redevelopment in the M-DT district is exempt from the minimum parking requirements in Table 4.4-1.

(B) Residential development and redevelopment in the M-DT district shall provide one-quarter of one (0.25) parking space per bedroom. This requirement can be satisfied on the site or within one-half (0.5) mile of the site.

(C) If on-site parking is provided, it shall meet all other requirements of this Section 4.4 and may not be located forward to the Parking Setback Line pursuant to the Building Form Standards in Section 29-4.2.

(D) On-street parking shall meet the on-street parking requirements in Section 29-4.2(f)(iv).

(ii) **Small Lots**[664]

(A) No off-street parking shall be required for any non-residential primary use on a lot in any Mixed Use District that is smaller than ten thousand (10,000) square feet where no portion of the front lot line is located within one hundred (100) feet of a Residential district.

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[660] Carries forward current Sec. 29-30(Off-street parking and loading regulations) as base text, with substantial revisions as noted.

[661] New subsection that carries forward the general applicability and exceptions in current Sec. (a)(General Requirements) separately. Existing Sec. (a)(7) providing penalties for parking on residential yards and Sec. (a)(8) allowing the director to issue temporary use permits for this parking have been relocated to Chapter 5 (Procedures and Enforcement). Temporary use parking areas have been covered in Chapter 3 (Permitted Uses).

[662] Rewrites Current Sec. 29-30(2)(Exceptions to off-street parking and loading requirements). Planned district exceptions are also clarified. The existing code requires off-street/on-site parking for all development, except in existing C-2. Because of the introduction of the new MU districts, to implement Columbia Imagined, more exceptions to the off-street parking requirement are included.

[663] New subsection that aligns with the interim C-2 ordinance parking requirement to address parking spillover into adjacent residential neighborhoods and references other parking requirements found in Sec. 29-4.2

[664] New subsection.

(B) No off-street parking shall be required for any building in any Mixed Use district that contains has a non-residential primary use, and contains less than ten thousand (10,000) square feet of gross floor area, provided no portion of the front lot line of the property containing that building is located within one hundred (100) feet of a Residential district.

(iii) **Planned Development**[665]

The off-street parking requirements of this section shall serve as the standard from which to request different parking requirements for a proposed use in a PD (Planned Development) district. Following approval of a PD district that is subject to an approved site plan with parking requirements that differ from those in this Section 29-4.4, the requirements of this Section shall not apply to property located in that district. If an approved planned zoning district site plan is silent on any aspect of parking addressed by this section, the provisions of this section shall apply to that aspect of parking.

(iv) **Historic Properties**[666]

(A) No new on-site parking shall be required for the redevelopment of Historic Structures.

(B) If an existing Historic Structure has on-site parking, this parking must be retained and conform with the City's current parking improvement standards (e.g., be paved), unless the Director determines that compliance is impracticable or would compromise the historic character of the property or area.

(3) Residential Districts[667]

The following standards apply in all residential districts:

(i) No ~~garage other than a private~~detached garage shall be located nearer than twenty (20) feet to the front lot line or behind the building front, whichever is greater.[668]

(ii) Parking spaces for residential and non-residential uses, other than single-family and two-family dwellings, shall not be located in the required front yard.[669]

(iii) Required parking spaces may be tandem spaces to serve one- and two-family dwellings only, as exhibited in the Figure 4.4-1.[670]

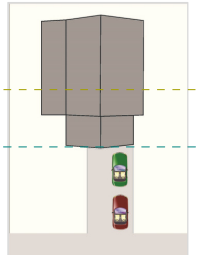

Figure 4.4-1: Tandem Parking

Comment [PRZ153]: Text removed for clarity

Comment [S154]: This belongs in Bulk Regs or Exceptions & Encroachments section. We think this intends to require garages to be placed behind the building front and no nearer than 20 ft from the front lot line, whichever is greater. Rewrite to make sense.

[665] Section simplified to delete "phase-in" provisions related to adoption of ordinance in 2001, to clarify that these standards are the starting point for requesting modified parking standards in a planned district, and to clarify that standards in an approved planned development apply where they conflict with standards in this section.
[666] New provision to promote historic preservation.
[667] Current Sec. 29-30(6).
[668] Since Module 3, this text has replaced a 60 foot minimum garage setback requirement.
[669] Revised to clarify that this provision applies to all uses other than 1 and 2 family dwellings.
[670] Simplified for clarity.

Appendix H

Leah,

Response from Don Elliot regarding Clarion's parking code recommendations. John Clark had asked for an explanation.

Tim

Timothy Teddy, Community Development Director
City of Columbia
701 East Broadway
Columbia, MO 65205

(573) 874-7318

---------- Forwarded message ----------
From: **Don Elliott** <delliott@clarionassociates.com>
Date: Thu, Jul 14, 2016 at 2:31 PM
Subject: Downtown Parking
To: Tim Teddy <ttteddy@gocolumbiamo.com>

Tim:
You have asked Clarion Associates to clarify why we did not recommend minimum parking requirements for residential uses in the downtown Columbia zoning district (currently C-2, but proposed to become M-DT). In our experience (and in rough numbers), we find that about half of the medium and large downtowns in the U.S. have minimum parking standards, while the other half do not, and we do not hear more complaints about downtown parking from one group or the other. This leads us to believe that in medium or large downtowns the market tends to address parking demands – when they come into short supply the price rises and at some point one of three things happens: (1) complaints about a shortage of inexpensive parking incent a public parking authority to construct more parking, or (b) added revenue to be gained from parking lead private entity to construct more parking and make it available to the public for a price, or (c) tenants, residents, and users of downtown buildings tend to drive and park less (and over time occupancy tends to swing towards those who have fewer needs for parking spaces. These trends tend to be the same for residential, commercial, institutional, and industrial users, and we have seen significant changes over the last 15 years in occupancy in downtown areas towards households with fewer cars and non-residential occupants that require parking less frequently. For those reasons, our general advice that minimum parking requirements are not needed for downtown areas is not limited to commercial or non-residential users. In some cases, however, our clients have unique challenges – that lead us to recommend that a minimum parking requirement be retained for specific uses that create congestion or parking challenges that the market is unwilling or unable to address.
Don Elliott

Appendix I

John G. Clark

Jul 13 (6 days ago)

to me

Leah,

Here is the provision for an optional "transportation development charge" for waiving the requirement to build the minimum required parking.

All the best,

John G. Clark

John G. Clark, JD, CPA
Attorney at Law
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Here's the proposal to offer a buy-out option, with revenues going to transit and parking enforcement. Eran Fields thinks we should require some parking for downtown commercial as well, and offer a similar "buy-out."

1. Give downtown developers the option to pay a "transportation development charge" of $3,000/bed, in return for waiving the requirement to build parking, and the City provides a free bus pass for every resident of the building for XXX years.

2. Since a parking space costs about $25,000 to build and the code requires one-quarter parking space per bed, building the required parking would cost the developer about $6,000/bed, so a 50% saving would be attractive.

3. The City would receive $3,000/bed, which could be split between COMO Connect (to cover the $130 annual pass for many years) and the parking utility (to pay for strong enforcement of adjacent neighborhoods' residential parking permit programs).

4. In the big picture, the City would have fewer parking spaces downtown, more revenue and more riders for COMO Connect, and better parking enforcement.

5. The developer would save $3,000/bed and would only choose to do this if he/she was confident that providing bus passes instead of parking spaces would not hurt business.

6. Also, the developer could choose to build some of the required parking spaces and buy out the rest at $3,000/bed.

Appendix I

Appendix J

Residential Parking Requirements & Waivers

Downtown Columbia and Examples from Other Cities

Appendix J

Current C-2 Residential Parking Requirements

- Residential parking requirements added to C2 in 2014
- .25 space/bedroom for new residential dwelling units in new buildings (located on-site or within .5 miles)

Appendix J

C2 Residential Parking Requirement Waivers

The parking requirement for standard motor vehicle parking spaces may be reduced by any of the following:

- Each motorcycle and motor scooter parking space may be counted as one vehicular parking space, up to ten percent (10%) of the total spaces required
- Each required bicycle parking space shall be counted as the equivalent of one motor vehicle parking space.

Appendix J

C2 Residential Parking Requirement Waivers

The community development director may recommend, and the city council may approve, a reduction in the calculated parking requirement based on a parking management strategy that may include some combination of:

- Car share programs
- Purchase of bus passes for the use of the Columbia transit system by tenants
- Provision of private transit services to building residents
- A parking study that documents a reduced demand for parking

Appendix J

Proposed M-DT Residential Parking Requirements

Consultant Clarion Associates did not originally recommend minimum downtown residential parking requirements based on the perception of the following market based solutions that result from parking shortages:

- Shortage of inexpensive parking incentivize a public parking authority to construct more parking, or
- Added revenue to be gained from parking lead private entity to construct more parking and make it available to the public for a price, or
- Tenants, residents, and users of downtown buildings tend to drive and park less (and over time occupancy tends to swing towards those who have fewer needs for parking spaces).

Appendix J

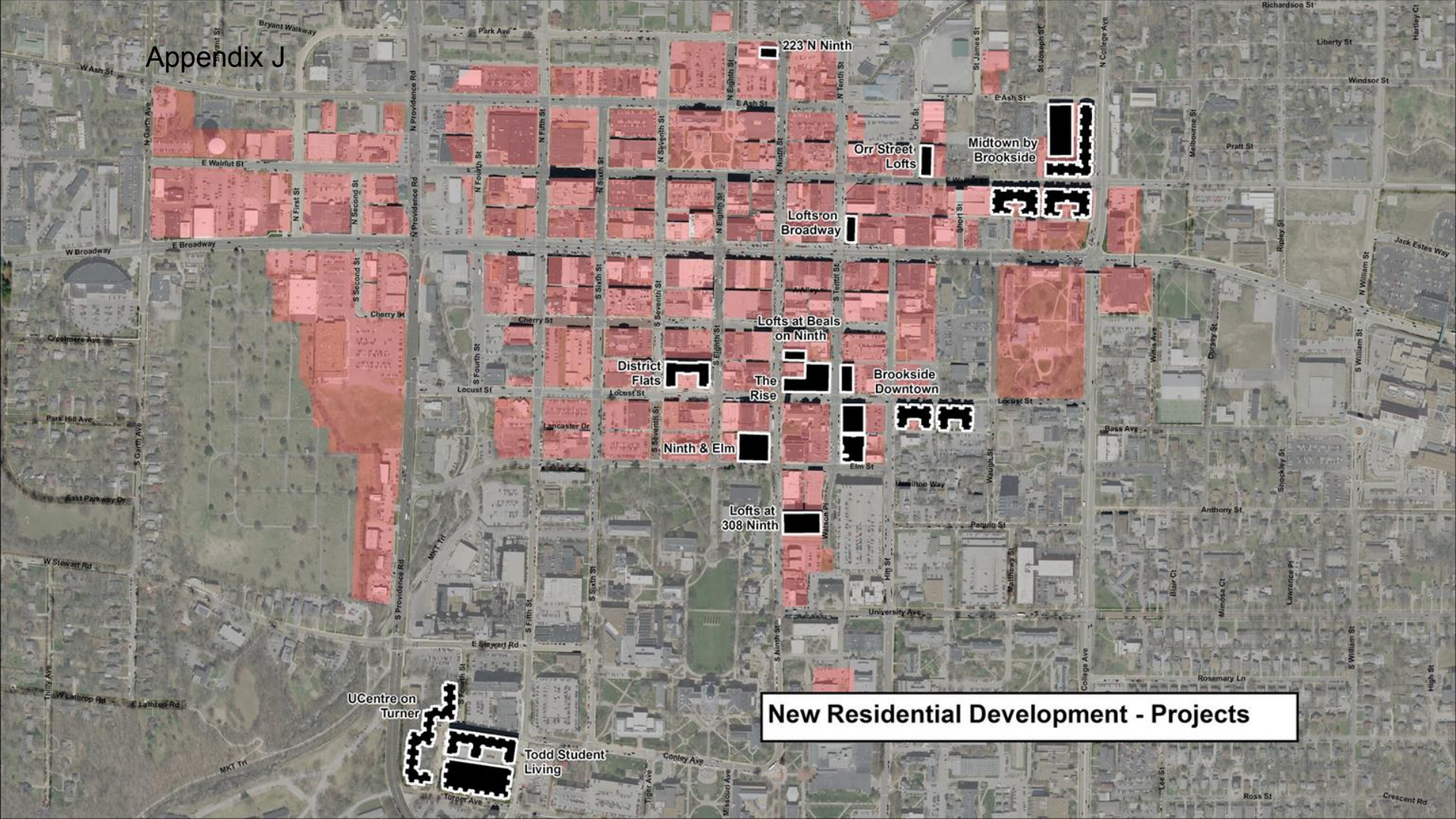
Proposed M-DT Residential Parking Requirements

- MD-T parking requirements have not changed much from what is currently included in the C-2
- .25/spaces per bedroom required (on-site or within .5 miles)
- Parking waivers are not spelled out as specifically as they are in C-2, but parking alternatives can be granted on a case by case basis

Appendix J

Review of Downtown Residential Developments

Appendix J


New Residential Development - Projects
223 N Ninth
Orr Street Lofts
Midtown by Brookside
Lofts on Broadway
Lofts at Beals on Ninth
District Flats
The Rise
Brookside Downtown
Ninth & Elm
Lofts at 308 Ninth
UCentre on Turner
Todd Student Living
Bryant Walkway
Park Ave
W Ash St
E Ash St
E Walnut St
W Broadway
E Broadway
Cherry St
Locust St
Lancaster Dr
Elm St
Hamilton Way
Paquin St
University Ave
E Stewart Rd
W Stewart Rd
Rosemary Ln
Anthony St
Ross Ave
Pratt St
Liberty St
Windsor St
Richardson St
Jack Estes Way
Crestmore Ave
Park Hill Ave
East Parkway Dr
W Lathrop Rd
E Lathrop Rd
Conley Ave
Turner Ave
Ross St
Crescent Rd
N Providence Rd
S Providence Rd
N Garth Ave
S Garth Ave
N First St
N Second St
S Second St
N Fourth St
S Fourth St
N Fifth St
S Fifth St
N Sixth St
S Sixth St
N Seventh St
S Seventh St
N Eighth St
S Eighth St
N Ninth St
S Ninth St
N Tenth St
S Tenth St
St James St
St Joseph St
N College Ave
College Ave
Orr St
Short St
Melbourne St
Ripley St
Willis Ave
Dorsey St
N William St
S William St
Shockley St
Blair Ct
Mimosa Ct
Lawrence Pl
High St
Lee St
Watson Pl
Hill St
Waugh St
Matthews St
Hartley Ct
Tilly Ave
Tiger Ave
Missouri Ave
MKT Trl

Appendix J

Recent Residential Development

Pre C-2 Parking Requirements

Development	*Bedrooms*	*Parking Required*	*Parking Provided**	*Current C-2*
Brookside DT	518	0	-	129.5
Brookside Midtown	708	380	410	177
District Flats	255	0	60	63.75
Orr St Lofts	56	0	-	14
Lofts at Beals on Ninth	42	0	-	10.5
Lofts at 308 Ninth	120	0	-	30
Lofts on Broadway	36	0	3	9
1200 E Walnut	24	0	-	6
223 N Ninth	23	0	-	5.75
TOTALS	**1,782**	**380**	**473**	**445.5**

Appendix J

Recent Residential Development

Post C-2 Parking Requirements

Development	***Bedrooms***	***Parking Required***	***Parking Provided***
Ninth & Elm (Shakespeare's)	192	48	48 (offsite lease)
The Rise	429	107	84 vehicle, 12 bicycle, 11 motorcycle
525 Elm	261	66	66
TOTALS	***882***	***221***	***221 (includes offsite)***

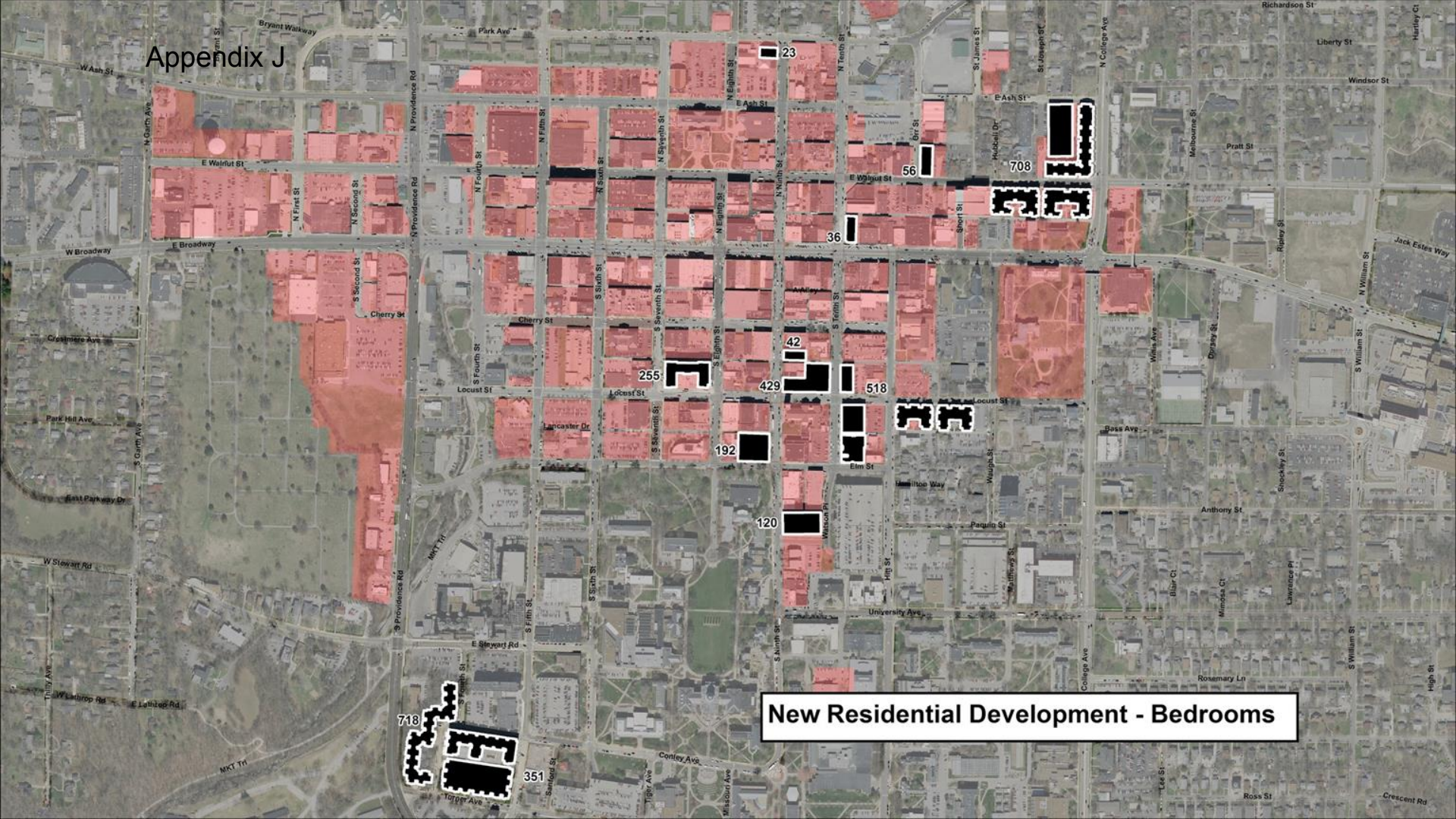
Appendix J

Recent Residential Development

Summary

Development	*Bedrooms*	*Parking Required*	*Parking Provided*
Pre C-2	1782	380	473
Post C-2	882	221	150 vehicle on-site 48 vehicle off-site 23 bike/motorcycle
TOTALS	***2,664***	***601*** ***.23 spaces/bedroom***	***694*** ***.26 spaces/bedroom***

Appendix J


New Residential Development - Bedrooms
23
56
708
36
42
255
429
518
192
120
718
351
Bryant Walkway
Park Ave
W Ash St
E Ash St
E Walnut St
W Broadway
E Broadway
Cherry St
Locust St
Lancaster Dr
Elm St
Hamilton Way
Paquin St
University Ave
E Stewart Rd
W Stewart Rd
Rosemary Ln
Conley Ave
Torger Ave
Ross Ave
Anthony St
Jack Estes Way
Richardson St
Liberty St
Windsor St
Pratt St
Crestmere Ave
Park Hill Ave
East Parkway Dr
MKT Trl
N Providence Rd
S Providence Rd
N Garth Ave
S Garth Ave
N First St
N Second St
S Second St
N Fourth St
S Fourth St
N Fifth St
S Fifth St
N Sixth St
S Sixth St
N Seventh St
S Seventh St
N Eighth St
S Eighth St
N Ninth St
S Ninth St
N Tenth St
S Tenth St
Orr St
Hubbell Dr
St James St
St Joseph St
N College Ave
Melbourne St
Ripley St
Willis Ave
Dorsey St
N William St
S William St
Shockley St
Lawrence Pl
Blair Ct
Minotsa Ct
Matthews St
Waugh St
Watson Pl
Hill St
College Ave
Lee St
Ross St
Crescent Rd
High St
Hartley Ct
Trilby Ave
W Lathrop Rd
E Lathrop Rd
Santa Fe St
Taylor Ave
Missouri Ave

Appendix J

Missoula, MT

- Mayor-Council form of government
- Home to the University of Montana
- Estimated city population: 71,022
- Estimated metropolitan area population: 114,181

Wikepedia, 7-25-16: https://en.wikipedia.org/wiki/Missoula,_Montana#/media/File:Downtown_Missoula_.jpg

Appendix J

Missoula, MT: Parking Department

- Has a quasi-governmental (public-private partnership)parking department, staffed w/city employees, run by a 5 member board, which is a 5 member Council appointed Parking Commission

- The parking department operates like a business, as an enterprise unit-- it pays for itself through parking fees and fines (all fee and fine increases approved by Council)

- Many of its parking structures are paid through tax increment districts and through private-public partnerships (their last parking structure was funded 40% city/60% developer)

- It manages all public and private parking facilities in the city (it receives payment from private facilities for parking enforcement):

Missoula, MT: Development Partnerships

However, the parking department is discussing one of two means to increase development contributions to parking:

- **Fee in lieu contributions** (although Missoula does not currently have a parking requirement for downtown developments it is considering adding a requirement but including the option for the developer to pay a fee in lieu of building parking. The department can keep the funds and be prepared to build more parking structures when needed).

- **Development impact fee:** This option would not require the addition of parking requirements but would instead add a development impact fee that would go directly to the parking department to keep in preparation to build more parking when needed.

Appendix J

Missoula, MT: Parking Data & Residential Permit Program

- The parking department does not perform regular parking audits but it recently purchased a new electronic, multi-space parking metering system that automatically tracks parking data-- the department plans to use the data to track parking supply and demand
- The department also manages a Residential Parking Permit Program (RPPP), adjacent to University of Montana, which was started in the late 80’s. It is currently considering expanding the residential permit area, as well as increasing permit fees

Appendix J

Missoula, MT: TDM

- The parking department is a big supporter and contributor to Missoula's Transportation Demand Management, emphasizing the need for alternatives to driving

- The department works with developers to ensure the availability of bicycle parking at all downtown residential developments

- The department is a major contributor to Missoula's Mountain Line transit service, which recently went to Zero Fare for all riders, including its door to door service (for this effort, it recieved contributions not only from parking, but from the University of Montana, Associated Students of the University of Montana, City and County, Missoula Metropolitan Planning Association,St Patrick Hospital, Community Medical Center, Missoula County Public Schools, Missoula Aging Services, Missoula Downtown Association, the Missoulian, Southgate Mall, DEstination Missoula and Homeward Inc.)

- Additionally, in Nov. 2013, Missoulians approved a 14.5 million levy increase for a number transit improvements-- including expanded hours of service and increased service areas

Appendix J

Fort Collins, CO

- Council-Manager form of government
- Home to Colorado State University
- Estimated Population 161,000

Wikipedia 7-26-16: https://en.wikipedia.org/wiki/Fort_Collins,_Colorado#/media/File:Downtown_Fort_Collins_Colorado.jpg

Appendix J

Fort Collins, CO

- Similar to Columbia, Ft. Collins is currently revising their zoning code, which includes revisions to downtown parking requirements:

http://www.fcgov.com/planning/downtown/pdf/2015-1104SpilloverParkingMaterials.pdf

Has a residential permit program ordinance that requires each neighborhood near downtown to follow the same steps to implement a residential permit program

Appendix J

Fort Collins, CO

- Parking Services Department tracks number of available parking spaces, both private and public, on-street and off-street
- Public on-street parking downtown is free but time limited
- Public parking on the periphery of downtown is free w/no time limits
- Downtown parking structures, free for first hour, and then $1 per hour
- http://www.fcgov.com/parking/pdf/downtownparking.pdf

Ft. Collins, CO

City Council adopted a strategic parking plan in 2013, long-term action items for 2015 and beyond include:

- Develop a long-term funding plan for public parking infrastructure and programs based on community and Downtown sources, and a parking impact fee on new development.
- Continue on-going data gathering – Complete parking inventory, occupancy, onstreet turnover, and public attitudes annually.
- http://www.fcgov.com/planning/pdf/parking-plan.pdf

Appendix J

Naperville, IL

- Council-Manager form of government
- Home to North Central College
- Estimated Population 144,864
- Suburb of Chicago

Appendix J

Naperville, IL

- Public Parking (street and garage) is free but time restricted generally to 2 hours during day time period. No overnight street parking.
- Garage passes only available to businesses and residents
- Requirements
    - Nonresidential parking requirement calculated based on the downtown generation rate (2 spaces/1,000 sq ft) as defined by **CIM**
    - Residential required to provide 2 spaces/unit
    - All property within original SSA in DT zoning includes parking exemption up to 2.5 GFA; additional construction requires parking

Naperville, IL

- 2001, developed process to manage parking requirements downtown due to growth - **Continuous Improvement Model (CIM)**:
    - **Parking audit**: to determine parking generation ratio and occupancy of available public and private parking.
    - **Parking generation ratio**: approximately 2 spaces/1,000 sq.ft. of GFA. Used to determine required parking when not exempted.
    - **Parking occupancy:** Used to inform decision on future parking construction. Occupancy above 85% negatively impacts satisfaction.
    - **Parking survey**: provide insight in levels of satisfaction with

Appendix J

Naperville, IL

Fee in Lieu:

- If eligible, may request fee in lieu from Council for new parking
- Fee based on formula that includes half of DT generation rate, average historical cost of garage space
- Fee in lieu shall be used solely for capital and maintenance costs related to parking supply in the downtown area. However, the funds shall not contribute toward the City's obligation to finance thirty-three percent (33%) of the capital costs for construction of parking.

Appendix J

Naperville, IL

Parking Facility	Year Built	Number Of Spaces	Total Cost
Central parking facility	1987	553	$2,600,000.00
Van Buren parking deck	2001	530	7,400,000.00
Van Buren deck addition	2008	317	9,007,950.00

Appendix J

Naperville, IL

Calculation: The parking fee in lieu of providing parking shall be based on the following calculation:

PAYMENT IN LIEU OF PROVIDING PARKING

Step 1: Calculate gross parking demand	Building gross square footage (adjusted for any existing SSA credit)	×	Downtown generation rate	=	Gross parking demand
Step 2: Calculate net parking demand	Gross parking demand	×	50%	=	Net parking demand
Step 3: Payment in lieu parking amount	Net parking demand - parking provided on site	×	Weighted average of historical deck cost per space	=	Downtown parking fee in lieu payment

Appendix J

No Parking Requirements: A Tale of Two Cities

Los Angeles: Passed Adaptive Reuse Ordinance in 1999, Allowed the conversion of vacant commercial buildings into housing, and to spur development the law exempted the buildings from minimum parking requirements (although no free on-street parking exists anywhere in central L.A.)

Result: A greater variety of housing was built (for all income levels, car owners and non-car owners) and supplied more parking in the aggregate (some buildings provided more than the minimum parking required for new developments, and some buildings provided less--it all depended on the target market)

Parking became unbundled, in that the cost of parking was not automatically included in the cost of housing and passed on to homeowners or renters who did not have cars or who were willing to park farther away

Appendix J

No Parking Requirements: A Tale of Two Cities

Portland: Policies with no residential parking requirements in a number of neighborhoods near and in downtown have been around since the 1980's (although there are numerous areas close to downtown that have free on-street parking)

Result: By 2012 more than two dozen apartment buildings with no on-site parking were proposed or built in neighborhoods near downtown Portland and residents are starting to complain about severe on-street parking congestion (There are no financial incentives for developers to build parking because free parking exists on nearby streets).

Like Columbia, the city currently has a committee working on these parking challenges. The committee is considering some form of residential permit programs to curb the problems related to high density and free parking

Appendix K

DOWNTOWN CHURCHES' PARKING NEEDS

As property owners, downtown churches, including the Missouri United Methodist Church, the Calvary Episcopal Church, and the First Presbyterian Church, face some unique issues relating to parking for their constituents. Downtown churches contributed significantly to the overall business activities of downtown Columbia, often hosting events attended by hundreds of individuals on church property. A number of these visitors will have lunch or shop downtown before or after these events. Although parking continues to be a problem even for these events, it is parking on Sunday morning that is the biggest concern to downtown churches, because Sunday is the day with associated with the largest number of participants in church activities. There are many elderly individuals and people with disabilities that attend church on Sunday. The churches have a limited number of church-owned parking spaces and rely on the parking that is adjacent to their properties to accommodate the needs of their members.

With massive current construction projects occurring downtown, planned projects in process, and completed projects already occupying much of downtown's limited parking, available parking on Sundays is shrinking, and will soon be completely unavailable to churchgoers because the still existing parking spaces will be occupied by residents of new housing. In addition, during the construction phase, many of the construction projects require that contractors bag metered parking spaces in order to secure space for unloading and storing construction materials. In addition, some bagged parking spaces are being used for contractors' and workers' personal vehicles. The temporary workers are competing with regular downtown customers for limited space.

As a group, we are looking for ways to preserve the limited number of available parking spaces for those who are attending church services on Sunday mornings, and to expand spaces available during the week for those attending events at the downtown churches. We have the following suggestions to assist us in this important mission.

1. Disallow overnight parking in spaces adjacent to downtown churches

2. Not allow weekend overnight parking on the first floor of the parking garage at 10th and Cherry and the Hitt Street parking garage

3. Evaluate the length of time that contractors need to bag meters during the week and monitor their use

4. Require that workers' vehicles be parked off site and the workers bussed to the construction project.

This is by no means an exhaustive list. Our goal is to start a dialogue among our task force board members to try to brainstorm about how to ensure that downtown parking continues to be available for churchgoers on Sunday and for the myriad weekly activities that take place in downtown churches.

Appendix K Missouri United Methodist Church										
204 S. Ninth Street										
Nearest Parking Garage - MU Hitt Street										
Church Membership										
Week Day and Sunday Church Activities	Fall	8-10 AM	10-12 PM	12-2 PM	2-4 PM	4-6 PM	6-8 PM	8-10 PM	10-12 PM	Total
Sunday		2 Events 400 People	2 Events 200 People							600
Monday		1 Event 83 People	1 Event 10 People	1 Event 20 People	1 Event 12 People	3 Events 37 People	5 Events 128 People	1 Event 12 People		330
Tuesday		1 Event 20 People	1 Event 6 People	2 Events 122 People	2 Events 110 People	1 Event 4 People	6 Events 96 People	1 Event 60 People	1 Event 10 People	136
Wednesday		2 Events 86 People	4 Events 24 People	2 Events 85 People	1 Event 12 People	3 Events 83 People	5 Events 101 People	3 Events 85 People		387
Thursday		3 Events 47 People	I Event 20 People	4 Events 60 People	2 Events 115 People	1 Event 110 People	4 Events 144 People	1 Event 18 People		261
Friday		1 Event 83 People	1 Event 6 People	3 Events 96 People			1 Event 20 People	1 Event 20 People		199
Total										1,913
Week Day and Sunday Church Activities	Summer									
Sunday		2 Events 400 People	3 Events 200 People							500
Monday		2 Events 122 People	2 Events 132 People	2 Events 122 People	2 Events 122 People	2 Events 122 People	5 Events 56 People	1 Event 20 People		200
Tuesday		3 Events 142 People	2 Events 122 People	2 Events 122 People	2 Events 122 People	3 Events 126 People	1 Event 4 People	2 Events 20 People	1 Event 10 People	176
Wednesday		3 Events 125 People	5 Events 140 People	3 Events 137 People	2 Events 122 People	4 Events 136 People	2 Events 14 People	1 Event 6 People		251
Thursday		4 Events 154 People	3 Events 150 People	5 Events 170 People	3 Events 127 People	3 Events 132 People	3 Events 34 People	1 Event 18 People		246
Friday		1 Event 12 People	2 Events 18 People	3 Events 38 People	1 Event 12 People	1 Event 12 People	1 Event 20 People	1 Event 20 People		58
Total										1,431
April 2 Days MSHAA 9,000 at church during music contest										

Appendix K

True/False 350 seats x 15 shows 5,250										
Reality Bites open house 7,250 attendees										
Does not include funerals and weddings 50-500 attendees										

Appendix K

First Presbyterian Church									
16 Hitt St.									
Nearest Parking Garage - 10th and Cherry St.									
Church Membership									
Week Day and Sunday Church Activities	Fall	8-Noon	12 PM-4:30pm	4:30 pm-6 pm	6:30 pm-10 pm		Total		
Sunday		2 Events 350 People	1 Event 50 People	2 Events 60 People	1 Event 15 people		475		
Monday		Events 10 People	Events 10 People	Events 10 People	Events 20 People		50		
Tuesday		Events 90 People	Events 10 People		Events 80 People		180		
Wednesday		Events 10 People	Events 20 People	Events 12 People	Events 90 People		132		
Thursday		Events 45 People	Events 10 People		Events 30 People		85		
Friday		Events 20 People	Event 5 People		Events 10 People		45		
Saturday		Events 50 People					50		
Total							1,017		
Week Day and Sunday Church Activities	Summer								
Sunday		2 Events 350 People	1 Event 50 People	2 Events 60 People			430		
Monday		Events 10 People	Events 10 People		Events 20 People		40		
Tuesday		Events 10 People	Events 10 People		Events 20 people		40		
Wednesday		Events 10 People	Events 25 People		Events 20 people		55		
Thursday		Events 10 People	Events 10 People		Events 25 People		45		
Friday		5 People	5 People		10 People		20		
Total							630		
True/False 250 seats x 12 shows 3,000									
Vacation Bible School 80 people daily 1 week in Summer									
Does not include funerals and weddings 50-500 attendees									

Appendix K

Approx. 154 Standard Metered Parking Spaces

Appendix L

Downtown Fee in Lieu & Parking Management Programs

Appendix L

Reasons for Fee in Lieu

- In areas of more intense activity or where the community wants to promote density, requiring each use to provide separate parking facilities can degrade the pedestrian environment, limit density, and encourage drivers to drive from one site to the next rather than parking once and walking between nearby destinations.
- One solution is to allow developers to pay fees into a municipal parking or traffic mitigation fund in lieu of providing the required parking on site.
- The fees can then be used to provide centralized public parking.
- And/or in some cases, the community may wish to establish the fund in such a way that it can also be used for transit, bicycle, and pedestrian improvements that can reduce parking demand.
- By consolidating parking in centralized public lots or structures and allowing developers an alternative to providing parking on-site, a fee-in-lieu system can encourage in-fill development and redevelopment in existing downtowns or historic buildings. It can also improve the overall efficiency of parking provision by addressing the needs of the area as a whole, rather than the needs of each individual site.

Appendix L

How Cities Calculate Fee In Lieu

In order to make paying a fee more attractive to developers than providing parking on site, it must save them money. On the other hand, the fee must be high enough to allow for development of centralized parking facilities or to make enough transit or non-motorized mode improvements to put a dent in parking demand

In lieu fees can be established as a flat rate per parking space not provided or per square foot of floor area (one time or annually), or through a case-by-case determination for the development as a whole. Uniform fees are much easier for the community to administer and developers to use.

In-lieu fees of any kind should be linked to an index of construction costs, or should be reviewed and updated regularly, so that inflation and changing conditions will not distort them.

If they are allowed in a large geographic area, it may be wise to set graduated fees that are higher in areas where land values are greater or to reflect where a public surface lot would be built rather than a garage.

Appendix L

Examples of Fee In Lieu Programs

- Vancouver, British Columbia, calculates its in-lieu fee as the expected cost per space to construct a public parking structure, minus the expected revenue from the parking charges for each space. The fee represents the portion of the structure's cost that is not covered by the parkers (2005)
- Santa Monica, California allows developers in the commercial district to pay an in-lieu fee of $1.50 a year per square foot of floor area, regardless of use. (2005)
- Davis, CA allows developers to pay a $4,000 fee in lieu of each required parking space in Central Commercial (CC) and Mixed Use (MU) districts and an $8,000 fee in lieu of parking each required parking space in all other zoning districts (2016)
- The Town of Oak Bluffs allows uses proposed for the B-1 business District that are unable to meet the off-street parking requirements to make a payment in lieu of providing the spaces. The payments are annual per space and depend on the number of required spaces, but range from $50 to $100 per space each year (2007).

Appendix L

Examples of Fee In Lieu Programs - Naperville, IL

- If eligible, may request fee in lieu from Council for new required parking
- Fee based on formula that includes half of DT generation rate, average historical cost of garage space
- “Fee in lieu shall be used solely for capital and maintenance costs related to parking supply in the downtown area. However, the funds shall not contribute toward the City's obligation to finance thirty-three percent (33%) of the capital costs for construction of parking.”
- Nonresidential parking requirement calculated based on the downtown generation rate (2 spaces/1,000 sq ft) as defined by **audit**
- Residential required to provide 2 spaces/unit

Appendix L

Naperville, IL

- **Parking audit**: determines parking generation ratio (parking/gfa) and occupancy of available public and private parking.
- **Parking generation ratio**: approximately 2/1,000 sq.ft. of GFA. Used to determine required parking when not exempted.
- **Parking survey**: provide insight in levels of satisfaction with parking. (Also: number of business trips expected, length of stay, distance walked, expectation of parking availability DT, etc)
- **Parking occupancy:** Used to inform decision on future parking construction. Occupancy above 85% negatively impacts satisfaction.

Appendix L

Naperville, IL

Calculation: The parking fee in lieu of providing parking shall be based on the following calculation:

PAYMENT IN LIEU OF PROVIDING PARKING

Step 1: Calculate gross parking demand	Building gross square footage (adjusted for any existing SSA credit)	×	Downtown generation rate	=	Gross parking demand
Step 2: Calculate net parking demand	Gross parking demand	×	50%	=	Net parking demand
Step 3: Payment in lieu parking amount	Net parking demand - parking provided on site	×	Weighted average of historical deck cost per space	=	Downtown parking fee in lieu payment

Appendix L

City of Columbia

Garage	Year	Spaces	Cost at time	Cost w/Inflation	Cost/Space at time	Cost/Space w/Inflation
Short Street	2013	418	$12,000,000		$28,708.13	
5th & Walnut	2011	701	$13,000,000		$18,545	
8th & Cherry	1999	175	$2,300,000	$3,000,000	$13,143	$17,143
6th & Cherry	1997	379	$4,000,000	$5,300,000	$10,554	$13,984
10th & Cherry	1995	276	$2,650,000	$3,800,000	$9,601	$13,768
Plaza	1986	349	$2,600,000	$5,100,000	$7,450	$14,613

Appendix L

Next Decisions for Taskforce

- Consider recommendations on current Downtown parking requirements and alternative (e.g., fee-in-lieu). Or;
- Consider recommendations to help the City evaluate downtown parking supply and demand
  - An LPR system would give the City the ability to perform public parking audits in real time
  - Physical audits of parking spaces (public, private)
  - Downtown community surveys on parking perspectives, satisfaction

Appendix M

Carl Walker

Park Place Parking Structure, Missoula, Montana

Parking Structure Cost Outlook for 2015

By Gary Cudney, P.E., President/CEO

National Median Parking Structure Construction Cost 2015
$18,599 per space
$55.66 per square foot

Carl Walker is pleased to provide its annual statistical analysis of parking structure construction costs and new parking structure market forecast, albeit a little later than usual this year. At ***Carl Walker***, we specialize in parking structure design, structural engineering, parking studies, parking operations consulting, and restoration of parking structures, plazas, facades, and other buildings. We maintain a database of completed parking structure projects and have developed a methodology to analyze the historical cost information to assist our clients and the industry.

Our construction cost database contains hundreds of completed parking structure projects of varying size, scope, and geographic location. For this forecast, we only omit the cost of parking structures that are completely below grade, since the cost of such structures is much higher. The cost data is assigned factors based on the time of bidding and location of the parking structure. The time factor is based on the Building Cost Index (BCI), published by Engineering News-Record (ENR). The location factor is taken from the yearly edition of the RS Means Building Construction Cost Data. Applying these two factors to actual construction cost data adjusts the cost to a current national basis and from that we determine the national median. The national median can then be re-adjusted to reflect a median construction cost in almost every city in America.

As of March 2015, our statistical data indicates that the median construction cost for a new parking structure is $18,599 per space and $55.66 per square foot, increasing 3.1% from March, 2014 when the median cost was $18,038 per space based on our historical database. This relatively minor increase is reflective of the fact that while construction markets are in a recovery, material price increases were very low due to foreign competition, fuel prices were considerably lower, and labor rates were stable as the competitive market place continued. The following table lists the 2015 median parking structure construction cost in various U.S. cities.

It should be noted that the construction cost data does not include costs for items such as land acquisition, architectural and engineering fees, environmental evaluations, materials testing, special inspections, geotechnical borings and recommendations, financing, owner administrative and legal, or other project soft costs. Soft costs are typically about 15% to 20% of construction costs, but can be higher for owners who allocate their internal costs directly to the project.

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Median Parking Structure Construction Costs 2015

City	Index	Cost/Space	Cost/SF
Atlanta	87.5	$16,274	$48.70
Baltimore	92.6	$17,222	$51.54
Boston	118.1	$21,965	$65.74
Charlotte	82.2	$15,288	$45.75
Chicago	117.2	$21,797	$65.23
Cleveland	99.6	$18,524	$55.44
Denver	92.5	$17,204	$51.49
Dallas	85.5	$15,902	$47.59
Detroit	102.9	$19,138	$57.28
Houston	86.8	$16,144	$48.31
Indianapolis	92.9	$17,278	$51.71
Kansas City	103.3	$19,212	$57.50
Los Angeles	107.2	$19,938	$59.67
Miami	88.2	$16,404	$49.09
Minneapolis	108.9	$20,254	$60.62
Nashville	87.8	$16,330	$48.87
New York	131.8	$24,513	$73.36
Philadelphia	114.5	$21,295	$63.73
Phoenix	88.1	$16,385	$49.04
Pittsburgh	102.0	$18,970	$56.77
Portland	99.5	$18,506	$55.38
Richmond	87.1	$16,199	$48.48
St. Louis	102.7	$19,101	$57.16
San Diego	104.5	$19,435	$58.17
San Francisco	122.7	$22,820	$68.30
Seattle	102.8	$19,119	$57.22
Washington, D.C.	97.1	$18,059	$54.05
National Average	**100**	**$18,599**	**$55.66**

MEDIAN CONSTRUCTION COST

I am often asked what features are included within the "median construction cost". A median cost parking structure typically includes such features as:

- 8' 6" wide parking spaces
- Precast concrete superstructure
- Attractive precast concrete façade with basic reveal pattern
- Glass backed elevators and unenclosed stairs clad with glass curtain wall to the exterior
- Basic wayfinding and signage
- Shallow spread footing foundations
- All above grade construction
- Open parking structure with natural ventilation without mechanical ventilation or fire sprinklers
- Little or no grade level commercial space
- Basic parking access and revenue control system
- Energy efficient fluorescent lighting

The construction cost of the parking structure would be higher than the median if it includes such enhanced features as:

- 9' 0" wide parking spaces for better user comfort
- Cast-in-place post-tensioned concrete superstructure for lower maintenance
- Attractive façade with precast, brick, metal panels, and other materials
- Green Garage Certification following the Green Parking Council standards
- Energy efficient LED lighting with occupancy and photocell computer controls
- Custom wayfinding and signage system
- Storm water management including on-site retention/ detention
- Deep foundations, such as caissons or piling
- Below grade construction
- Enclosed stair towers due to local code requirements
- Enclosed parking structure without natural ventilation where mechanical ventilation and fire sprinklers are required
- Grade level commercial space
- Mixed use development where the parking is integrated with office, retail, residential, or other uses
- State-of-the-art parking access and revenue control system
    - License plate recognition
    - Parking guidance system
    - Count system with variable message LED signs
    - Pay-on-foot stations
- Wi-Fi and cellular services

Carl Walker

PARKING INDUSTRY CONSTRUCTION ECONOMIC FORECAST

Thankfully, the construction industry is in the midst of a sustained recovery. In the parking industry, growth should be buoyed as the institutional sector (i.e. city governments, higher education, and healthcare) returns to growth in construction spending.

As the construction economy improves, escalation of construction costs and longer construction schedules can be expected in many areas of the country due to labor shortages in construction trades and professional positions and as construction companies increase margins that have been depressed for more than five years. It is predicted that construction inflation could be approximately double consumer inflation![1] Predictions by industry experts point to increased levels of construction in all sectors for 2015 and 2016:

- The American Institute of Architects (AIA) chief economist Kermit Baker, PhD, stated that "For the coming year, prospects look to continue to improve, with overall growth projected to increase almost eight percent. Institutional activity is expected to return to the positive column, with spending gains of five percent." While there has been fluctuation and regional differences in the AIA Architectural Billings Index (ABI), Baker further reports that "Since May of last year, ABI scores have been very positive…with all of the major sectors participating in the recovery".[2]

- The AIA also compiles a Consensus Construction Forecast based on predictions of seven leading U.S. non-residential construction forecasters in the U.S. The Consensus Construction Forecast indicates the non-residential building construction industry is expecting better growth than the past five years, with increases in activity projected for the office sector of 12.9% (2015) and 12.0% (2016), healthcare sector of 4.7% (2015) and 6.2% (2016), education sector of 4.7% (2015) and 5.2% (2016).[2]

- Gilbane Building Company, in their Market Conditions in Construction report, reported a 6.8% increase in non-residential building construction in 2014 and they forecast a doubling of last year's growth during 2015 to 14.0%! Gilbane also reports that labor and material costs will increase as fees, margins, and material costs expand such that construction escalation could increase 5% to 8% for 2015 and 2016.[1]

- Turner Construction's Turner Building Cost Index, which tracks construction cost escalation, rose 4.4% during 2014. Their 2014 Fourth Quarter Forecast states that "Higher construction cost escalations in urban centers with increased construction activity, as well as selective mega-projects, are driving the average domestic construction cost increases."[3] Additionally, the Turner 2015 First Quarter Forecast indicates a 1.09% increase in costs for the quarter and that "material lead times have been extended due to increased demands and a reduced availability of production facilities to support those demands."[4]

- The Engineering News-Record (ENR) recently reported their first quarter 2015 Construction Industry Confidence Index (CICI) increased to a record 78 points on a scale of 100, which represents a growing market. The vast majority of the 305 executives of large construction and design firms responding to the survey believe that the market is stable and growing and will continue to pick up steam over the next 18 months.[5]

SUMMARY

The sustained improvement in the architectural firm backlog reported by the Architectural Billings Index (ABI) and the record-high Construction Industry Confidence Index (CICI) are positive indicators for near term growth in the construction of parking structures. In absence of any major political or economic event, construction activity is forecasted to grow about 8% the next two years.

With the improved construction activity, project costs are expected to escalate to a greater level than the projected increase in material and labor costs would indicate. Further, shortages of skilled construction workers who left the industry during the long downturn could restrain market growth and raise costs. Because of these factors, Gilbane forecasts construction inflation will be approximately double that of consumer inflation and in the 5% to 8% range over the next two years.[1]

The parking professionals at ***Carl Walker*** will be happy to assist with budgeting of your next parking structure. If you have any questions or would like specific cost information for your area, contact Gary Cudney at gcudney@carlwalker.com or 800-FYI-PARK (800-394-7275).

REFERENCES

1. "Market Conditions in Construction – December 2014," by Gilbane Building Company.
2. "Steady Construction Growth in the Forecast," by Kermit Baker, PhD, The American Institute of Architects AIArchitect, January 24, 2014.
3. "Turner Building Cost Index – 2014 Fourth Quarter Forecast," Turner Construction Company.
4. "Turner Building Cost Index – 2015 First Quarter Forecast," Turner Construction Company.
5. "Industry Market Confidence Hits Record High," by Gary J. Tulacz, Engineering News – Record, March 24, 2015

Appendix M

Carl Walker

Parking Structure Planning & Design

At ***Carl Walker***, parking is as much an art as it is a science. It is a structural challenge that skillfully blends parking and engineering concepts with innovative solutions designed to streamline and simplify a world in motion.

Parking structures have unique characteristics that distinguish them from other buildings. As parking consultants, one of our strengths is an extensive background in planning and designing parking structures for virtually every use and for every type of client, and in each case intelligently balancing aesthetics, functionality, durability, and cost for maximum benefit to the owner, the user, and the environment.

Over the years, our parking professionals and structural engineers have been responsible for more than 5,500 successful projects. We are "All Things Parking" and provide the entire range of parking design capabilities:

- Structural Engineering
- Feasibility & Site Analyses
- Planning/Functional Design
- Structural Engineering
- Sustainable Design
- Lighting & Drainage
- Revenue, Security & Access Control Systems
- Design/Build Scope Documents
- Graphics & Wayfinding Systems
- Owner's Representative Services

Studies & Operations Consulting

Parking is not simply about storing cars. It is about providing a valuable link in the transportation system between where you live and your destination. Whether that is a city center, the office, university, hospital, airport or an event, you want to get where you are going without inconvenience, interruptions and lost time. The ***Carl Walker*** team specializes in solving problems and providing successful solutions for real world applications.

For any parking system to be successful, there needs to be a combination of visionary strategic planning, defined organizational goals and effective management. ***Carl Walker*** provides comprehensive downtown, campus, and transportation planning services, along with organizational assessments and policy development assistance for a wide range of client types. We understand how planning is supported by strong management and organizational success. We can help make the most of your parking investment with enhanced customer service, proper technology applications, maximizing revenue, and implementing practical, common sense policies that actually work.

- Management & Operational Reviews
- Organizational & Policy Assessment
- Supply & Demand Analysis
- Transportation & Parking Master Plans
- Marketing, Branding & Customer Service
- Feasibility Studies
- Technology Assessments
- Revenue & Rate Analysis
- Enforcement Policy & Operations

Restoration Engineering

Carl Walker provides restoration engineering for existing parking structures, but our expertise does not end there. Our group of Restoration Specialists is knowledgeable and experienced in the evaluation and repair of a variety of structures, including building facades/enclosures, supported plaza systems, tunnels, bridges, stadiums, etc.

Carl Walker's restoration specialists help clients understand the condition of their facilities, assess repair and maintenance options, and design and facilitate the restoration program. Our goal is to work with our clients to develop a balanced restoration program to meet the repair and maintenance needs of the structure as well as the functional and operational goals of a facility.

Program Development

- Captal Improvement Plan Development
- Life Cycle Cost Analysis
- Maintenance Manual Preparation
- Due Diligence Review
- Public Private Partnerships

Evaluation Services

- Structural Analysis
- Forensic Investigation
- Condition Assessment
  - » Parking Garage Survey
  - » Façade/Building Envelope Survey
  - » Plaza Leaking/Waterproofing Review

Restoration Engineering

- Repair/Rehabilitation
- Leak Mitigation
- Corrosion Protection
- Building Envelope Repair
- Structural Strengthening & Adaptive Reuse

Carl Walker, Inc. 800.394.7275 www.carlwalker.com

Appendix N

Sub-Committee: Downtown Parking Management

What do we want?

1. Downtown parking is managed in a way that helps downtown grow and thrive.
2. Programs of the City and University affecting downtown are well integrated.
3. Long-term storage of cars (overnight and multi-day parking) does not impact business and residential short term parking needs.

Critical Issues:

- The need for accurate, real-time metrics about parking demand and supply;
- How to integrate the programs and policies of the City and UM administration;
- How to protect and grow downtown businesses and the downtown economy;
- How to use leading edge technologies to improve parking management;
- How to equitably distribute the costs of providing parking to the end users.
- **Define the roles/responsibilities of the parking utility in relation to planning needs, permitting, priorities, finance, data management**

Related Strategic parking management issues to consider:

- MD-T Parking requirements
- fee-in-lieu payments;**downtown transportation/parking impact fees/defined parking benefit district**
- **What will fee-in-lieu pay for: infrastructure/ transit/ enforcement/education/ mode-shift/ bike-share program?**
- shared parking and joint parking and unbundling residential parking ownership;
- parking districts and integrated parking management systems;
- grandfathering of storefront parking arrangements;
- enforcement approaches and technologies **(parking boots, Sunday enforcement)**;
- timing of new parking supply;
- parking and urban design;
- permit parking;
- time limits;
- parking pricing **(tiered ticketing)**;
- **prioritization for downtown parking, (meters and permits) by use & user: destination, permits, storage, bagged; businesses, employees, residents, churches, students, etc.**

Other items

- **Potential to expand the focus of taskforce to examine parking requirements beyond the MD-T**

Appendix N

Which critical issues and related parking management issues are:
Immediate
Mid Range
Long Range

*The sub-committee will need to focus on the immediate critical issues first.

Appendix N

Sub-Committee: Parking Management for Neighborhoods Adjacent to Downtown

What do we want?

- People who live in neighborhoods are able to safely park near their homes.

Critical Issues

- How to protect residential neighborhoods from overflow university parking;
- How to implement a city-wide approach to residential parking permit districts;
- The need for accurate, real-time metrics about parking demand and supply;
- How to use leading edge technologies to improve parking management;
- How to equitably distribute the costs of providing parking to the end users.
- **How to assess the unique needs of individual neighborhoods**
- **How to assess residential parking needs**
- **How to gain an understanding of who's parking in the neighborhoods: car storage, neighborhood vs. downtown residents, commuters**
- **How to fund neighborhood enforcement?**
- **How overflow parking affects public safety, specifically the blockage of emergency vehicles and fire hydrants**

Related Strategic parking management techniques and practices:

- enforcement approaches and technologies;
- parking and urban design;
- permit parking;
- time limits;
- parking pricing;
- parking districts and integrated parking management systems
- **Neighborhood zoning policies**
- **The role of neighborhood associations**
- **Education**

Which critical issues and related parking management issues are:

Immediate
Mid Range
Long Range

*The sub-committee will need to focus on the immediate critical issues first.

Appendix N

Sub-Committee: Transportation Demand Management

What do we want?

1. **Downtown parking is managed in a way that helps downtown grow and thrive.**
2. **Programs of the City and University affecting downtown are well integrated.**

Critical Issues

- How to create a walkable/bikeable downtown and walkable/bikeable neighborhoods;
- How to increase transit service levels and transit ridership;
- **The need for convenient, affordable long-distance travel options**

Related Strategic parking management techniques and practices,

- MD-T Parking requirements;
- Fee-in-lieu payments;
- shifting transportation mode share away from single occupant vehicles;
- **Bike share program**
- **Education on the economics of motorized vs. nonmotorized transportation**
- **Partnerships for alternative transportation options**
- **Discounts and education on Columbia airport travel options for students**
- **Long-term car storage options for students/others who don't use cars frequently**
- **Rental car opportunities for those under 25**
- **Market incentives**
- **Regional Mass Transit for long-distance commuters**
- **Funding options for TDM/Alternative modes of transportation**
- **Zone for walkability through the support of connectivity and density standards, and mixed used neighborhood districts[1] that lead to the creation of urban villages[2] and neighborhood marketplaces[3].**

SGA Recommendations related to transportation demand management to consider for the long-term

- **Form a city-wide parking commission** This commission would initially focus on downtown and surrounding neighborhoods, but would later broaden its mission to include all areas of the city.

- **Use mode share and public transportation to reduce downtown parking demand.** A consultant will complete a new transit plan for the local transit

system (COMO Connect) in the coming months (procurement is almost complete). Use that project to develop metrics for mode shift away from driving and establish city-wide mode share objectives to ensure an integrated approach to parking and transportation.

- **Public information, marketing and education.** Develop a transportation demand management (TDM) program similar to GO Boulder, as a collaboration
- between the City and University, which provides information and educational resources on travel choices, including walking, bicycling, transit and driving. Develop outreach to ensure that people are aware of multimodal opportunities and have access to transit passes and other resources to encourage a shift in travel away from single occupant vehicles. Develop an employer TDM outreach to work with employers in Columbia (including the university and colleges) to help employees benefit from commute options and choices.

- **Prepare a downtown access and circulation plan.**
  Develop a downtown access and circulation plan (ACP) to address parking and transportation in downtown and the surrounding neighborhoods. The ACP will result in strategies for improving the operations of each mode – pedestrian, bicycle, transit and personal vehicle – and will establish metrics to support ongoing monitoring and reporting of progress toward plan implementation. Data collection in support of performance metrics will be an early part of plan development. The project will evaluate leading edge technological solutions and tools for parking, transit and traffic management. The plan will address long-term vehicle storage needs (overnight/multi-day parking) to free up short-term parking for access to downtown businesses. The project will be coordinated with the Planning and Zoning Commission, the Bicycle/Pedestrian Commission and the new Parking Commission (see a above) to ensure broad awareness of the emerging plan and strong community buy-in and support for implementation.

Which critical issues and related parking management issues are:
Immediate
Mid Range
Long Range

*The sub-committee will need to focus on the immediate critical issues first.

[1]The Mixed Use-Neighborhood district is intended to provide commercial shopping and service facilities in or near a residential neighborhood. The principal land use is a small shopping area with sales and

services oriented to the needs of a local population. The district is intended to accommodate both pedestrian-
oriented shopping areas with walkable connections to surrounding neighborhoods and small auto-oriented shopping centers convenient to lower density residential areas, through the use of two different sets of development standards. The principal uses are small-scale commercial and residential, as shown in Table 29-3.1 (Permitted Use Table). --DRAFT Columbia Development Code Module
3 Base Zoning Districts: 29-2.2

[2]An urban village is a medium-density development that includes mixed-use residential and commercial property, good public transit, and pedestrian-oriented urban design. In urban villages, everything you need is within walking distance (e.g. grocery stores, services, entertainment, and restaurants), including public squares to relax and meet people. These urban villages are a contrast to auto-centric, fringe development.
--Columbia Imagined, p. 123.

[3]The Neighborhood Marketplace provides for the sale of day-to-day needs and should be built around a primary tenant. The Neighborhood Marketplace should be between 30,000 and 100,000 square feet of gross leasable area and contain a mix of retail and office uses. Ideally, the primary tenant would be a grocery store containing approximately 40,000 square feet of retail space. Other services may include small office
uses, sit-down restaurants, specialty retail uses and service station/car wash, along with high density multi-family residential. --Metro 2020: 4.8 Neighborhood Marketplace.

Appendix O

Staff Meter Hood Report

Certain contractors, businesses, and service agencies may exhibit a need to park in, or otherwise utilize, a parking space for an extended length of time beyond that which is permissible when feeding a meter. For this reason, City ordinance 14-424 allows for the temporary issuance of meter hoods, which cover the meter itself and essentially renders the parking space as reserved for a certain individual or entity.

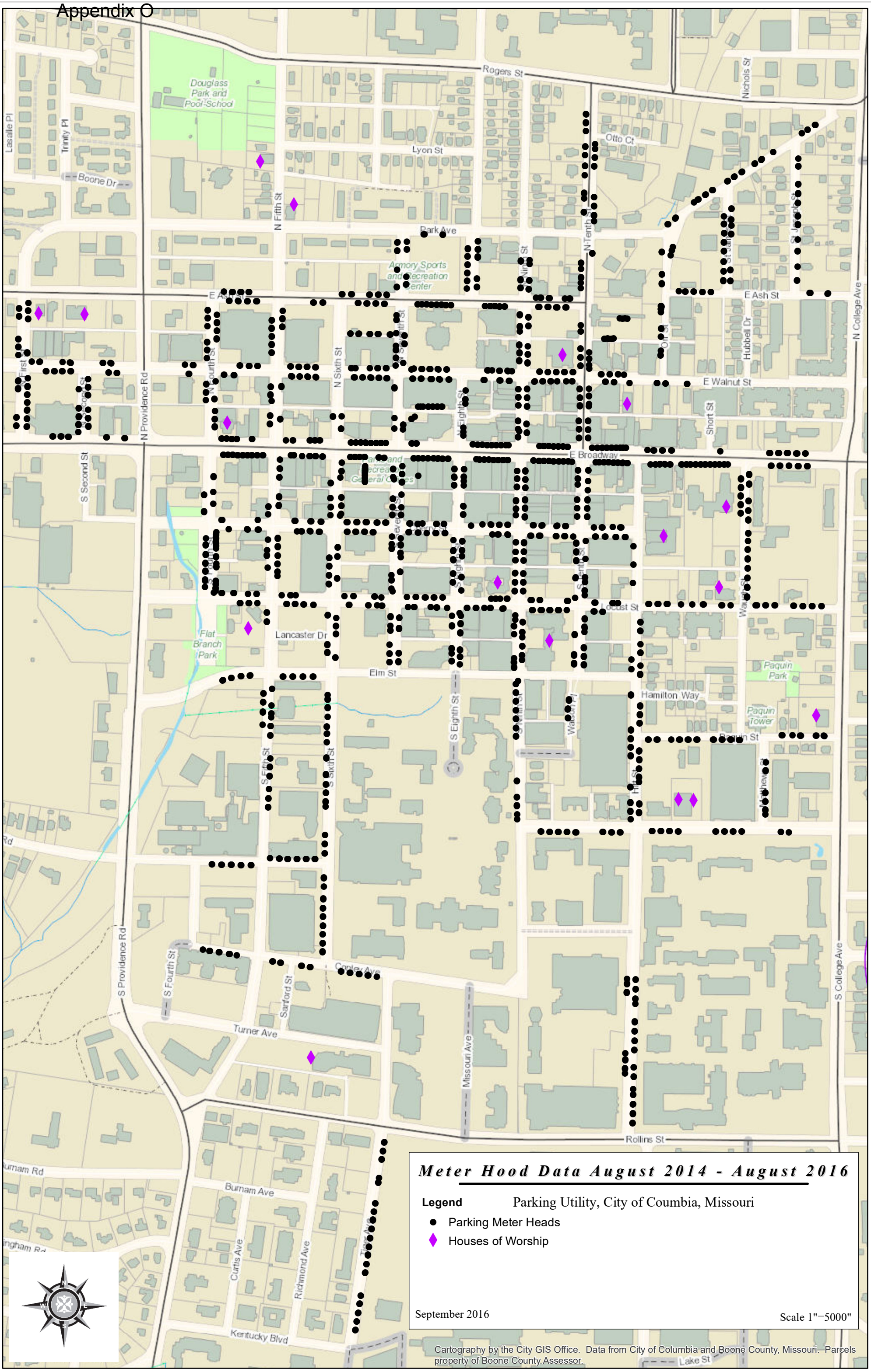
In lieu of paying the parking meter, such individual or entity will pay the City of Columbia Public Works Department a fee of $10 per day for the use of the hood. Public Works issues two types of meter hoods: plastic, which are generally for events lasting 48 hours or less, and cloth, for events over 48 hours. Each applicant for a meter hood must first fill out an application at the City's website or in person at the Public Works Department. The application is carefully analyzed before a decision to grant or deny the meter hood is rendered by the Parking Supervisor, usually within 24 hours of the submittal of the application. Once the application is either approved or denied, Public Works staff will notify the applicant of the decision. If an applicant is granted approval, he/she must make a payment and leave a deposit (if requiring a cloth meter hood) with Public Works before he/she is issued the hood.

Appendix O

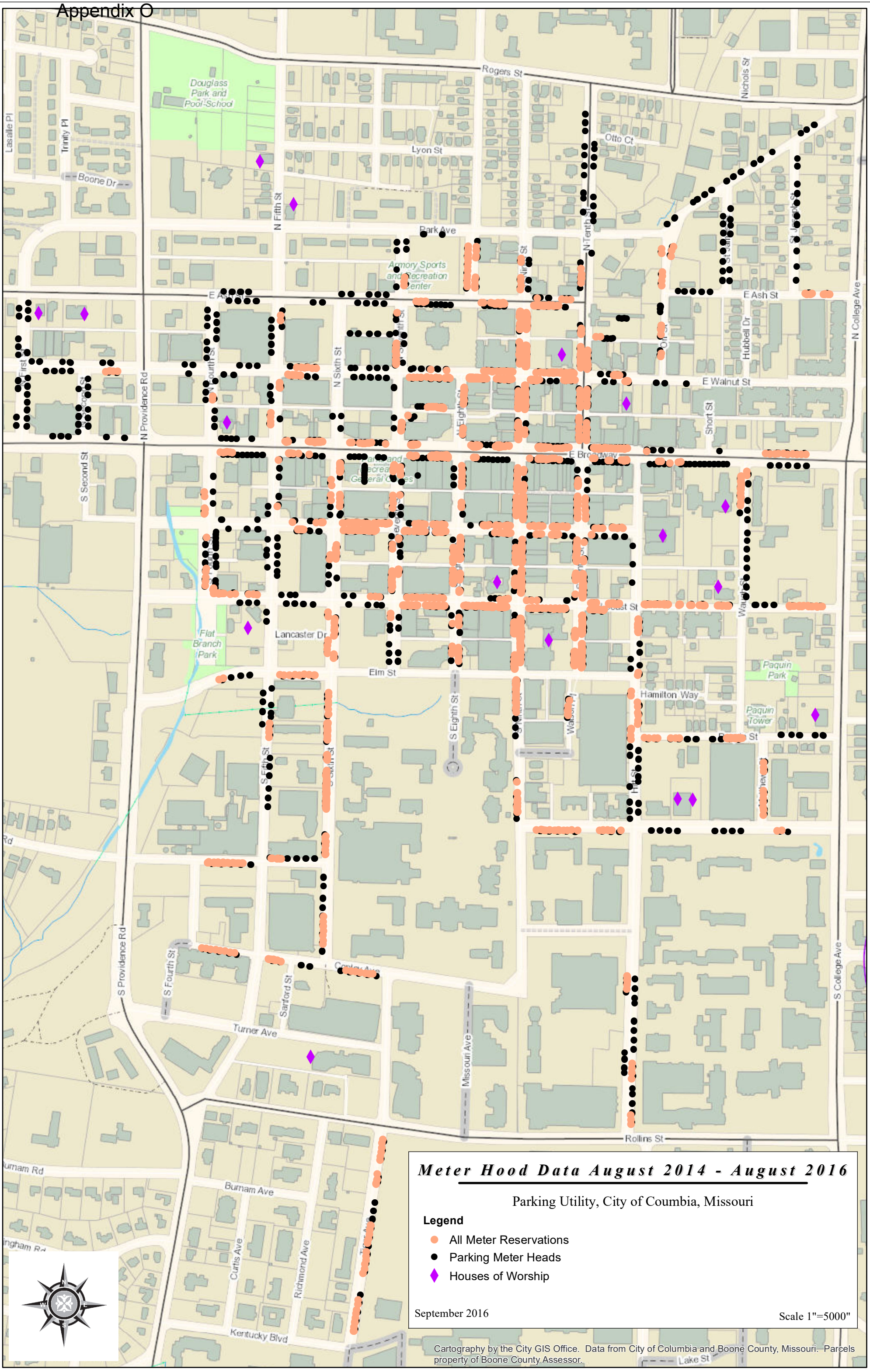
Categorical Analysis of Meter Reservation Uses
August 2014 - August 2016

Category	Frequency	Percent of Total
Event Parking	509	15%
Concert Parking	420	12%
Vehicles	351	10%
Move In/out	312	9%
Banners and Lighting	311	9%
Construction	168	5%
City Utilities	142	4%
Miscellaneous Parking	142	4%
Trees and Stumps	129	4%
Special Event or Occasion	110	3%
Equipment	82	2%
Loading/Unloading busses	75	2%
Lane shift/resriction/closure	75	2%
City Maintenance	71	2%
Dumpsters	60	2%
Elections	58	2%
Roofing	49	1%
Other	46	1%
Centurylink	44	1%
Windows and Cleaning	42	1%
True/False	41	1%
Renovations and Remodeling	41	1%
Sidewalks	39	1%
Wedding	36	1%
College	27	1%
Parklet	19	1%
Churches	9	0%
TOTAL	3408	100%

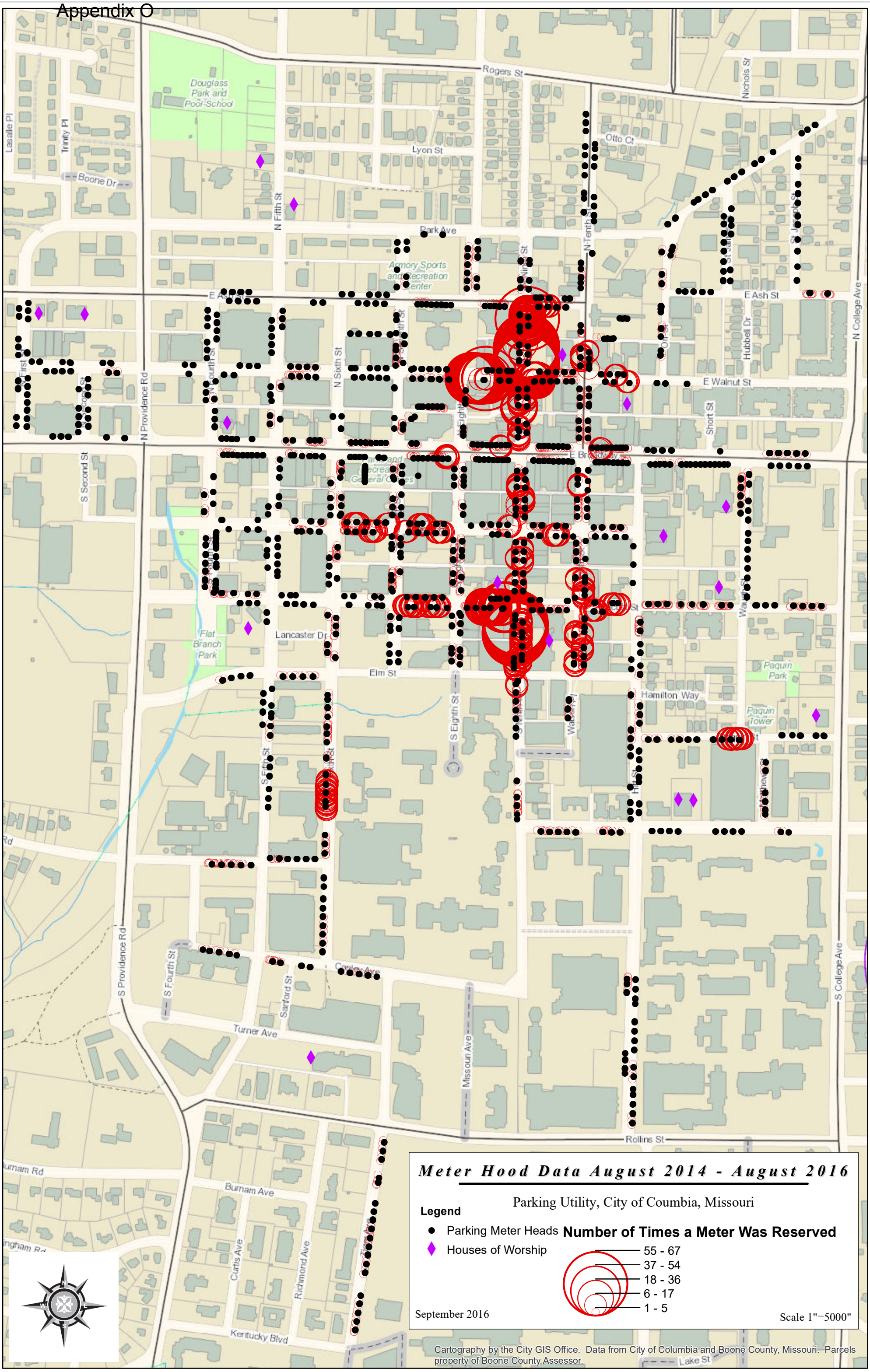
Appendix O


Meter Hood Data August 2014 - August 2016
Legend
Parking Utility, City of Coumbia, Missouri
Parking Meter Heads
Houses of Worship
September 2016
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lasalle Pl
Trinity Pl
Boone Dr
Lyon St
Otto Ct
N Fifth St
Park Ave
Armory Sports and Recreation Center
N Tenth St
St James St
St Joseph St
E Ash St
N College Ave
Hubbell Dr
Orr St
E Walnut St
Short St
N First St
N Providence Rd
N Fourth St
N Sixth St
N Eighth St
E Broadway
S Second St
Flat Branch Park
Lancaster Dr
Locust St
Walnut St
Elm St
Paquin Park
Hamilton Way
Paquin Tower
Paquin St
S Eighth St
S Fifth St
S Sixth St
Hitt St
Matthews St
S Providence Rd
S Fourth St
Sanford St
Conley Ave
Turner Ave
Missouri Ave
S College Ave
Rollins St
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

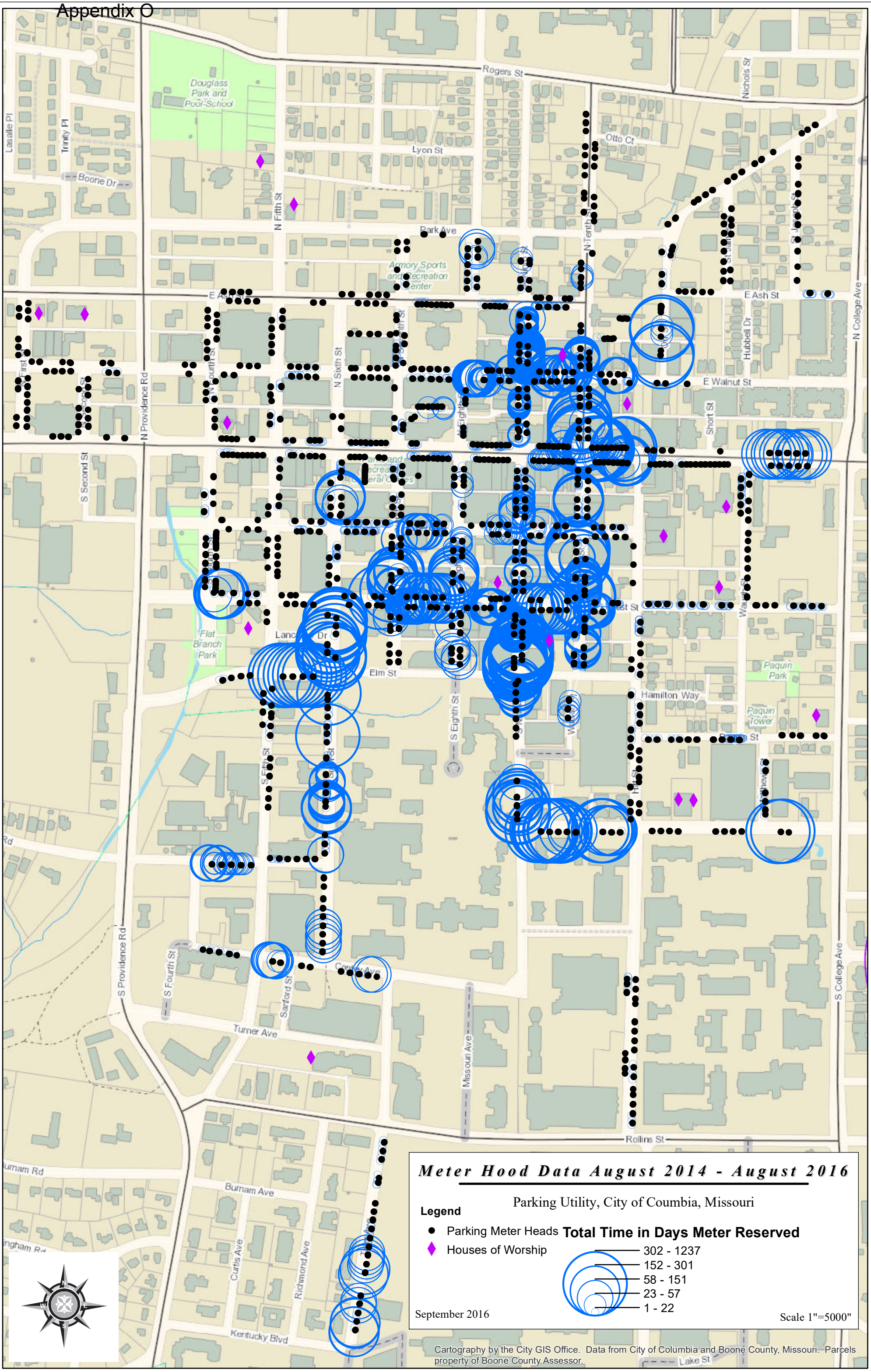
Appendix O


Meter Hood Data August 2014 - August 2016
Parking Utility, City of Coumbia, Missouri
Legend
All Meter Reservations
Parking Meter Heads
Houses of Worship
September 2016
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lasalle Pl
Trinity Pl
Boone Dr
Lyon St
Otto Ct
Nichols St
N Fifth St
Park Ave
Armory Sports and Recreation Center
N Tenth St
St James St
St Joseph St
E Ash St
N College Ave
Hubbell Dr
N First St
N Providence Rd
N Fourth St
N Sixth St
N Eighth St
Ott St
E Walnut St
Short St
E Broadway
S Second St
General Offices
Flat Branch Park
Lancaster Dr
Elm St
S Eighth St
Hamilton Way
Paquin Park
Paquin Tower
Walnut St
S Fifth St
S Sixth St
S Providence Rd
S Fourth St
Sanford St
Conley Ave
Turner Ave
Missouri Ave
S College Ave
Rollins St
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

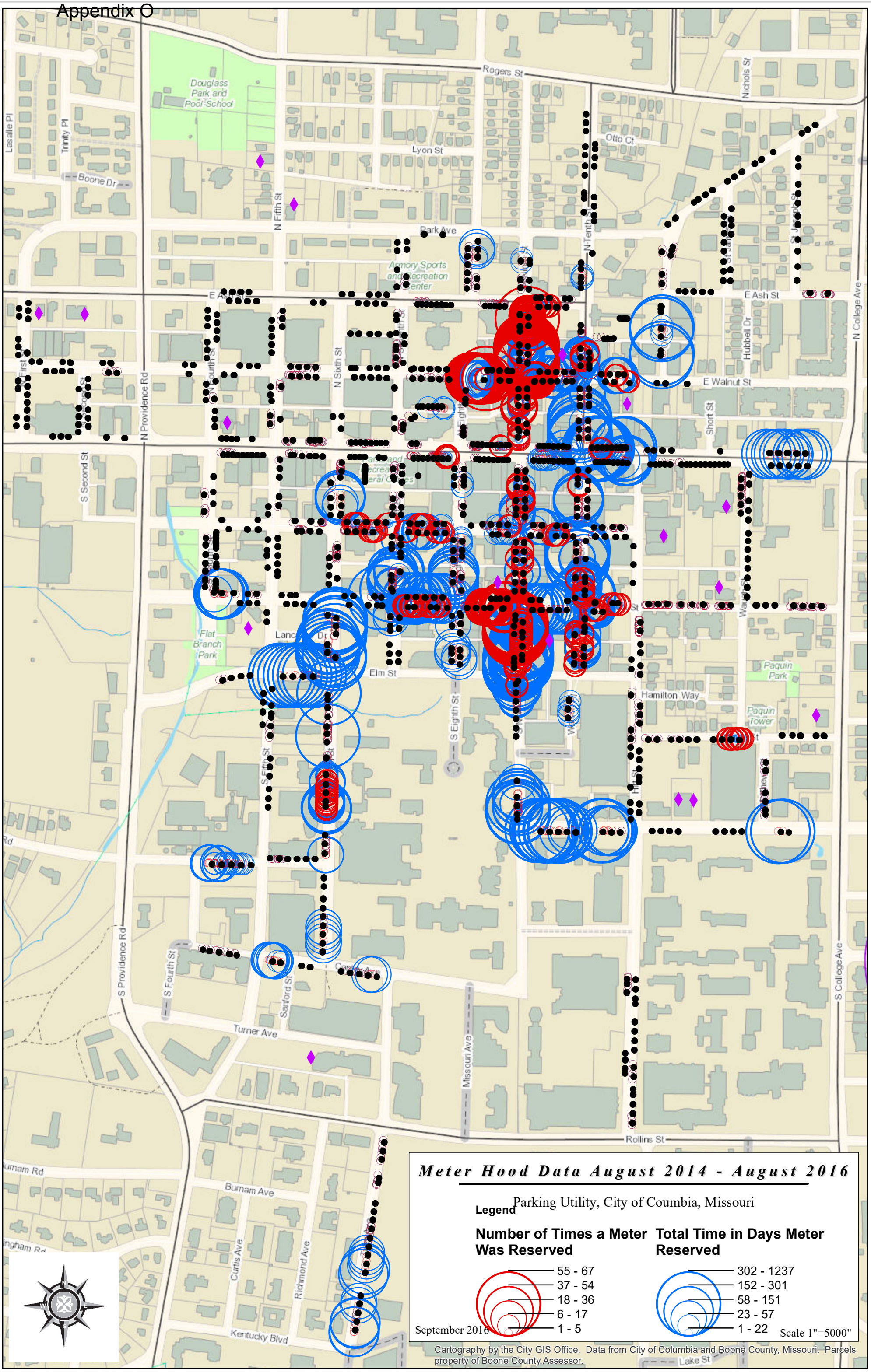
Appendix O


Meter Hood Data August 2014 - August 2016
Parking Utility, City of Coumbia, Missouri
Legend
Parking Meter Heads
Houses of Worship
Number of Times a Meter Was Reserved
55 - 67
37 - 54
18 - 36
6 - 17
1 - 5
September 2016
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Douglass Park and Pool-School
Armory Sports and Recreation Center
Flat Branch Park
Paquin Park
Paquin Tower
Rogers St
Lyon St
Park Ave
E Ash St
E Walnut St
E Broadway
Elm St
Hamilton Way
Lancaster Dr
Turner Ave
Rollins St
Burnam Ave
Kentucky Blvd
Boone Dr
Otto Ct
Hubbell Dr
Short St
Nichols St
St Joseph St
N College Ave
S College Ave
N Providence Rd
S Providence Rd
N First St
N Second St
S Second St
N Fourth St
S Fourth St
N Fifth St
S Fifth St
N Sixth St
N Seventh St
S Seventh St
N Eighth St
S Eighth St
N Tenth St
Lasalle Pl
Trinity Pl
Sanford St
Missouri Ave
Curtis Ave
Richmond Ave
Wabash St
Hill St
Walsh Pl
Burnam Rd

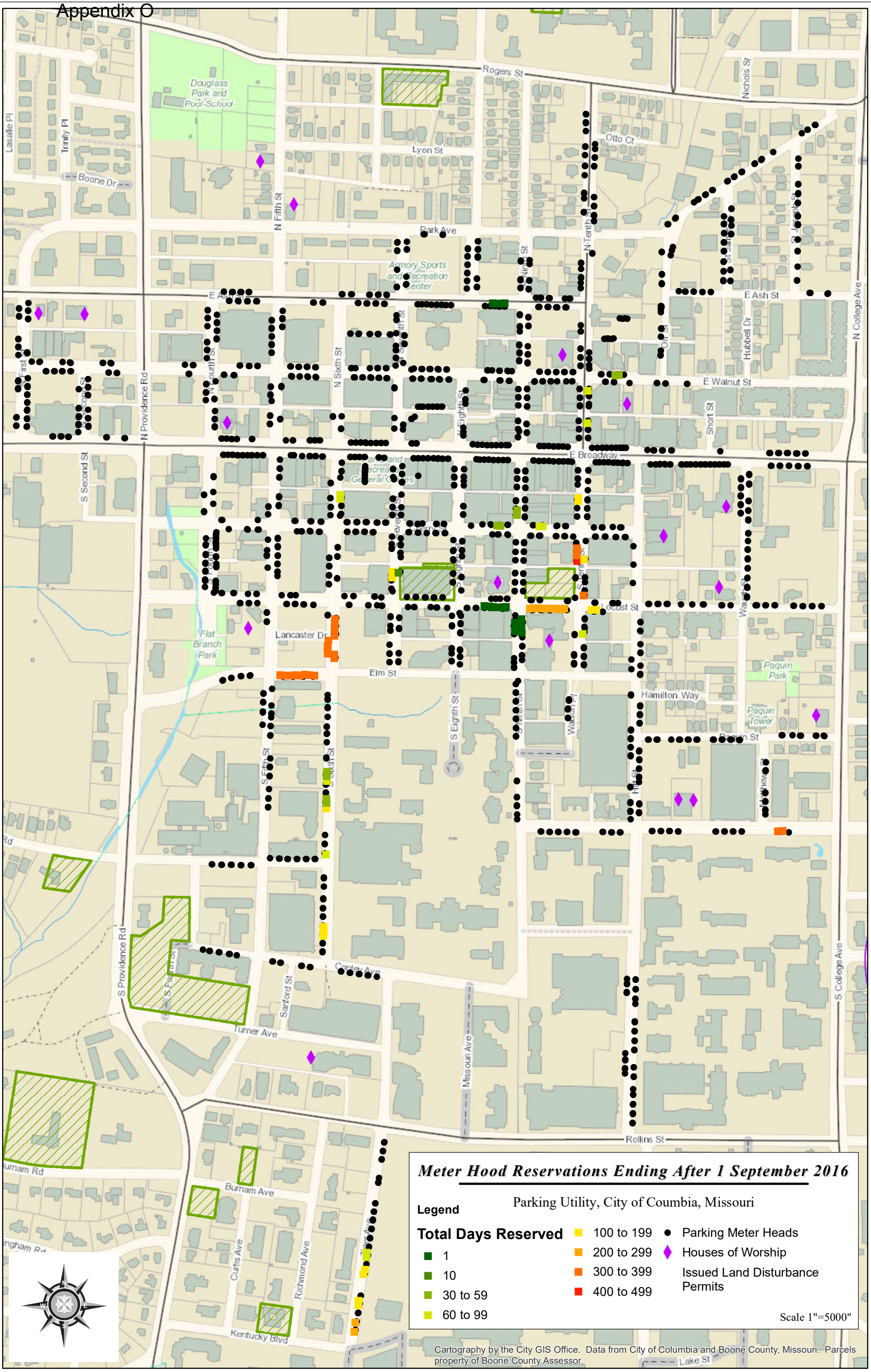
Appendix O


Meter Hood Data August 2014 - August 2016
Parking Utility, City of Coumbia, Missouri
Legend
Parking Meter Heads
Houses of Worship
Total Time in Days Meter Reserved
302 - 1237
152 - 301
58 - 151
23 - 57
1 - 22
September 2016
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lyon St
Otto Ct
Nichols St
Lasalle Pl
Trinity Pl
Boone Dr
N Fifth St
Park Ave
Armory Sports and Recreation Center
N Tenth St
St James St
St Joseph St
E Ash St
Hubbell Dr
N College Ave
E Walnut St
N First St
N Providence Rd
N Fourth St
N Sixth St
Short St
S Second St
Flat Branch Park
Elm St
S Eighth St
Hamilton Way
Paquin Park
Paquin Tower
Wardell St
S Fifth St
S Providence Rd
S Fourth St
Sanford St
Turner Ave
Missouri Ave
S College Ave
Rollins St
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

Appendix O


Meter Hood Data August 2014 - August 2016
Parking Utility, City of Coumbia, Missouri
Legend
Number of Times a Meter Was Reserved
55 - 67
37 - 54
18 - 36
6 - 17
1 - 5
Total Time in Days Meter Reserved
302 - 1237
152 - 301
58 - 151
23 - 57
1 - 22
September 2016
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lasalle Pl
Trinity Pl
Boone Dr
Lyon St
Otto Ct
Nichols St
N Fifth St
Park Ave
Armory Sports and Recreation Center
N Tenth St
St James St
St Joseph St
E Ash St
Hubbell Dr
N College Ave
E Walnut St
N First St
N Providence Rd
N Fourth St
N Sixth St
Short St
S Second St
Flat Branch Park
Elm St
S Eighth St
Hamilton Way
Paquin Park
Paquin Tower
S Fifth St
S Providence Rd
S Fourth St
Sanford St
Turner Ave
Missouri Ave
S College Ave
Rollins St
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

Appendix O


Meter Hood Reservations Ending After 1 September 2016
Parking Utility, City of Coumbia, Missouri
Legend
Total Days Reserved
1
10
30 to 59
60 to 99
100 to 199
200 to 299
300 to 399
400 to 499
Parking Meter Heads
Houses of Worship
Issued Land Disturbance Permits
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lyon St
Otto Ct
Nichols St
Lasalle Pl
Trinity Pl
Boone Dr
N Fifth St
Park Ave
Armory Sports and Recreation Center
N Tenth St
St James St
St Joseph St
E Ash St
N College Ave
Hubbell Dr
Orr St
E Walnut St
Short St
N First St
N Providence Rd
N Fourth St
N Sixth St
N Eighth St
E Broadway
S Second St
Flat Branch Park
Lancaster Dr
Locust St
Walnut St
Elm St
S Eighth St
Hamilton Way
Paquin Park
Paquin Tower
Paquin St
S Fifth St
S Sixth St
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Matthews St
S Providence Rd
S Fourth St
Cortex Ave
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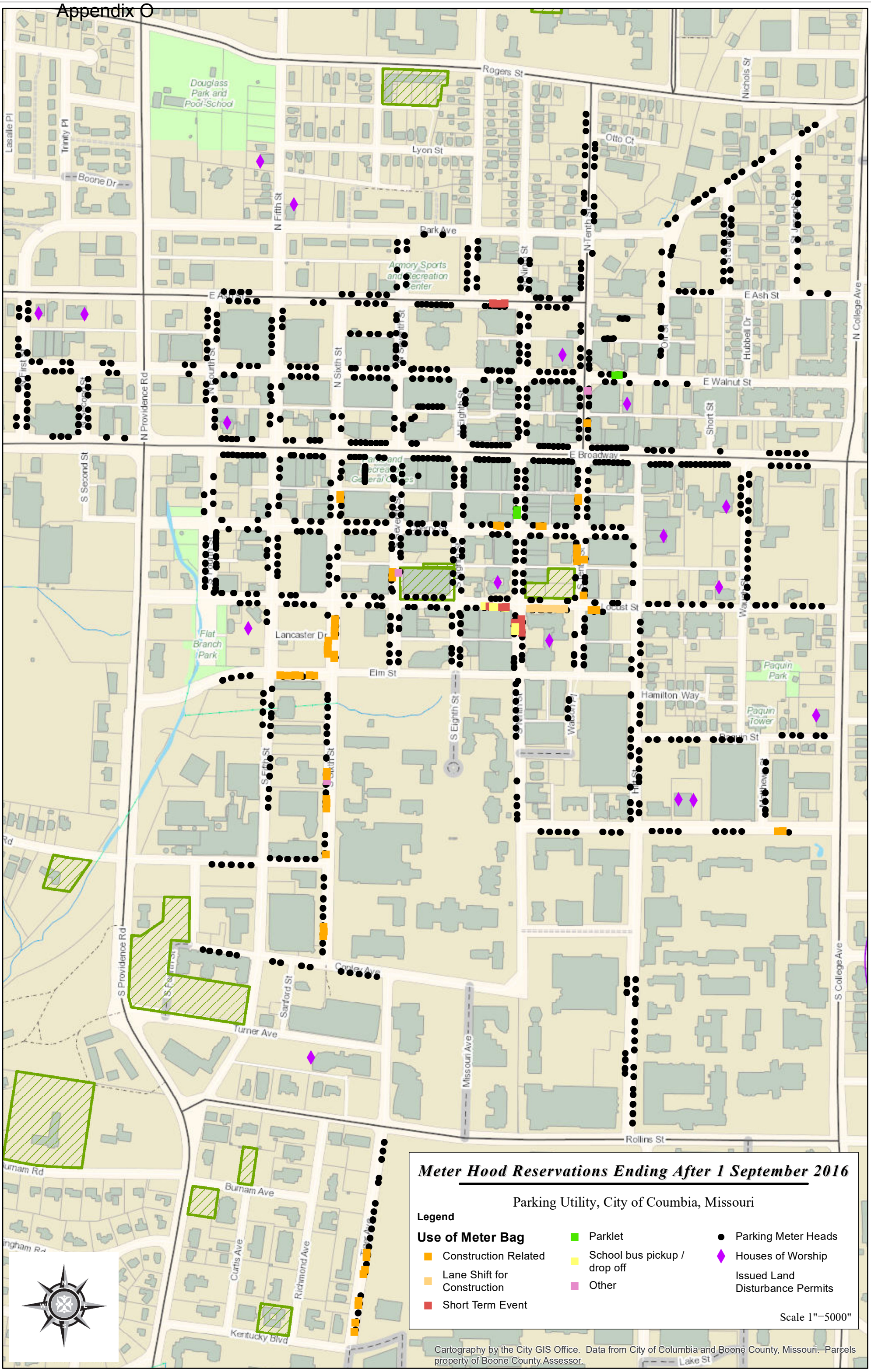
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

Appendix O


Meter Hood Reservations Ending After 1 September 2016
Parking Utility, City of Coumbia, Missouri
Legend
Use of Meter Bag
Construction Related
Lane Shift for Construction
Short Term Event
Parklet
School bus pickup / drop off
Other
Parking Meter Heads
Houses of Worship
Issued Land Disturbance Permits
Scale 1"=5000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
Rogers St
Douglass Park and Pool-School
Lyon St
Otto Ct
Boone Dr
N Fifth St
Park Ave
Armory Sports and Recreation Center
E Ash St
E Walnut St
E Broadway
N Tenth St
N College Ave
N Providence Rd
N Sixth St
N Eighth St
Short St
Hubbell Dr
S Second St
Locust St
Lancaster Dr
Flat Branch Park
Elm St
S Eighth St
Hamilton Way
Paquin Park
Paquin Tower
Paquin St
S Fifth St
S Sixth St
S Providence Rd
Conley Ave
Sanford St
Turner Ave
Missouri Ave
S College Ave
Rollins St
Burnam Ave
Curtis Ave
Richmond Ave
Kentucky Blvd
Lake St

Appendix O

- **Sec. 14-423. - Parking meter hoods—Generally.**

  The city traffic engineer is authorized to place parking meter hoods on any parking meters in the parking meter district when such parking meters are not to be used and parking is to be prohibited on the street because of emergency or other reason, as provided in this chapter. When such parking meter hoods are in place, it shall be unlawful for any vehicle to be parked in the parking meter space.

(Code 1964, § 12.755)

- **Sec. 14-424. - Same—Special hoods.**

  (a)

  The city manager may authorize the issuance of marked parking meter hoods to the following persons at the rates stated herein, which shall be in lieu of meter charges:

  (1)

  Contractors and service agencies, who exhibit a need to park vehicles at specific meter locations in order to perform their work—Ten dollars ($10.00) per day.

  (2)

  Private utilities companies, for the parking of service vehicles identifiable as such by color or signs—Ten dollars ($10.00) per day.

  (3)

  Churches and any business that establishes a business-related need for the issuance of such hoods—Ten dollars ($10.00) per day.

  (4)

  Handicapped persons, who establish an employment need for the issuance of such hood and who either are nonambulatory or who present a physician's certificate of need with respect to their handicap—Two dollars and fifty cents ($2.50) per day or fifty dollars ($50.00) per month.

  (b)

  The city manager may, by regulations, impose conditions and limitations upon the issuance and use of such hoods. The city manager may also withdraw or revoke hoods issued hereunder, provided that any prepayments are refunded pro rata.

  (c)

  The city manager shall have the authority to issue annual and/or monthly parking hoods to service agencies, private utility companies, theater operators and funeral home operators who establish a reasonably definite basis of estimating their annual use of such hoods. The minimum fee for issuance of annual hoods shall be sixty cents ($0.60) per estimated hour of usage, provided that the minimum annual hood fee shall be two thousand dollars ($2,000.00) payable in advance. The monthly fee shall be two hundred dollars ($200.00).

  (d)

  The city manager shall have the authority to issue parking hoods to the chief of police for the use of volunteer police workers while working in the police building and for use by the municipal court bailiff for duties relating to transporting inmates to and from municipal court. The police department shall pay the parking utility a monthly fee of sixty cents ($0.60) per estimated hour of hood usage.

  (e)

The city manager shall have the authority to issue parking hoods to not-for-profit organizations, without charge, when the city manager determines that waiver of the rental fee is in the public interest and that doing so would contribute to the public awareness of, accessibility to, participation in, and support for the artistic, cultural or charitable development in the city and is not primarily in the commercial interest of the requester.

(Code 1964, § 12.756; Ord. No. 11311, § 1, 12-15-86; Ord. No. 12643, § 1, 6-18-90; Ord. No. 15518, § 1, 2-16-98; Ord. No. 16523, § 1, 8-7-00; Ord. No. 20986, § 1, 6-20-11; Ord. No. 21309, § 1, 5-7-12; Ord. No.22573, § 1, 9-21-15, eff. 1-1-16)

- **Sec. 14-425. - Use of revenue.**

All sums collected from the use of parking meters shall be paid to the parking facilities revenue account.

(Code 1964, § 12.760)

- **Sec. 14-426. - Violations.**

(a)

Every person convicted of a violation of any of the provisions of this division shall be punished as provided in section 1-8 of this Code, except that a fine shall not be less than fifteen dollars ($15.00) if paid within fifteen (15) days of the violation and not less than thirty dollars ($30.00) if paid more than fifteen (15) days after the violation.

(b)

Each hour that a violation of this division continues is a separate offense.

(Ord. No. 14882 § 1, 6-17-96; Ord. No. 19250, § 1, 10-2-06; Ord. No. 20869, § 1, 2-7-11; Ord. No. 22210, § 1, 9-15-14)

Appendix O

APPROVED: _____

DATE: _____

CITY OF COLUMBIA, MO
PUBLIC WORKS DEPARTMENT
PARKING UTILITY

Telephone: 573-874-2489 Fax: 573-874-7132 www.GoColumbiaMo.com/PublicWorks/Parking

CLOTH COVERS

(For all construction projects and all events over 48 hours)

GENERAL INFORMATION:

1. **A deposit of twenty-five dollars ($25.00) is required for each meter cover.** The deposit will not be returned if the meter cover is not returned, e.g. lost, stolen or for any reason, to the Public Works Department. Meter covers must be padlocked to the meter by the renter. **If the meter cover is lost or stolen, report it immediately to the Public Works Department at 573-874-2489, as the daily charge continues until the cover is returned or the loss or theft is reported. If replacement meter cover(s) are required, an additional $25.00 deposit per cover is assessed.**
2. There is a charge of ten dollars ($10.00) for a single meter cover or twenty dollars ($20.00) for a double meter cover PER DAY. There is a one-day minimum charge. A monthly rate of two hundred dollars ($200.00) per space, and an annual meter hood rate of two thousand dollars ($2,000.00) are also available.
3. YOU MUST COME TO THE PUBLIC WORKS DEPARTMENT OFFICE AT 701 E. BROADWAY, 3RD FLOOR, BY NOON OF THE NEXT CITY BUSINESS DAY TO RETURN THE METER COVER(S), OR YOU WILL BE CHARGED FOR ANOTHER FULL DAY'S USE. PARKING ENFORCEMENT CANNOT ACCEPT METER COVER DEPOSITS OR RENTAL FEES.
4. Parking is enforced from 9:00 AM through 7:00 PM (Monday - Saturday) except for City-recognized holidays. **Renter is charged for EVERY APPLICABLE DAY THAT THE COVER(S) ARE OUT, not just the days that the renter plans to (or actually did) use the covers.**
5. Covers must be attached to meter at least four (4) hours in advance for 4 hr or less meters, 5 hours in advance for 5 hr meters, and 10 hours in advance for 10 hr meters, before Public Works can enforce. **Please contact 573-874-2489 to advise when covers are in place**. Office hours are 9:00 AM to 7:00 PM Monday thru Saturday. Please leave a voice mail message.

******PLEASE SUBMIT APPLICATION FOR METER COVERS A MINIMUM OF 24 HOURS BEFORE NEEDED.******

Name of Applicant _____ Date _____

Address _____ Telephone _____

Dates covers will be in use _____ Number of spaces requested _____

Attention Contractors: These covers are only to be utilized by construction vehicles, with legitimate requirements for continuous access to the construction site. This is defined as a commercial vehicle with permanent signs identifying the construction company, or a truck containing tools or materials, which is obviously being utilized throughout the work day. A passenger vehicle (sedan) or empty pickup truck will not be considered as one requiring construction vehicle parking privileges. Any vehicle, other than those defined in this manner, will be subject to penalty for parking in a no parking zone even if it belongs to a member of the construction crew.

*****FOLLOWING INFORMATION IS REQUIRED *OR COVERS WILL NOT BE APPROVED*******

****PLEASE SPECIFY EXACT LOCATION & VERY SPECIFIC USE OF COVERS (i.e. parking trailer/truck, dumpster, etc)***

***MUST OBTAIN SIGNATURES FROM BUSINESS OWNERS IF SPACES WILL AFFECT OTHERS BUSINESSES**

_____

_____

METER NUMBERS:

_____

□ DAILY RATE □ MONTHLY RATE □ ANNUAL RATE

I have read and understand the policies stated above:

Signed: _____

Printed: _____

OFFICE USE

Date & Time Cover(s) Issued		Date & Time Cover(s) Returned	
First Day to be Charged		Received by	
Amount of Deposit	$	Rental Charge	$
Cash or Check #		Billed or Paid	
List number(s) on meter cover(s):			

Appendix O

Appendix O

APPROVED: _____

DATE: _____

CITY OF COLUMBIA, MO
PUBLIC WORKS DEPARTMENT
PARKING UTILITY

Telephone: 573-874-2489 Fax: 573-874-7132 www.GoColumbiaMo.com/PublicWorks/Parking

PLASTIC COVERS

(Only for situations known to be less than 48 hours)

General Information:

1. There is a charge of ten dollars ($10.00) for a single meter cover or twenty dollars ($20.00) for a double meter cover per day. There is a one-day minimum charge on all covers issued. All charges must be paid when covers are issued.
2. Plastic covers must be tied on. Money will not be refunded if the meter cover is lost or stolen. You must report it immediately to the Public Works Department at 573-874-2489 to obtain replacement cover(s).
3. Plastic covers will be marked with the company's name and date(s) to be used.
4. Covers need to be attached to meters at least four (4) hours in advance for 4 hr or less meters, 5 hours in advance for 5 hr meters, and 10 hours in advance for 10 hr meters, before Public Works to enforce. Please contact Parking Enforcement at 573-874-2489 to advise when covers are in place. Office hours are 9:00 AM to 7:00 PM Monday thru Saturday. Please leave a voice mail message.
5. Parking is enforced from 9:00 AM through 7:00 PM (Monday - Saturday) except for City recognized Holidays.

APPLICATION FOR PARKING METER COVERS

(Please apply a minimum of 24 hours before covers are needed.)

Name of Applicant _____ Date _____

Address _____ Telephone _____

Dates covers will be in use _____ Number of spaces requested _____

These plastic covers are available for the convenience of the customer. There is no deposit; they must be paid for in advance. They are to be used ONLY in situations where the rental period is positively known to be less than 48 hours. They are not to be used for any construction project.

THE FOLLOWING INFORMATION IS REQUIRED
COVERS WILL NOT BE APPROVED WITHOUT THIS INFORMATION

PLEASE SPECIFY EXACT LOCATION REQUIRED & WHY THE SPECIFIED SPACE(S) MUST BE RESERVED FOR SOLE USE BY APPLICANT (i.e. concert bus parking, off-loading students from school buses, etc.):

_____

_____

METER NUMBERS: _____

I have read and understand the policies stated above:

Signed: _____

Printed: _____

OFFICE USE

Amount Charged $_____ Cash, Credit Card, Check # _____ Issued by: _____

Date & Time Cover(s) Issued: _____ Date(s) To Be Used: _____

Appendix P

Analysis of Surface Area by Three "Downtown" Districts

21 September 2016

Discussion at Parking and Transportation Management Task Force meetings has included questions about the nature of land cover, the amount of surface area, and the amount of surface area used for parking.

Staff have calculated Total Surface Area for three different downtown districts (the proposed UDO M-DT downtown area, the Downtown Community Improvement District, and the Downtown Leadership Council study area) accounting for:

- Area in the right of way
- Area covered by buildings
- Area used for surface lots
- Other

Analysis also breaks down the surface lots category into those operated:

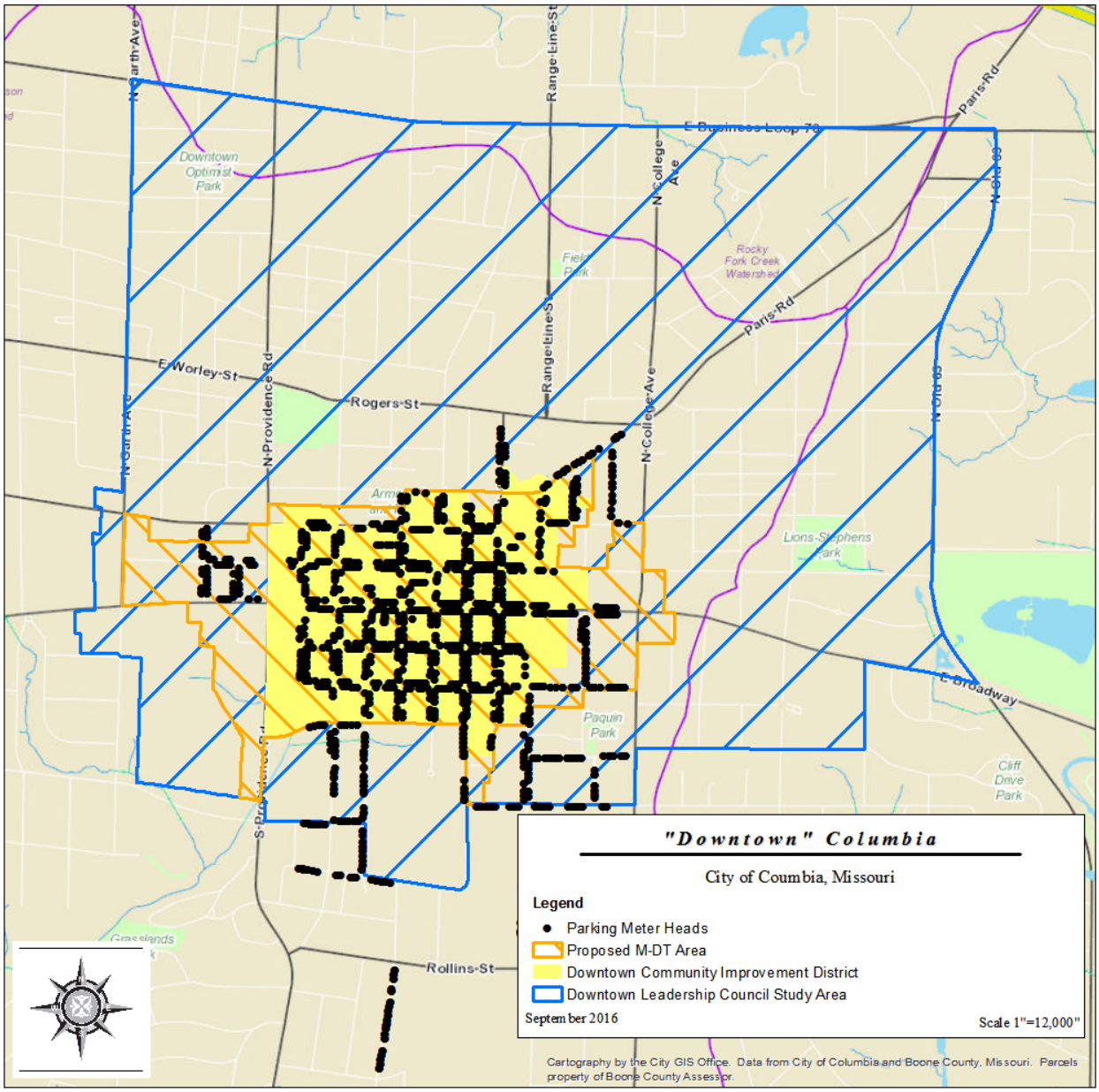
- By the City Parking Utility
- Privately
- By MU

Data was also requested to show the break down of the building category into residential, mixed-use, and commercial. Staff are still working on this portion of the request due to different meanings and uses of "residential" and "commercial" across different data sets commonly used for spatial analysis of this type.

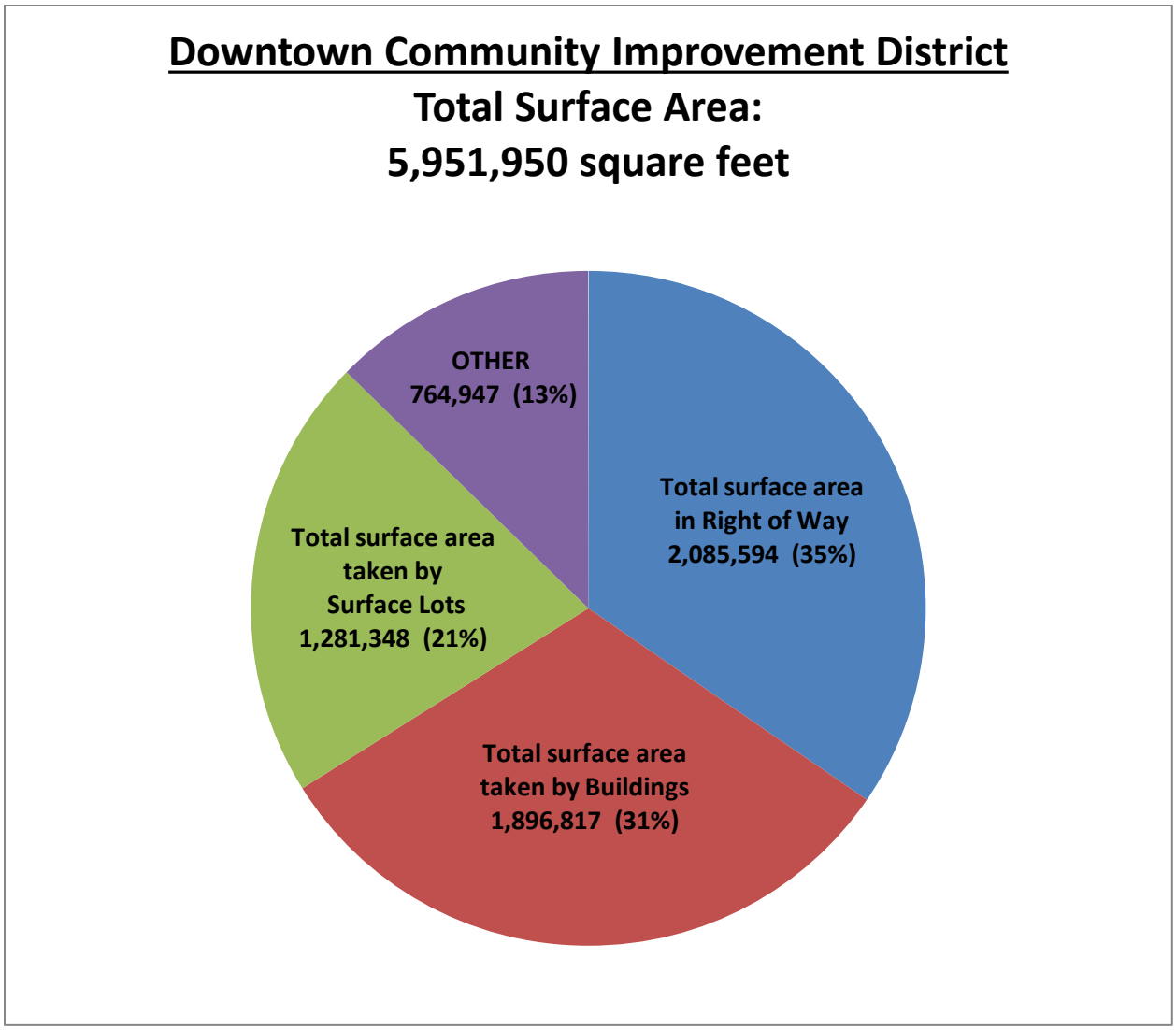
Analysis was conducted by the City Geospatial Information Services Office using the following methods and data:

- 2015 Aerial Orthophoto (Source: Boone County Assessor)
- Parcels (Source: Boone County Assessor)
- Impervious surface map layer (Source: City of Columbia GIS Office)
- Parking map layer (Source: City of Columbia Public Works)
- Parking map layer (Source: University of Missouri Campus Facilities Space Planning and Management)
- Fieldwork

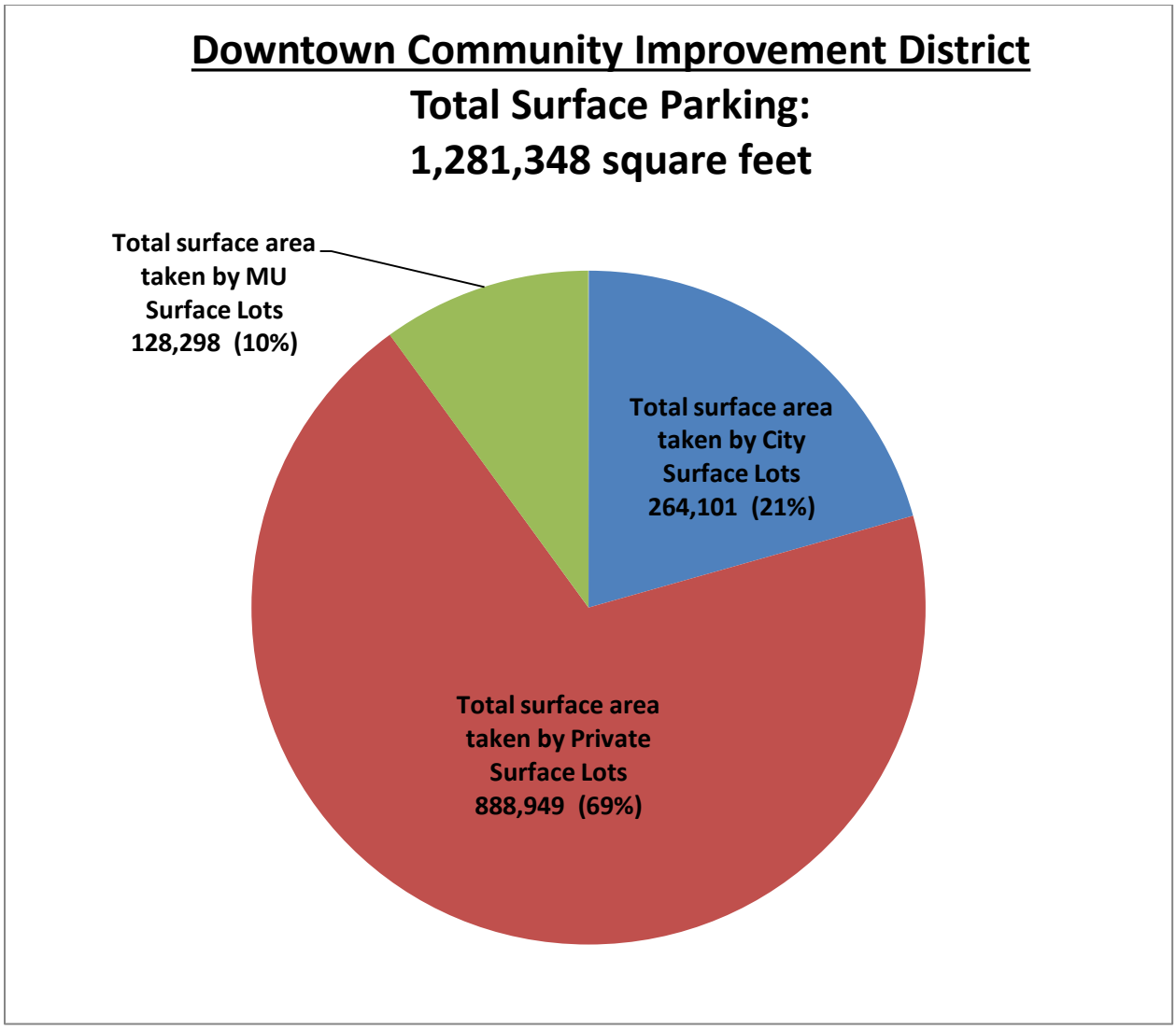
Appendix P


"Downtown" Columbia
City of Coumbia, Missouri
Legend
Parking Meter Heads
Proposed M-DT Area
Downtown Community Improvement District
Downtown Leadership Council Study Area
September 2016
Scale 1"=12,000"
Cartography by the City GIS Office. Data from City of Columbia and Boone County, Missouri. Parcels property of Boone County Assessor.
E Business Loop 70
Paris Rd
N Garth Ave
Range Line St
N College Ave
N Old 63
Downtown Optimist Park
Field Park
Rocky Fork Creek Watershed
E Worley St
Rogers St
N Providence Rd
Lions Stephens Park
E Broadway
Paquin Park
Cliff Drive Park
S Providence Rd
Grasslands
Rollins St

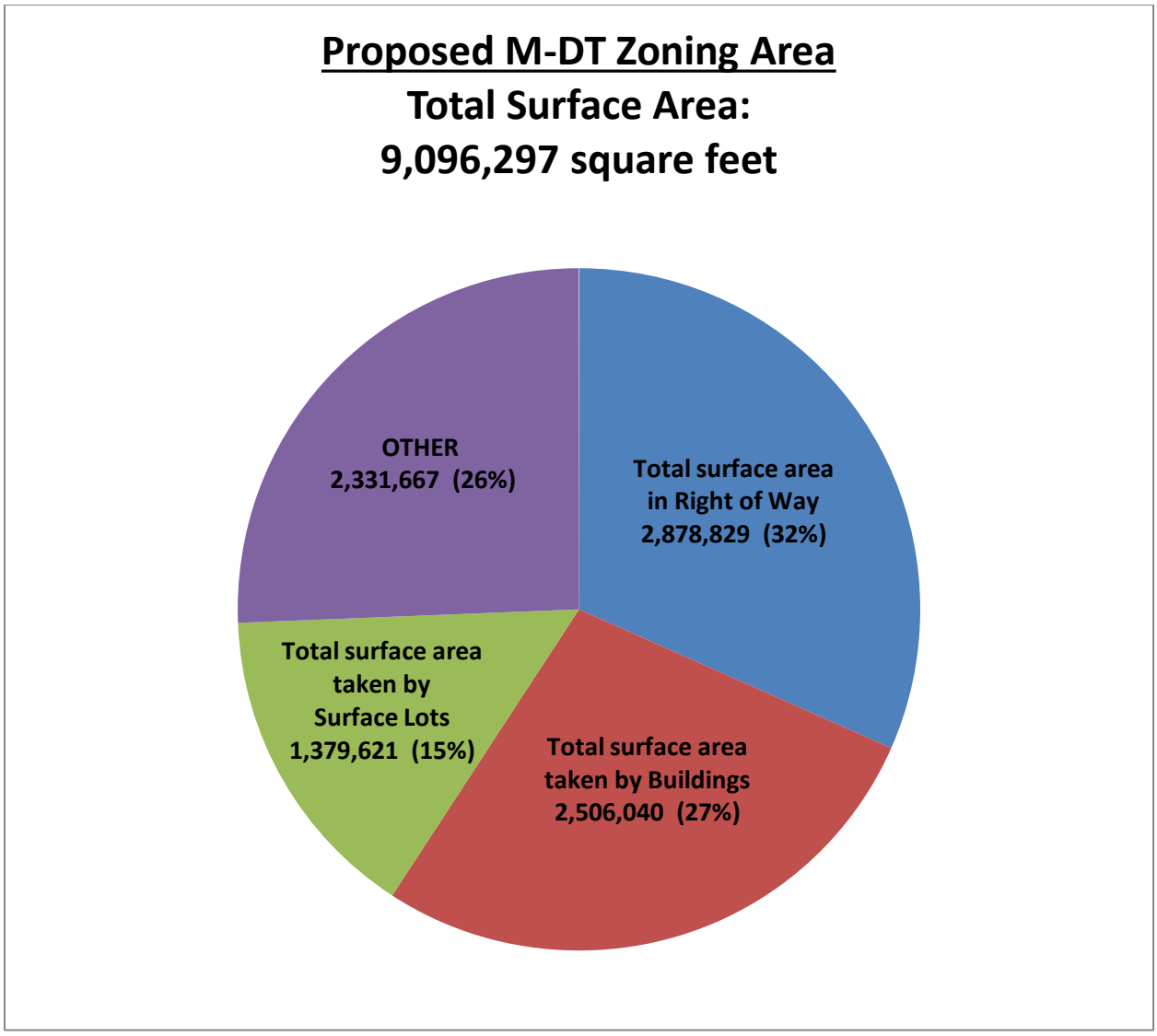
Appendix P


Downtown Community Improvement District
Total Surface Area:
5,951,950 square feet
OTHER
764,947 (13%)
Total surface area
in Right of Way
2,085,594 (35%)
Total surface area
taken by
Surface Lots
1,281,348 (21%)
Total surface area
taken by Buildings
1,896,817 (31%)

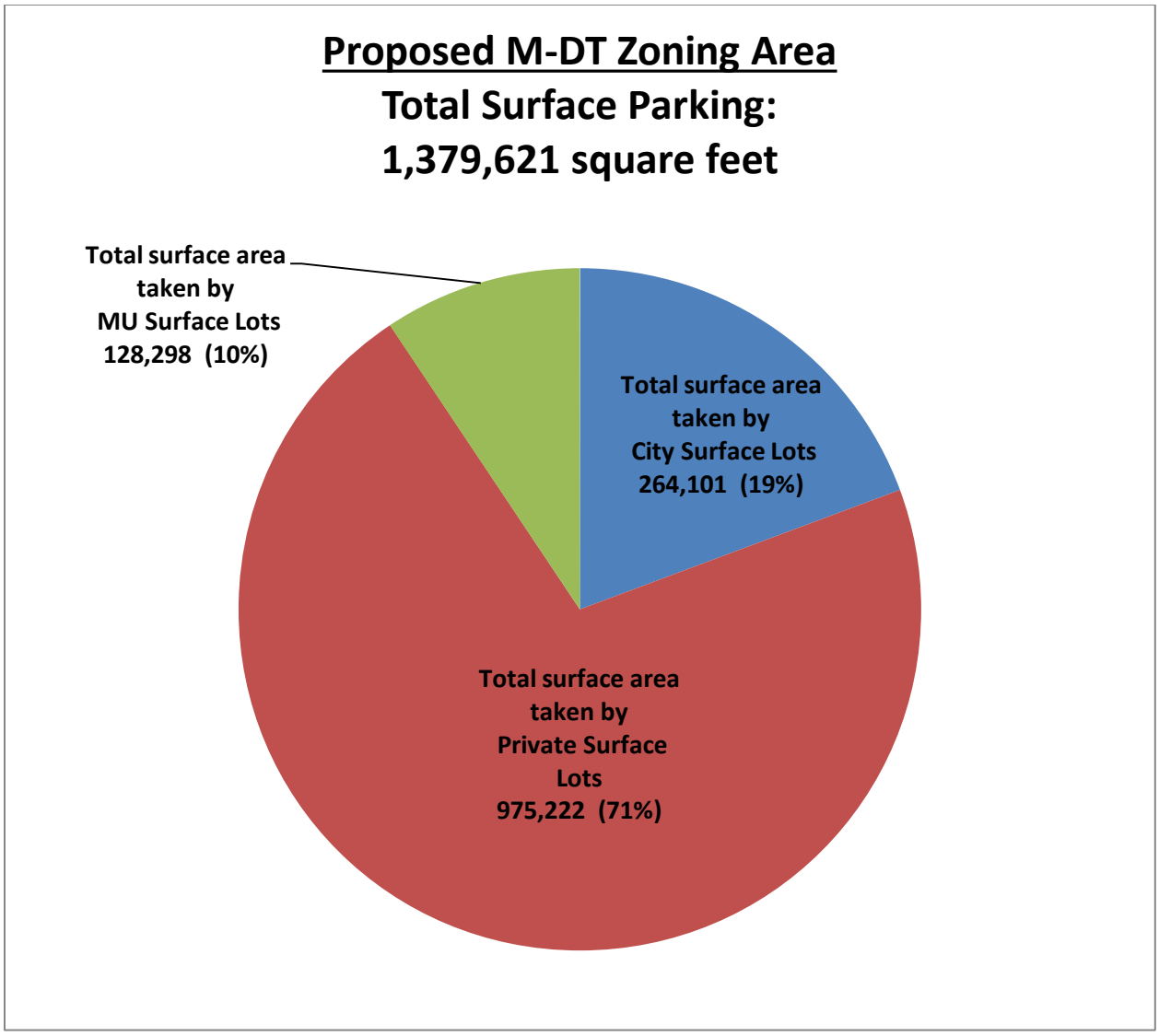
Appendix P


Downtown Community Improvement District
Total Surface Parking:
1,281,348 square feet
Total surface area taken by MU Surface Lots 128,298 (10%)
Total surface area taken by City Surface Lots 264,101 (21%)
Total surface area taken by Private Surface Lots 888,949 (69%)

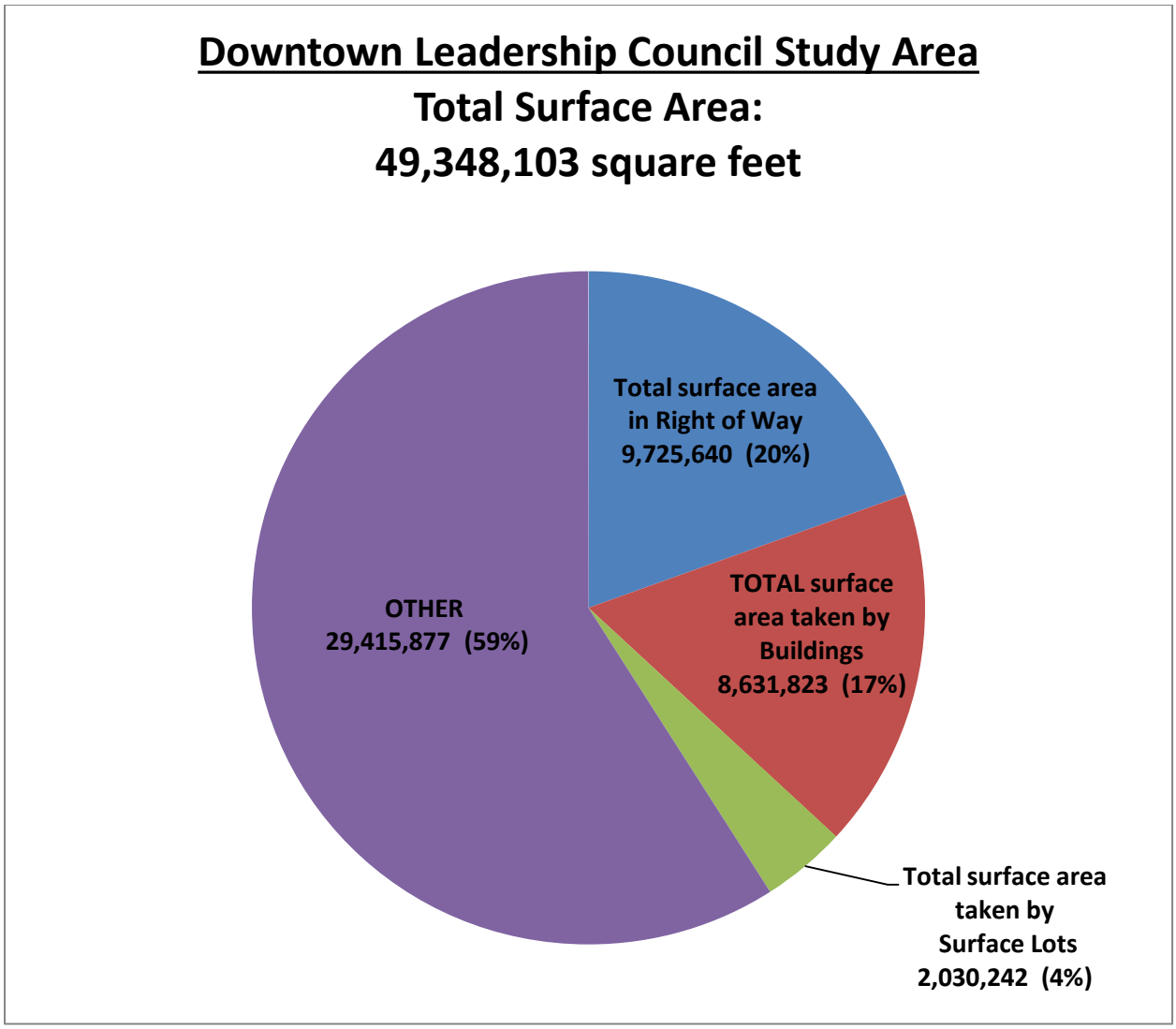
Appendix P


Proposed M-DT Zoning Area
Total Surface Area:
9,096,297 square feet
OTHER
2,331,667 (26%)
Total surface area
in Right of Way
2,878,829 (32%)
Total surface area
taken by
Surface Lots
1,379,621 (15%)
Total surface area
taken by Buildings
2,506,040 (27%)

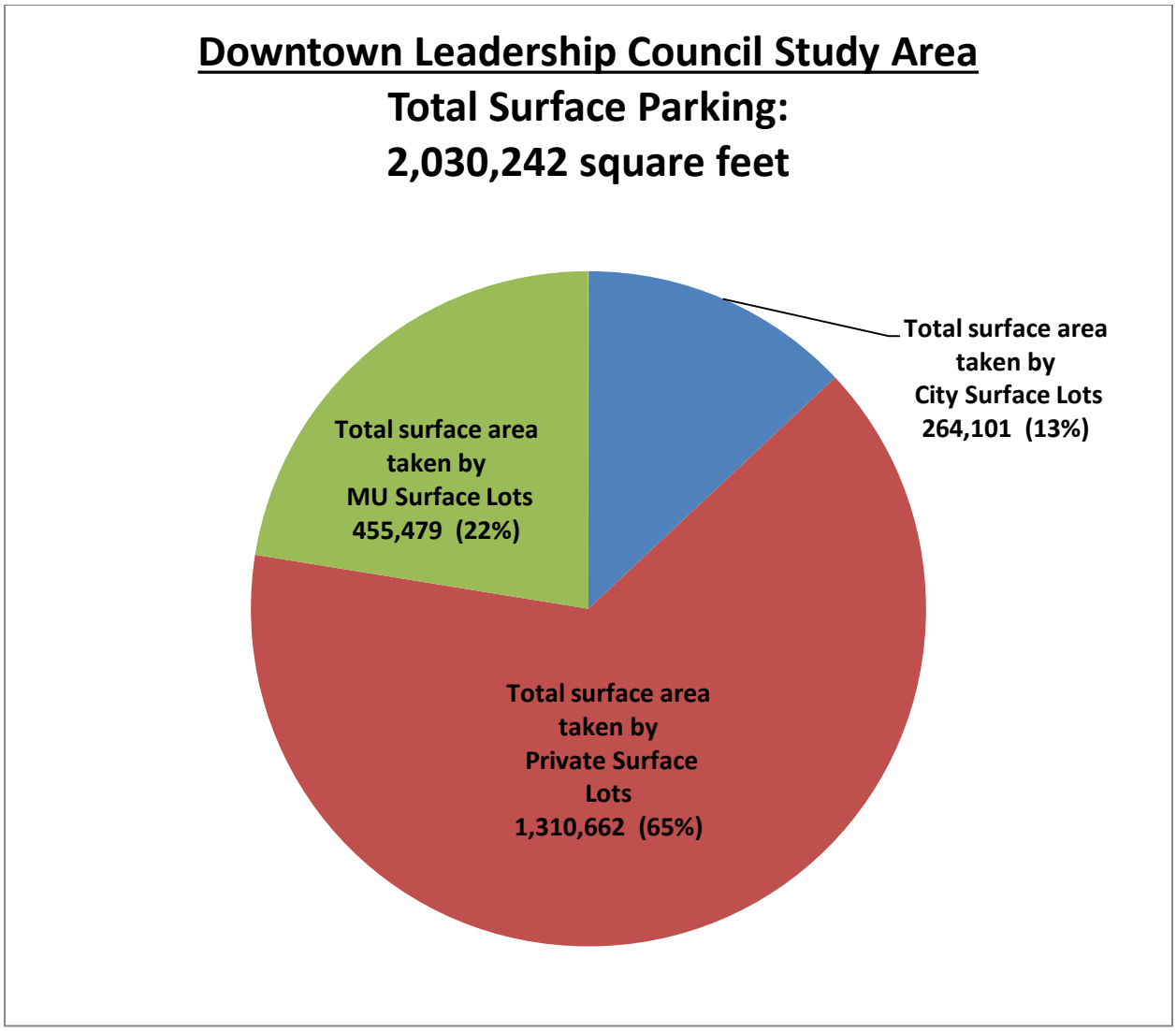
Appendix P


Proposed M-DT Zoning Area
Total Surface Parking:
1,379,621 square feet
Total surface area taken by MU Surface Lots 128,298 (10%)
Total surface area taken by City Surface Lots 264,101 (19%)
Total surface area taken by Private Surface Lots 975,222 (71%)

Appendix P


Downtown Leadership Council Study Area
Total Surface Area:
49,348,103 square feet
Total surface area in Right of Way 9,725,640 (20%)
TOTAL surface area taken by Buildings 8,631,823 (17%)
Total surface area taken by Surface Lots 2,030,242 (4%)
OTHER 29,415,877 (59%)

Appendix P


Downtown Leadership Council Study Area
Total Surface Parking:
2,030,242 square feet
Total surface area taken by City Surface Lots 264,101 (13%)
Total surface area taken by MU Surface Lots 455,479 (22%)
Total surface area taken by Private Surface Lots 1,310,662 (65%)

Parking and Traffic Management Task Force Recommendations Concerning M-DT Residential Parking Requirements in the draft Unified Development Ordinance

The Parking and Traffic Management Taskforce recommends the following language for Section-4.4 Parking and Loading (a) Applicability, (2) Exceptions, (i) M-DT District, (B) of the draft Unified Development Ordinance (UDO) regarding M-DT residential parking requirements:

Residential development and redevelopment in the M-DT district shall provide one-quarter of one (0.25) parking space per bedroom. This requirement can be satisfied on the site on within one-quarter (0.25) miles of the site, subject to the following exceptions:

(i) An on-site parking space shall be provided for each unit that is required, per the Fair Housing Act, to be accessible for persons with disabilities.

(ii) Entities subject to these minimum parking requirements are prohibited from meeting this requirement, in whole or in part, through the provision of publicly funded parking facilities by the City of Columbia, or by any City proxy entity, in any manner, including but not limited to, any of the following – lease, or sub-lease, sales contracts, permit, license, zoning ordinance, development agreement, building or occupancy permit.

In addition, the Task Force recommends that the one-quarter (.25) parking space per bedroom requirement be reviewed periodically as conditions continue to evolve and as we increase our understanding of parking supply and demand.

Thanks Leah,

A couple notes:
The wording discussed at the meeting included something about calling this the **minimum of** .25 spaces per bedroom, which was discussed quite a bit.

Also, do we need to clarify that the prohibition of using public spaces would apply only to future development? It wouldn't hurt to add that note, just in case.

Have a good week-end!

Deb Sheals
Historic Preservation Consulting
29 South Ninth St. Ste 210
Columbia, MO 65201
phone and fax 573-874-3779

PLEASE NOTE MY NEW EMAIL ADDRESS: debsheals@gmail.com. And new Ste. number: 210. Thanks!

Parking and Traffic Management Taskforce Recommendations Concerning MD-T Parking Requirements in the Unified Development Ordinance (Drafted by staff & provided to P&Z)

The Parking and Traffic Management Taskforce recommends the following additions to the Unified Development Ordinance (UDO) MD-T residential parking requirements:

Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom. Entities are prohibited from meeting this requirement through the provision of publicly funded parking spaces. An on-site parking space shall be provided for each unit that is required, per the Fair Housing Act, to be accessible for persons with disabilities. All other parking requirements can be satisfied on the site or within one-quarter (.25) mile of the site.

In addition, the taskforce recommends that the one-quarter (.25) parking space per bedroom requirement be reviewed periodically as conditions continue to evolve and as we increase our understanding of parking supply and demand.

Staff Response & Recommendations

- First, staff asks that the taskforce potentially revise it recommendation to provide on-site parking for each required accessible unit. All new downtown residential developments must build at least 2% of units as Class A accessible units; however, all other units must be Class B units (which is less restrictive but may still be considered accessible), with the exception that buildings without elevators do not have to provide units on 2nd floor and above. There is a lack of clarity on how many units would be considered accessible. Staff also recommends revising the language to be consistent with our adopted building code, which closely follows the Fair Housing Act. The attached table includes the ADA requirements for accessible parking spaces based on the overall parking space requirement and staff recommends that the taskforce re-writes the code revision as follows, in order to be the most effective and clear: **All required accessible parking spaces, per the Americans with Disabilities Act standards in the Columbia Building Code, shall be built on-site. All other parking requirements can be satisfied on the site or within one-quarter (.25) mile of the site.**

- Concerning the recommendation to prohibit the use of publicly funded parking spaces to meet downtown residential parking requirements, staff is of the opinion that while some restrictions on parking for new residential development may be part of a future strategy to address potential parking supply issues, it may be premature to institute prohibitions on a specific group without further consideration of potential legal ramifications.

- In addition, staff has concerns that forbidding the use of public parking to meet downtown residential needs could have significant impacts on future considerations to

construct centralized City-owned parking facilities, as the City's parking utility funding is supported, in part, through the sale of permits to downtown residences.

- Consequently, requiring each use to provide separate parking facilities could degrade the downtown pedestrian environment, limit density, and encourage drivers to drive from one site to the next, rather than parking once and walking between nearby destinations. Moreover, consolidating parking in centralized public structures, instead of requiring individual parking sites with each new development, can encourage infill development and redevelopment downtown and in historic buildings.

- Staff understands the concerns of the Parking and Traffic Management Taskforce in relation to the current shortage of parking permits in public downtown garages and we will work with the taskforce to draft a policy to better regulate the varied uses related to long-term parking leases. In addition, we are currently working with the taskforce to establish a process to assess and respond to long-term parking supply and demand.

- Below are alternative potential solutions to manage downtown parking demand while considering the needs of all downtown, which we ask the taskforce to potentially consider in lieu of prohibiting the use of public spaces to meet all residential parking requirements:

    - Proportion the supply of City structure parking between specific land use groups (e.g., 80% of parking available to commercial, 20% available for residential). This may require applicant verification of downtown residency or employment. Percentages could be based on expected total parking generated for each type of use.

    - Restrict access to parking permits to downtown employees/residents only. This would be consistent with the fact that properties in C-2 are exempt from parking, therefore, they should have the access to permits.

    - Tiered fee system--based on desire of parking location (tied to market value)

    - Raise rates in general in response to excess demand for permits.

    - Allow offsite parking requirements to be met in public garages; however, require approval by City Council based upon current conditions, such as availability of parking spaces and expected new commercial construction.

    - Create a clause/ordinance forbidding resale of parking permits.

Parking Permit Management Strategy Suggestions

- Below are optional recommendations related to managing downtown parking permits that the taskforce may consider:

    - Proportion the supply of City structure parking between specific land use groups (e.g., 80% of parking available to commercial, 20% available for residential). This may require applicant verification of downtown residency or employment. Percentages could be based on expected total parking generated for each type of use.

    - Restrict access to parking permits to downtown employees/residents only. This would be consistent with the fact that properties in C-2 are exempt from parking, therefore, they should have the access to permits.

    - Tiered fee system--based on desire of parking location (tied to market value)

    - Raise rates in general in response to excess demand for permits.

    - Allow off site parking requirements to be met in public garages; however, require approval by City Council based upon current conditions, such as availability of parking spaces and expected new commercial construction.

    - Create a clause/ordinance forbidding resale of parking permits.

    - **Regulate parking based on long-term vs. short term** (Mike Sokoff suggested adding something similar at our last meeting).

    - **Consider hiring a consultant to not only assist the City in an assessment of downtown parking supply and demand but to assess market rates for parking garages/ spaces and so on. (This is a suggestion that has been added by staff since our last meeting.)**

Appendix S

Working Draft of Taskforce Recommendations

Re: Parking and Traffic Management Task Force

Dear City Council:

Please accept this report as the final recommendations of the Parking and Traffic Management Task Force that you appointed in June, 2016.

1. City staff evaluate downtown parking supply and demand using systems such as License Plate Retrieval (LPR), physical audits and downtown community surveys.

2. City Council appoint a permanent Parking and Traffic Management Commission.

3. **A program that would allow downtown developers to pay a fee to the City in lieu of building parking should be seriously considered once we have a clearer understanding of downtown parking supply and demand and how to either increase supply and/or reduce demand. *(This was discussed at the 10-12 meeting but it was never formally voted on. The taskforce needs to decide if they want to make a formal vote on this item and if so, if they want to make any revisions to it).***

Portion of taskforce recommendations concerning the UDO that have gone to Planning and Zoning (P&Z), and will also need to go to Council if P & Z does not incorporate them:

4. Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom.

5. **In addition, the taskforce recommends that the one-quarter (.25) parking space per bedroom requirement be reviewed periodically as conditions continue to evolve and as we increase our understanding of parking supply and demand. *(Need a time frame added to this, P&Z asked, specifically, how often do we want this requirement reviewed?).***

6. All accessible parking spaces that are required by the City's current adopted Building Code shall be built on-site. All other parking requirements can be satisfied on-site or within one-quarter (.25) mile of the site.

Appendix T

Working Draft of Parking and Traffic Management Taskforce Recommendations
11-16-16

1. **Working Draft of Taskforce Recommendations:**

Our first item is to review the working draft of the taskforce recommendations. Sub-committees can review and bring any suggestions for revisions/additions to the main taskforce meeting for a vote.

Re: Parking and Traffic Management Task Force

Dear City Council:

Please accept this report as the final recommendations of the Parking and Traffic Management Task Force that you appointed in June, 2016.

1. Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom.

2. All accessible parking spaces that are required by the City's current adopted Building Code shall be built on-site in the M-DT district. All other parking requirements can be satisfied on-site or within one-quarter (.25) mile of the site.

3. The City Council shall appoint a permanent Parking and Traffic Management Commission with the following mission and responsibilities:

   I. The Commission shall oversee a continuous assessment of downtown parking availability and demand management strategies. The Commission shall make recommendations to Council concerning the parking requirements in the MD-T district as needed, no less than every two years, to address rapidly changing parking conditions downtown.

   II. City staff shall provide regular evaluations of downtown parking supply and demand using systems such as License Plate Retrieval (LPR), physical audits, downtown community surveys and cost analysis of new parking facilities to the Parking and Traffic Management Commission.

   III. A program that would allow downtown developers to pay a fee to the City in lieu of building parking should be considered by the Parking and Traffic Commission once we have a clearer understanding of downtown parking supply and demand downtown and in surrounding neighborhoods, and how to either increase supply and/or reduce demand. Fees remitted to the city through a fee in lieu program should be used, but not limited to, fund a city managed and enforced parking system for downtown and surrounding neighborhoods, including residential parking permit programs, as well as transportation demand

management strategies such as walking, biking and transit infrastructure and promotion.

IV. As the Parking and Traffic Management Taskforce did not have time, the Parking and Traffic Management Commission shall complete a review and evaluation of best practices related to parking and traffic management in other cities, as provided through examples in the Smart Growth America (SGA) report and presentation.

V. As the Parking and Traffic Management Taskforce did not have time, the Parking and Traffic Management Commission shall complete a study and evaluation of the SGA recommended actions to address parking policies and strategies, including the use of mode share and public transportation to reduce downtown parking demand, development of a transportation demand management program as a collaboration between the City and University, and preparation of a downtown access and circulation plan.

1. Strategy for Finalizing Specific Sub-Committee Recommendations:
This document is a template for how to draft recommendations specific to your particular sub-committee, which you can propose to add to the final taskforce recommendations (the already identified problems, strategies and working draft of recommendations are also included in this handout).

- Identify problems/issues for your particular sub-committee area of focus
- Define Strategies for solving problems
- Identify needed resources to fulfill strategies
- Draft recommendations based on these conclusions

2.Identified Problems Related to Parking

This document lists sub-committee specific problems that have already been identified. The sub-committees can review and add more problems if they feel the need. Mainly this document is meant to lend to the sub-committee brainstorming process; the important thing is to think of strategies to help solve these problems, which can be drafted into recommendations and added to the working draft of taskforce recommendations.

I. Downtown

- How to protect and grow downtown businesses and the downtown economy;
- Programs of the City and University affecting downtown need to be well integrated.
- Long-term storage of cars (overnight and multi-day parking) does not impact business and residential short term parking needs.
- The need for accurate, real-time metrics about parking demand and supply;
- How to use leading edge technologies to improve parking management;
- How to equitably distribute the costs of providing parking to the end users.
- Need to define the roles/responsibilities of the parking utility in relation to planning needs, permitting, priorities, finance, data management

II. Neighborhoods

- How to protect residential neighborhoods from commuters and overflow-parking from surrounding institutions, organizations;
- Long-term storage of cars (overnight and multi-day parking) does not impact residential parking needs.

III. Transportation demand management

- How to reduce parking demand by getting people to drive and park less
- How to create a walkable/bikeable downtown and walkable/bikeable neighborhoods;
- How to increase transit service levels and transit ridership;
- The need for convenient, affordable long-distance travel options
- Potential need for employee demand management programs

3. Parking Management Strategy Suggestions:

This is the working draft of parking management strategy suggestions, which can be drafted into recommendations and added to the working draft of taskforce recommendations.

I. Downtown

Below are optional recommendations related to managing parking in the downtown area that the taskforce may consider:

- Proportion the supply of City structure parking between specific land use groups (e.g., 80% of parking available to commercial, 20% available for residential). This may require applicant verification of downtown residency or employment. Percentages could be based on expected total parking generated for each type of use.

- Restrict access to parking permits to downtown employees/residents only. This would be consistent with the fact that properties in C-2 are exempt from parking, therefore, they should have the access to permits.

- Tiered fee system--based on desire of parking location (tied to market value)

- Raise rates in general in response to excess demand for permits.

- Allow off site parking requirements to be met in public garages; however, require approval by City Council based upon current conditions, such as availability of parking spaces and expected new commercial construction.

- Create a clause/ordinance forbidding resale of parking permits.

- Regulate parking based on long-term vs. short term (Mike Sokoff suggested adding something similar at the 10-26-16 meeting).

- Consider hiring a consultant to not only assist the City in an assessment of downtown parking supply and demand but to assess market rates for parking garages/ spaces and so on. (This is a suggestion that was added by staff after the 10-26-16 meeting).

- Since the city is about to replace parking meters, I would like to start a discussion of the current 2 hour time limit on many meters. The consultant during the smart

growth audit noted that 3 hours was a more common minimum. Can we consider a change to 3 hours, paired with strict enforcement of meter feeding? **(Taskforce member Deb Sheals requested to add this issue after the 11-9-16 meeting).**

- **Explore expanding on-street permit program**

II. Neighborhoods

Below are optional recommendations related to managing parking in the neighborhoods adjacent to downtown that the taskforce may consider:

- Need to define a process for creating fair, equitable, desired and effective residential parking permit programs in neighborhoods near downtown and the university. The process can serve as a future template for any neighborhood that desires such a program.

- Perform a literature review of residential permit parking programs across the country to find out what works and what doesn't.

- Consider hiring a consultant to not only assist the City in an assessment of neighborhood parking supply and demand but to assess market rates for residential permit programs and so on.

III. Transportation Demand Management

Below are optional recommendations related to transportation demand management managing that the taskforce may consider:

- See the 3 smart growth recommendations

- Employee parking demand management programs

- TDM education for incoming students, i.e long distance travel options, the true cost savings of non-car ownership...
- Consider hiring a consultant to gain an understanding of how to design parking in a way that best supports transportation demand management

4. Working Draft of Task Force Recommendations:

Re: Parking and Traffic Management Task Force

Dear City Council:

Please accept this report as the final recommendations of the Parking and Traffic Management Task Force that you appointed in June, 2016.

1. Residential development and redevelopment in the M-DT district shall provide one-quarter (.25) parking space per bedroom.

2. All accessible parking spaces that are required by the City's current adopted Building Code shall be built on-site in the M-DT district. All other parking requirements can be satisfied on-site or within one-quarter (.25) mile of the site.

3. Pass an ordinance forbidding the resale of parking permits at a higher price than charged by the city.

4. The City Council shall appoint a permanent Parking and Transportation Management Commission with the following mission and responsibilities:

   A. The Commission shall partner with the city's parking utility to hire a parking and transportation management consultant to do the following:

   - Assess parking supply and demand downtown and in surrounding neighborhoods
   - Develop a financial pro forma for the cost to operate and maintain parking infrastructure and systems, including residential parking permit programs and transportation demand management strategies

   B.The Commission shall oversee a continuous assessment of parking availability and demand management strategies city-wide.

   C. The commission shall make recommendations to Council concerning the parking requirements in the M-DT district as needed, no less than every two years, to address rapidly changing parking conditions downtown.

D. City staff shall provide regular evaluations of downtown parking supply and demand using systems such as License Plate Recognition (LPR), physical audits, downtown community surveys and cost analysis of new parking facilities to the Parking and Transportation Management Commission.

E. The commission shall consider a program that would allow downtown developers to pay a fee to the City in lieu of meeting minimum parking requirements once we have a clearer understanding of downtown parking supply and demand and in surrounding neighborhoods, and how to either increase supply and/or reduce demand. Fees remitted to the city through a fee in lieu program should be used, but not limited to, fund a city managed and enforced parking system for downtown and surrounding neighborhoods, including residential parking permit programs, as well as transportation demand management strategies such as walking, biking and transit infrastructure and promotion.

G. The commission shall examine the current allotment of parking permits by land use groups (residential, commercial, employee, other) and consider measures to proportion distribution of parking permits based on specified land use. Such measures may require permit applicant verification of downtown residency or employment. Proportions could be based on expected total parking generated for each type of use.

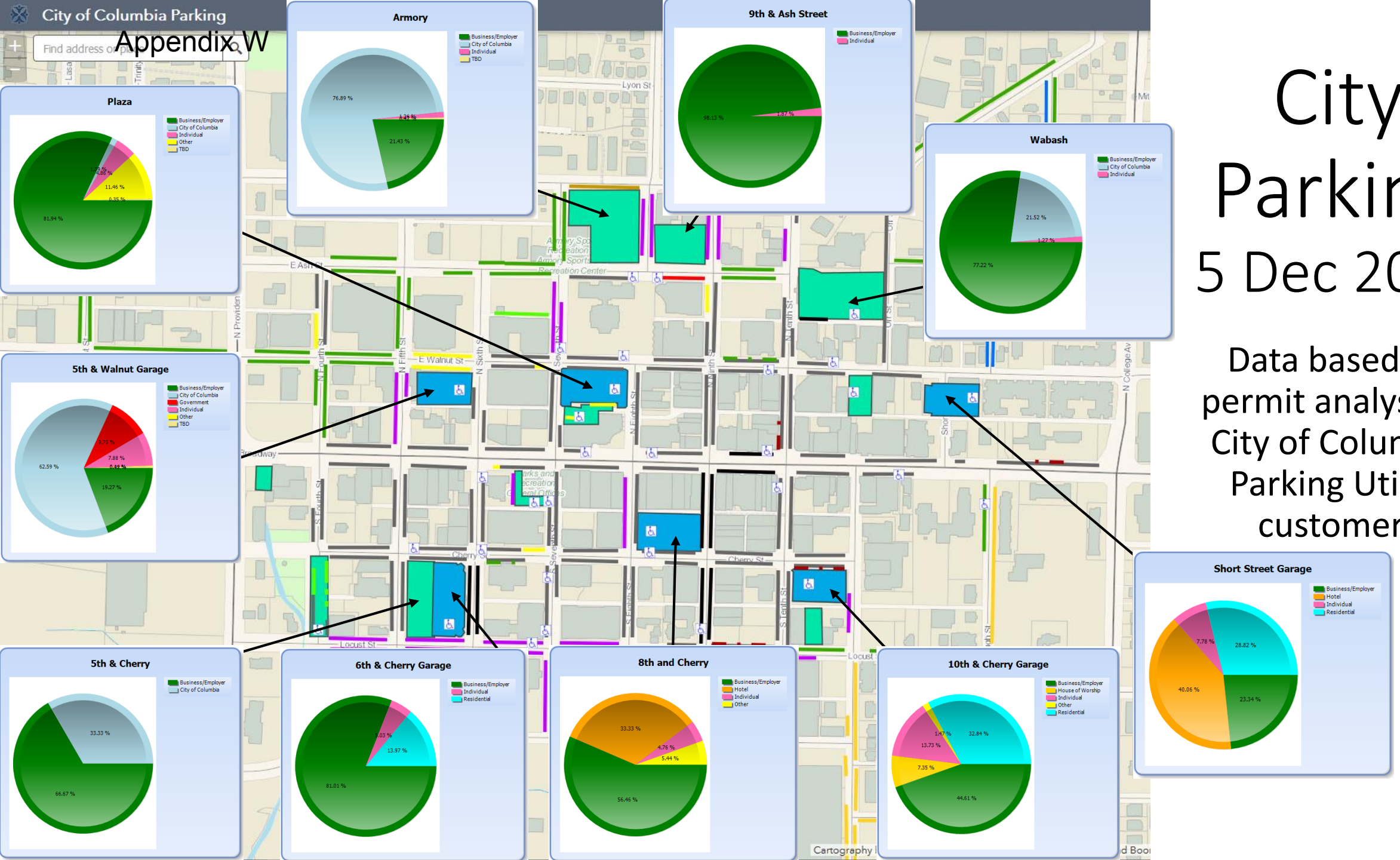
H. The commission shall complete a review and evaluation of best practices related to parking and transportation management in other cities, as provided through examples in the Smart Growth America (SGA) report and presentation, as the task force timeline and priorities emphasized making recommendations related to M-DT parking requirements in the UDO.

I. The commission shall complete a study and evaluation of the SGA recommended actions to address parking policies and strategies, including the use of mode share and public transportation to reduce downtown parking demand, development of a transportation demand management program as a collaboration between the City and the University of Missouri, and other institutions and organizations that generate parking demand and traffic, and preparation of a downtown access and circulation plan, as the task force timeline and priorities emphasized making recommendations related to M-DT parking requirements in the UDO.

City Parking

5 Dec 2016

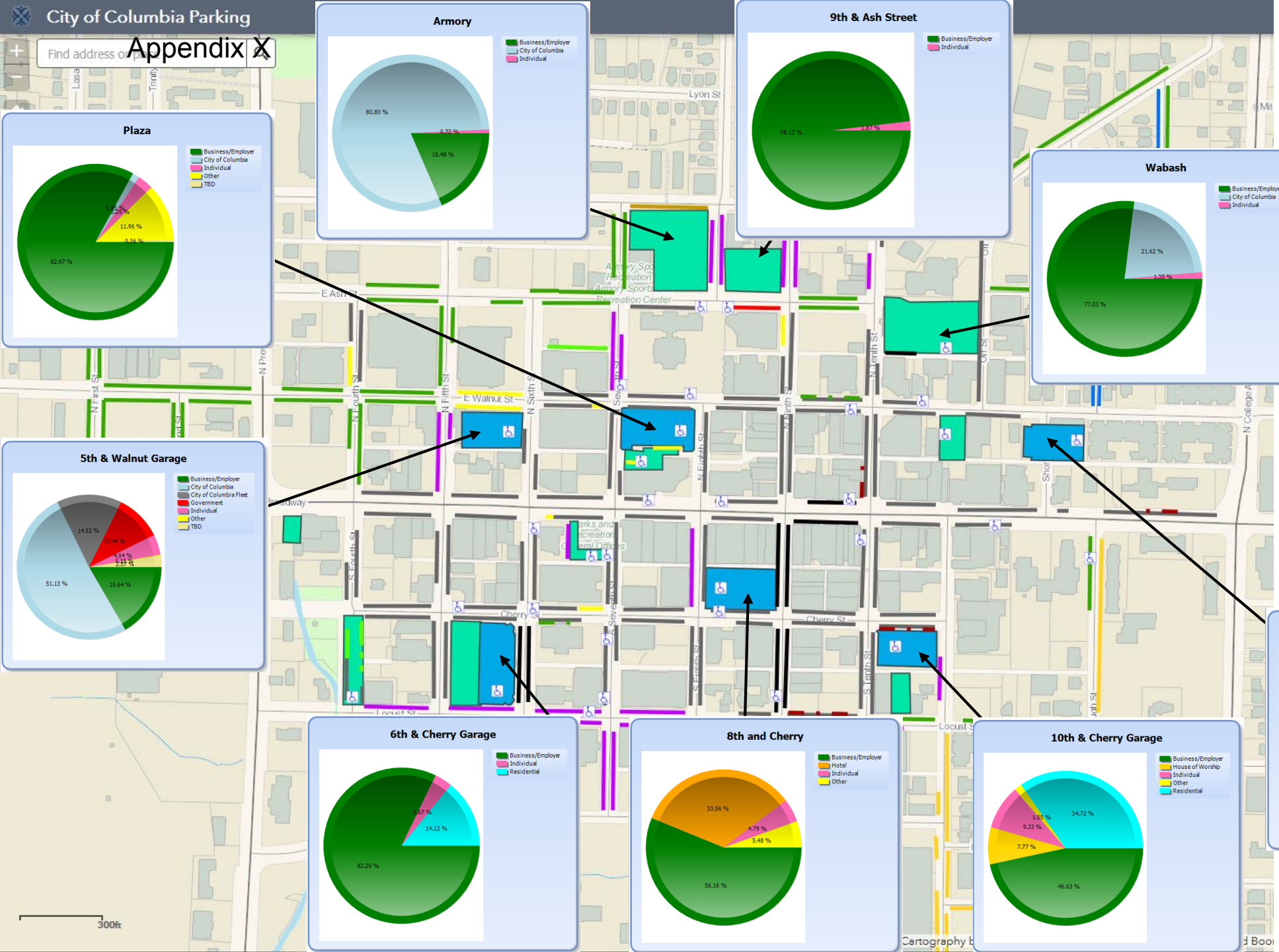
Data based on permit analysis of City of Columbia Parking Utility customers



City Parking

25 Jan. 2017

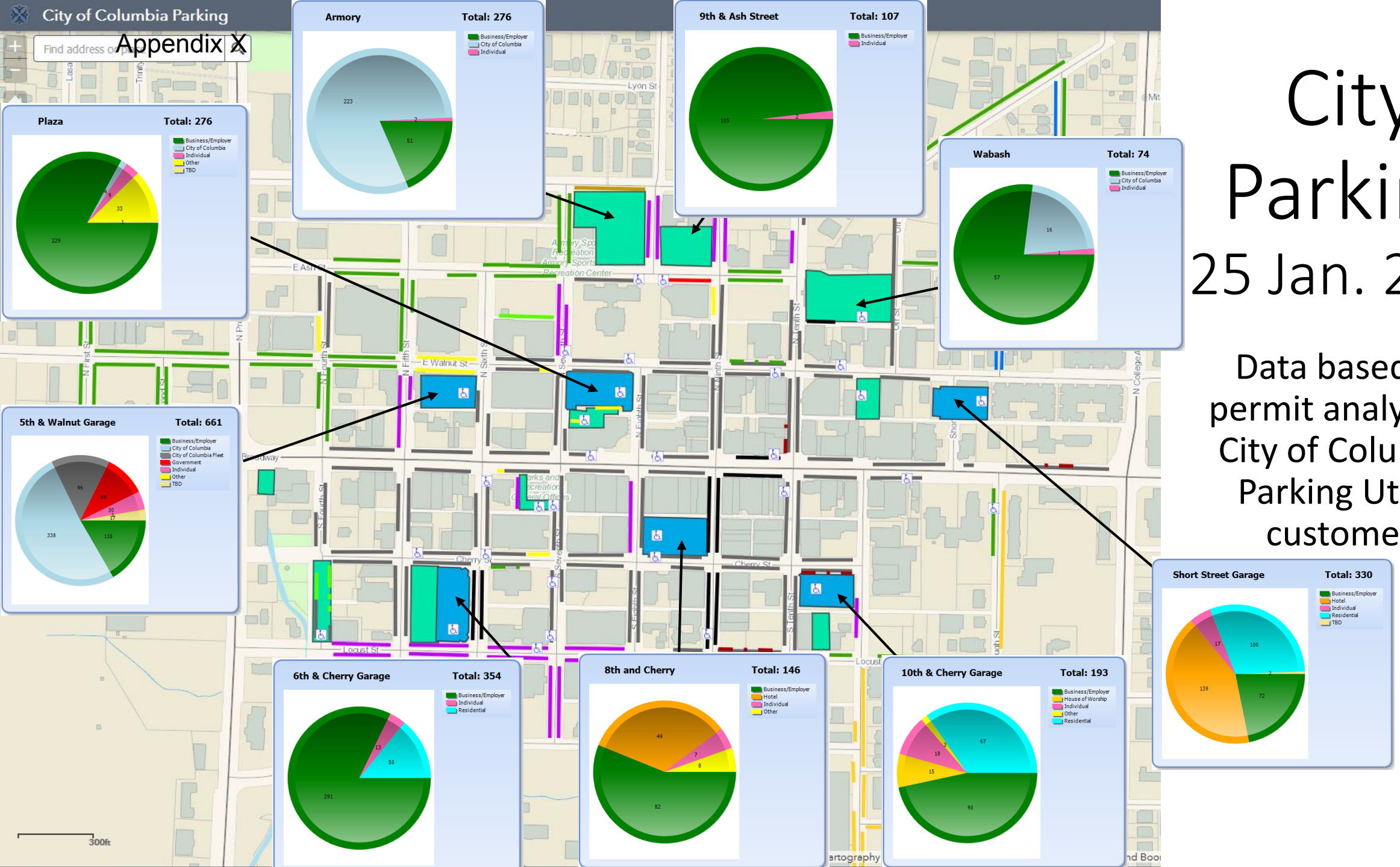
Data based on permit analysis of City of Columbia Parking Utility customers



City Parking

25 Jan. 2017

Data based on permit analysis of City of Columbia Parking Utility customers



Boone County Coordinated Transportation Services Planning Group

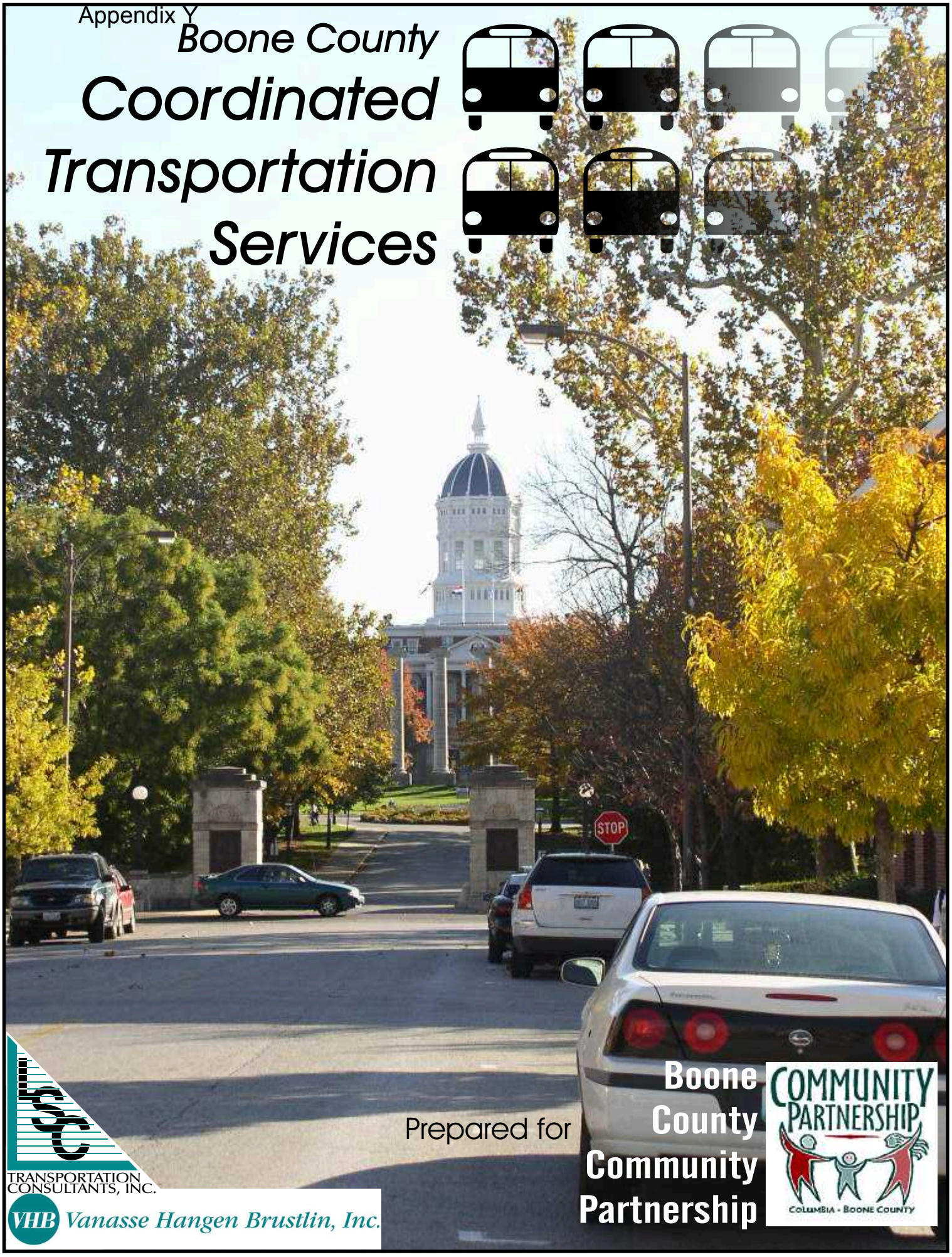
Definition
Transportation Services includes directly providing transportation, funding or coordinating any form of motorized vehicular transportation other than personal vehicle transportation which includes but is not limited to: bus transportation, para-transit, agency-owned vans, passenger rail, taxi cabs, etc., whether provided publicly, privately, or through joint efforts.

Initial (Short-term) Purpose
To assess the need and potential for significantly enhanced and coordinated transportation services throughout *all* of Boone County in order to ensure that everyone who lives or works in Boone County has transportation available to the resources they choose.

Output
The development of a widely-shared vision of coordinated transportation services throughout *all* of Boone County which would ensure that everyone who lives or works in Boone County has transportation available to the resources they choose.

Appendix Y

Boone County Coordinated Transportation Services



Prepared for

Boone County Community Partnership

COMMUNITY PARTNERSHIP
COLUMBIA - BOONE COUNTY

LSC TRANSPORTATION CONSULTANTS, INC.

VHB Vanasse Hangen Brustlin, Inc.

Appendix Y

Boone County Coordinated Transportation Service

Final Report

Prepared For:

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LSC #056050

October 24, 2006

TABLE OF CONTENTS

APPENDICES (bound separately)

LIST OF TABULATIONS

LIST OF ILLUSTRATIONS

Chapter I

CHAPTER I
Introduction

The Boone County Community Partnership (BCCP) contracted with LSC Transportation Consultants Inc., VHB, and the Missouri School of Journalism, Center for Advanced Social Research, to prepare a comprehensive inventory and needs assessment of the human transportation services in Boone County, Missouri. The project focused on transit needs within Boone County and Columbia (the largest incorporated area in the county), and those coordination efforts to meet the needs. This report presents a summary of the planning process and scope of work, project goals, key terminology, a review of community input, an assessment of the transit needs in Boone County, and the potential for various coordination strategies.

Residents of Boone County have recognized the need for increased public transportation in the area. Several studies have recognized the significant unmet need for transit services, and the need has been documented. For some area residents, the need for public transportation service is of high concern as it will enable residents to travel from home to work, shopping, health care facilities, and other necessary services. For many residents, the public transportation system links them directly with the community. The rural character of Boone County makes transportation services crucial for those members of the area who are dependent upon alternative forms of transportation to the private automobile. The City of Columbia acts as both a local and regional hub for shopping, health care, social services, and other services. Several agencies have been identified as providing transportation services in the greater Boone County area; however, many of these "providers" are not transportation providers in the normal sense of the word. Many of the "providers" are social service agencies who provide some form of transportation to their clients, whether that be a medical trip in a personal automobile of a case worker or providing vouchers for the local taxi service.

Providers such as Columbia Transit and Para-Transit (which provide service within the City of Columbia), OATS (which provides service in both the rural areas of the county as well as in Columbia), and Services for Independent Living provide a greater portion of the trips in the county; however, other agencies which provide transportation provide a significant number of trips as well.

BCCP has taken the initiative to pursue a services inventory and need assessment as an initial phase of a countywide coordinated transportation system. A Steering Committee was formed and reviewed all documents and products throughout the course of this project. A subcommittee was established to aid in the creation of community surveys which targeted current users of transit/transportation, college students, local employees, and the general community. This information helped to determine both the current and future need for transportation.

Coordination of services is also receiving an emphasis at the federal level. The President issued an Executive Order addressing coordination of federally-funded transportation programs, and the federal government has established the "United We Ride" program to encourage and support coordination efforts. Funding has been made available to implement coordination programs. The most recent federal transportation legislation includes a requirement to develop a local coordination plan for human services transportation to support funding requests.

There is a wide level of support within the community for coordination of transportation services. Local businesses, agencies, and governments have expressed support; however, lack of interest in coordination of services will be a factor in implementing any of the coordination strategies described later in this report. This is a key component to implement any coordination efforts between small agency providers and the larger Columbia Transit system. There must be broad-based local support among both the private and public sectors. The current level of support is a foundation upon which to build and indicates a likelihood of future success between both governmental entities.

There are existing resources in the area used by human services agencies to provide transportation services for their clients. The existing resources represent a

significant investment and may provide some of the resources necessary to implement a countywide public transit service. Coordination and consolidation of services typically allows local entities to provide additional and enhanced service to the community using existing resources. A key issue in this project is to identify those existing resources which are available and any additional resources which may be needed to provide transportation service.

PURPOSE OF THE STUDY

The purpose of this study is to document the existing resources and current needs within Boone County. The finished product of this study will describe the existing conditions in the city and county related to transportation services, discuss coordination of service and other alternatives for meeting needs into the future, identify the barriers, both perceived and real, for successfully coordinating resources, and present the obvious coordination strategies which should be pursued immediately. It is foreseen that this project will aid the local champions in the identification of service and existing gaps. This project is seen as the first step in the coordination of resources, and may likely lead to a second phase which will serve as the coordination plan for Boone County.

REPORT CONTENTS

Chapter II presents the common terminology which will be used throughout this project. Many of the terms are used regularly, while some are specific to issues addressed later in this project. It is important to document these terms which will be used so that all who read the study have the same definitions.

Chapter III presents a review of previous studies and planning efforts, including a review of the 2025 Transportation Plan, local initiatives, such as work on a needs assessment in the region, Statewide Needs Assessment, and others as appropriate.

Chapter IV presents a summary of key person interviews conducted primarily during August 2005. Local community representatives, leaders, and other iden-

tified key individuals were interviewed to gain a local perspective on the issues, barriers, challenges, and successes of coordination between entities, organizations, and agencies. These interviews are presented in a broad form. No one person, agency, or entity is identified nor are specific statements attributed to any individual.

Chapter V presents a summary of how agencies were identified and how data were collected and tabulated. Two separate categories of providers were initially identified by the Steering Committee and BCCP—those who were deemed transit providers and those deemed human service agencies. Chapter VI presents a summary of the two primary transit providers—Columbia Transit and OATS—and Chapter VII provides a summary of the human service agencies.

Community characteristics are described in Chapter VIII. These include demographics and economics. Key transit potential transit destinations are also identified.

Chapter IX presents current and future demand based on several specific models of estimation. The product of this chapter is a clear picture of transit needs based upon quantitative models. These models were adjusted to reflect actual conditions observed in Boone County.

Chapter X presents the results from a survey of University of Missouri students and employees, because the University is a major generator of transit trips. This section of the population has specific needs of its own and therefore is treated as such in estimating the need for transportation services. Chapter XI presents an analysis of the Agency Client survey questionnaires. Surveys were sent out to those agencies which may have client-based transportation needs. The survey results are presented in text, tables, and graphs. Chapter XII presents results from a community-wide survey of residents. This survey does not represent one specific user of transportation services, but broad-based community input into current and future transportation needs. These qualitative and quantitative needs help to validate the estimates made in Chapter IX.

Coordination opportunities are identified and the potential for implementing the various coordination strategies is described in Chapter XIII. These coordination opportunities will form the basis for selecting preferred strategies and developing an implementation plan for coordinated services in Boone County. As shown in Chapter XIII, there are many opportunities to coordinate activities among the various transportation providers. Some of these have more potential than others. Much of the potential for successful implementation will depend on the willingness to participate and the support for coordination among the different agencies which either fund or provide transportation services.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

Throughout the planning process, public involvement is key to the success of any type of plan for the community. The Steering Committee provided input and feedback throughout the study. This involvement included identification of issues at the project kick-off meeting and feedback on each of the four Technical Memoranda which were submitted. The Steering Committee represented transportation providers, agencies with clients needing transportation services, and users of transportation services.

At critical points during the process, public meetings were announced and held where citizen participation was openly welcome and appreciated. In addition to these meetings, a community-wide survey was available on the Internet, surveys were distributed through various outlets, and presentations were made to local organizations. A series of open houses were held in early November 2005 to provide an opportunity for residents to identify issues related to transportation services. These were held at Brady Commons on the University of Missouri Campus, the Columbia Library, the Wabash Transit Center, and the Resource Center. A public meeting was held April 12, 2006 at the Columbia Library to present the transit needs assessment. Public input was sought regarding this quantitative assessment and the analysis of community input from the various survey efforts.

Additional public input will be sought on the Draft Report as it is presented to the community.

SUMMARY OF THE ISSUES

During the August kick-off meeting, the LSC Team briefed the Steering Committee on the study process to be undertaken over the year-long period. Major issues and concerns regarding transportation were discussed. To identify those issues, the United We Ride Framework for Action, Community Self Assessment was used to document a series of issues. Twenty-six questions were asked of the Steering Committee regarding coordination issues. Following are questions and a summary of answers from that Community Self Assessment interaction with the Steering Committee:

1. Have leaders and organizations defined the need for change and articulated a new vision for the delivery of coordinated transportation services?

   Response: Needs action.

2. Is a governing framework in place that brings together providers, agencies, and consumers? Are there clear guidelines that all embrace?

   Response: CATSO, Boone County Working Group; however, needs significant action taken.

3. Does the governing framework cover the entire community and maintain strong relationships with neighboring communities and state agencies?

   Response: The Boone County Working Group does this well; however, a governing framework needs to start.

4. Is there sustained support for coordinated transportation planning among elected officials, agency administrators, and other community leaders?

   Response: There is support from elected officials; however, there is guarded support from agencies and an opposition to raising taxes.

5. Is there positive momentum? Is there growing interest and commitment to coordinating human service transportation trips and maximizing resources?

   Response: Yes, there is positive momentum. However, the commitment to coordinate human service transportation trips needs action.

6. Is there an inventory of community transportation resources and programs that fund transportation services?

   Response: This is part of this project.

7. Is there a process for identifying duplication of services, underused assets, and service gaps?

   Response: This is part of the current project.

8. Are the specific transportation needs of various target populations well documented?

   Response: This is outdated information; however, it is part of the current project.

9. Has the use of technology in the transportation system been assessed to determine whether investment in transportation technology may improve services and/or reduce costs?

   Response: This is part of this coordination study.

10. Are transportation line items included in the annual budgets for all human service programs that provide transportation services?

    Response: Some agencies do this; however, this needs to be addressed.

11. Have transportation users and other stakeholders participated in the community transportation assessment process?

    Response: Yes, this is done well.

12. Is there a strategic plan with a clear mission and goals? Are the assessment results used to develop a set of realistic actions that improve coordination?

    Response: No, there is no strategic plan with a clear mission and goals. The MPO and the City's Consolidated Plan are used.

13. Are clear data systematically gathered on core performance issues such as cost per delivered trip, ridership, and on-time performance? Are the data systematically analyzed to determine how costs can be lowered and performance improved?

    Response: This is gathered and analyzed by some.

14. Is the plan for human services transportation coordination linked to and supported by other state and local plans such as the Regional Transportation Plan or State Transportation Improvement Plan?

    Response: Not at this time; however, this needs to occur.

15. Are data being collected on the benefits of coordination? Are the results communicated strategically?

    Response: Not at this time; however, this needs to occur.

16. Does the transportation system have an array of user-friendly and accessible information sources?

    Response: There are varying formats and sources currently.

17. Are travel training and consumer education programs available on an on-going basis?

    Response: There are some training programs, but on a limited basis and are program-specific.

18. Is there a seamless payment system that supports user-friendly services and promotes customer choice of the most cost-effective service?

    Response: Not at this time.

19. Are customer ideas and concerns gathered at each step of the coordination process? Are customer satisfaction data collected regularly?

    Response: This has not occurred. Some individual agencies collect customer satisfaction data.

20. Are marketing and communications programs used to build awareness and encourage greater use of the services?

    Response: Yes; however, they are limited and not viewed as effective.

21. Is there a strategy for systematic tracking of financial data across programs?

    Response: Not at this time.

22. Is there an automated billing system in place that supports the seamless payment system and other contracting mechanisms?

    Response: Not at this time.

23. Has an arrangement among diverse transportation providers been created to offer flexible services that are seamless to customers?

    Response: Not being done currently.

24. Are support services coordinated to lower costs and ease management burdens?

    Response: Yes, MoDOT is doing this through joint purchases.

25. Is there a centralized dispatch system to handle requests for transportation services from agencies and individuals?

    Response: No, this is not occurring at this time.

26. Have facilities been located to promote safe, seamless, and cost-effective transportation services?

    Response: This is not a regular practice. Some facilities have been located in areas not served by Columbia Transit.

PROJECT GOALS

As part of the initial kick-off meeting held in Columbia, the Steering Committee developed general project goals which will guide the planning process throughout the course of the study. The following presents the paraphrased goals of study:

- Should be a thorough needs assessment.
- Should identify what is wanted and/or desired as well as what is needed.
- Should include an inventory of the existing service provided.
- This inventory should be updatable.
- The study should have the capability to be repeated.
- Participation from the public is a key element.
- Local education is vital.
- Study should identify those opportunities for coordination.
- Trusted data will be used to allow for credibility.
- The study should provide a general conceptual framework for service (25 years).
- Should build social capital.
- Development of standards.
- The potential for enhancement of service and support.
- The Steering Committee/Working Group needs a better name.
- What would it take to get people to use transit?

SCOPE OF WORK

The following section presents the Scope of Work which was undertaken for this project. Six main tasks were undertaken during this study, many with corresponding subtasks. This section is organized in sequential order of the task with a statement of purpose, the approach to the specific task, and a product.

Task 1: Terminology and Community Standards

Purpose: The purpose of Task 1 is to establish the communication links and information processes which are necessary to the success of the program.

Approach: The LSC Project Manager will coordinate directly with the Project Director throughout the course of the study. LSC will develop and provide a list of data items needed for the study. An initial "kick-off" meeting will be held in Columbia with the BCCP Steering Committee, staff, local stakeholders, and other transit/transportation agencies. The meetings will discuss issues important to all concerned, as well as clarify project goals and objectives and important local priorities and concerns.

Frequent communication will provide close coordination among the Consultant Team and the local staff, and inform the study participants of the progress made on the study. Monthly written status reports will be provided which will indicate progress, work completed, and upcoming work on the coordination process. This task is seen as an ongoing process which will relate directly to each of the other tasks throughout the work program. LSC will conduct presentations for the Steering Committee at key points throughout the study. At the second and third meetings, LSC will present a Technical Memorandum. At the final meeting, LSC will present a draft report of the final plan.

Our communication with the local community includes the public involvement program described in the public involvement subtask. We will strive to involve as many local residents as possible. At each of the four public meetings, LSC will conduct a roundtable with the Steering Committee and the public in order to create a setting of open dialogue regarding the direction of the study.

Goal Setting

The purpose of this subtask is to develop project goals and objectives for completion of this coordination study.

At the kick-off meeting with the Steering Committee, we will facilitate a discussion to develop the project goals and objectives. We anticipate this meeting will last up to four hours. One tool which we plan to use is the self-assessment of coordination developed as part of the FTA's "United We Ride" initiative. The LSC Team will document in a written memorandum the goals and objectives of the project. Specific objectives will be developed for each of the established study goals for review and comment by the Steering Committee.

Review Relevant Plans and Studies

The purpose of this subtask is a comprehensive review of current and relevant plans and studies. The LSC Team, in conjunction with local BCCP Staff, will review relevant plans and studies related to transpor-

tation, land-use development, capital improvements, and others identified by the Steering Committee. These plans will provide insight into future development patterns and planned transportation activities. These documents will help clarify community values, goals, and provide direction for the coordination process.

Community Involvement

The purpose of this task is to obtain input from the public to ensure that the study products reflect the issues, concerns, and desires of the community and its surrounding areas.

The source of public input will be the public meetings and the roundtable meetings with both the public and Steering Committee. The Steering Committee will provide a cross section of the community and ensure continuity of input from community representatives throughout the process.

We will also conduct interviews of key stakeholders. Numerous individuals to be interviewed were identified by the BCCP Steering Committee. The Consultant conducted the interviews using a structured interview format with open-ended questions. The interviewers asked follow-up questions based on the responses of the stakeholders.

We propose to conduct three public meetings during the project. The first open house would be held to discuss the inventory and analysis. Open houses would be held at several locations such as a retail center or other area that generates public activity. A Planning Team representative would be there to inform the public on the study and solicit comments and suggestions.

The second meeting will be to provide information on the assessment of need. The last public meeting will introduce the Draft Report. We recommend that a central location be used for the open houses and that they be held from late afternoon through early evening so that people have the option of when to attend. We will work with the Steering Committee to identify an appropriate location and time for each meeting.

We also propose to place project documents and information on the Internet. We have found this to be an effective means of providing project information to the greatest number of people. This also provides a way for local residents to contact the project team, either via e-mail or using our toll-free telephone number which will be included with all project information. We will also maintain a mailing list (both e-mail and mailing addresses) of those who attend the various meetings or express an interest so they may be kept informed about the study progress. We will send e-mail notices of upcoming meetings as well as postcards to those not on the e-mail list.

Product: The product of this task will be a clear understanding of the role of the Consultant, the issues and concerns of the project, and the strategies

for completion of the coordination study. This task will be documented in Technical Memorandum #1. We will provide one bound copy of each Technical Memorandum as well as posting each document on our website in Adobe Acrobat format.

Task 2: Inventory of Existing Service

Purpose: To compile a comprehensive inventory of transportation services in Boone County.

Approach: LSC will compile data regarding all current transportation providers in the area. An inventory of all transit providers (both public and private) that operate in the area will be incorporated into this study. A profile of each transit provider will be prepared to include the following:

- Name of operation, location, and type of ownership.
- Operating policies and procedures.
- Service area and clients served.
- Hours of operation and level of service.
- Routes, schedules, reservation policies, and dispatch procedures.
- What agencies provide transportation as support to their primary mission.
- Number of passengers and passenger-trips by market segment, route, time of day, and day of week (this will be collated by percentage of trips).
- Data on unmet service requests (both actual and perceived).
- Performance data and reporting procedures.
- Operating budget, funding sources, and financial program.
- Operator's equipment and facilities including an inventory of lift- or ramp-equipped vehicles that are available for short- and long-term lease and/or rent.
- Coordination efforts with other providers and agencies.
- System management structure.
- Staffing.
- Maintenance arrangements.
- Marketing efforts.
- Agency interest in additional coordination.
- Administrative capabilities and abilities of agencies to assume coordination roles.
- Aggregate financial resources devoted to transportation.
- Individual and aggregate physical capabilities of fleet and infrastructure support, and an overview of peak and non-peak service times.
- Identification of populations served and underserved throughout Boone County.
- Thorough analysis of all individual and aggregate regulatory, statutory, and other regulations at the provider level as they pertain to providing coordinated transportation services.

- General information which potential riders would need in order to determine suitability of a service to meet their need.
- Other data as determined by key participants, or the Planning Team.

LSC and CASR will develop a questionnaire to collect the agency information. The draft questionnaire was submitted to the Steering Committee for review. CASR will then administer the survey through telephone contacts, mailing of the survey instrument, and follow-up telephone calls to collect the data.

Product: The inventory of existing services will be presented in Technical Memorandum #2 in narrative form with supporting tables and graphics. Graphic information will include ridership trends, performance measures, maps of service areas, and routes. We will provide one bound copy, one digital reproduction quality original of the Technical Memorandum, as well as an electronic version posted on our website.

Task 3: Assessment of Need

Purpose: To conduct a thorough assessment of the needs for significantly enhanced and coordinated transportation in Boone County.

Approach: LSC will employ a series of demand estimation techniques for both the general population and particular market segments, including elderly and disabled populations. It should be noted that our firm has developed demand estimation techniques such as the TCRP methodology for Rural Transit Demand and the Mobility Gap. We have also developed urban transit demand models using socioeconomic factors such as household size, income, and vehicle ownership. We will provide a quantitative estimate of demand based on these demographic factors. A key element will be to establish the level of need and unmet needs within Boone County. Projected changes in land use and population will be used to develop projections of future needs for 5-, 10-, and 20-year horizons.

Specific techniques to be employed will be a fixed-route demand model for the urban area and the TCRP rural methodology for rural areas of the county. We will also use a model to estimate demand for paratransit trips published by the FTA in the ADA Paratransit Handbook. Program trips will be estimated using the TCRP rural methodology with parameters adjusted to reflect observed demand rates for the programs in Boone County.

As part of this task the Consultant Team will identify likely transit trip generators such as retail centers, medical facilities, educational institutions, social service agencies, and major employers. Input from local staff and the Steering Committee will be required to help identify

the major transit trip generators. This information will be presented on a map of Boone County.

The Consultant Team proposes to use the local agencies to conduct surveys of their clients and constituents. Several survey questionnaires will be distributed by members of the Partnership. The local agencies will be responsible for administering the survey and collecting all data. We will also provide a questionnaire for each human services program regarding the number of participants, transportation needs, and the amount of service currently provided. We will enter the data into a database and analyze the data. Information we will collect will include demographic data, transportation needs and desires, perceptions of existing services, utilization of existing services, and barriers to use of existing services. We will also ask respondents to indicate which characteristics of transportation services are most important.

In addition to the quantitative estimates of transit demand, other needs will be sought through the public participation process. These additional needs will be quantified to the greatest extent possible. Each of the various market segment demands will be aggregated into a single estimate of total demand within Boone County. These estimates will be developed on a census block group level to assist in the identification of specific areas that warrant the need for coordinated service.

Product: This task will provide all the data and assessments as discussed in the Request for Proposal. This information will include baseline data and projections of future needs. We will include this information in Technical Memorandum #3.

Task 4: Opportunities and Potential

Purpose: To conduct a thorough assessment of the opportunities and potential for significantly enhanced and coordinated passenger transportation services in Boone County.

Approach: Using the populations and data identified in the document to this point, the Planning Team will prepare a study that will detail the following:

- Underutilized resources.
- Resources available to assist with coordination efforts.
- Ideas on how best to inform the community on the resources available.
- How better utilization of transit improves the quality of life in Boone County.
- A limited assessment of the probability of obtaining a local dedicated tax for public transportation based on public input, agency revenues, and interviews conducted in earlier tasks.

- Identify potential methods of achieving maximum utilization of existing resources.
- Detailed description of funding sources available to fund unmet need.
- Opportunities for coordination with other modes of transportation such as cycling.

The Planning Team will also facilitate a meeting with the transportation and business community to discuss possible coordination efforts. The Steering Committee will identify and recruit participants for this meeting. The Steering Committee will also be responsible to arrange for a location of the meeting.

The opportunities will be discussed initially with the Steering Committee during the meeting held prior to this task and then in detail as we meet to present Technical Memorandum #4. The Steering Committee will provide input regarding their perceptions of the various opportunities for coordination and will provide direction for the LSC team's work in Task 5.

Product: The results of this task will be detailed in Technical Memorandum #4.

Task 5: Potential for Coordination

Purpose: To furnish a report that outlines obvious potential coordinating opportunities, qualifies needs and wants, and details the potential economic development as a result of coordinating transit services.

Approach: The Planning Team, led by BMI-SG, will develop a report for potential coordination of the human services agencies in Boone County. This report will analyze the information gathered in the previous tasks and present it as the draft to the final report. As required by the RFP, this report will include the following:

- Obvious coordinating opportunities and alternatives: Research inevitably will show that there will be obvious coordinating opportunities that may be started easily with little or no additional costs. The Planning Team will point these out and methods on how the coordination will work.

- Identification of potential opportunities and alternatives: This section of the report will catalog potential coordination efforts and what administrative, operational, or financial efforts will be needed to see the coordinating effort to fruition. The Planning Team will draw from analysis of existing planning efforts, provide examples of other systems with similar experiences, and provide the best opportunities to maximize services. The Planning Team will also outline federal and state efforts—such as "United We Ride"—in this area and give examples of successful coordinating efforts in other communities similar to Boone County. We will

also qualify the needs and wants with a list of criteria of eligibility for existing services and funding and capacity of existing services.

- Detail potential economic and quality of life impacts: The Planning Team will generate estimates on positive economic and environmental impacts of coordinating transit services. Coordinated trips can carry more passengers per trip using fewer vehicles which will lead to less operational and maintenance costs and fewer emissions. It can also expand service areas which may allow individuals to find a job now that transportation is available which is a positive economic benefit.

All of the material presented in the four Technical Memoranda will be incorporated with the recommendations from this task into a Draft Report. The Draft Report will be submitted for review by the Steering Committee and the community. We recommend allowing several weeks between the submission of the Draft Report and the meetings of the Steering Committee and the public. This will provide ample opportunity for review of the Draft Report prior to the more formal presentation. We also recommend that the public meeting be held before the Steering Committee meeting so that Steering Committee members have the opportunity to hear the public comments before providing direction for any revisions to be incorporated into the Final Report. We will prepare PowerPoint presentations, display boards, and handouts as appropriate for these meetings.

Product: The product of this task will be a Draft Report for review by the Steering Committee and the community.

Task 6: Final Report

Purpose: To provide the final Coordination Initiative Report.

Approach: The Draft Report will be made available for public review and presented at public meetings as well as to the Steering Committee. The Draft Report will be presented to the BCCP for adoption. All public comments will be documented and addressed in the Final Report. Changes to the plan, based on public input and direction from local officials, will be incorporated into the plan.

Product: This task will provide the Final Report documents for the Boone County Coordinated Transportation Initiative. We will provide 20 bound copies of the Final Report, an original, plus an electronic copy in Adobe Acrobat (PDF) format on CD-ROM. We will also provide all databases and supporting documentation in electronic format.

Chapter II

CHAPTER II
Terminology

This chapter presents common transportation and transit industry terminology. Many of the terms are transit/transportation-specific, while some are general social terms. The definitions provide a common base from which to effectively discuss and debate future coordination efforts.

TERMINOLOGY

Accessibility - Accessibility is a concept used in transportation planning to describe the ease with which an individual has an opportunity to participate in an activity. The more accessible the activity is, the fewer travel barriers and less travel friction need be overcome to reach the activity. In common usage, accessibility is often used to mean the ability of the physically disabled to use transit or transportation facilities.

Note that accessability is also used, in common transportation parlance, as a measure of the number of activities than can be reached from a given location in a given time (e.g., the number of jobs within 45 minutes).

Availability of Service - For fixed-route systems, this factor can be expressed as frequency (the number of times per day or per week that a particular route is served); for demand-responsive systems, it is the reservation time (the number of hours or days between a call for a ride and the pickup). Also see Fixed-Route and Demand-Responsive.

Client Population - This measure consists of those persons who (or who are eligible to) participate in or benefit from an agency's program. Some of these will use their transportation system; some may not.

Communication - Involves recognition and understanding of a problem and discussion of possible solutions. This improves the working relationships among

various bodies who are in a position to influence transportation services within their particular jurisdiction.

Cooperation - Involves the active working together of agencies in some loose association in a cooperative way. The individuals or individual agencies retain their separate identities.

Consolidation - Involves joining together or merging agencies for mutual advantage. In the case of transportation services and in the context of this report, consolidation is used in reference to a fully-integrated transportation system in which all individual units have been combined or consolidated into one integrated system. Individual agency identity for the purpose of transportation is no longer maintained.

Coordination - The process of agencies striving to maximize the effective use of public transportation resources by actively sharing information and working to avoid duplication of activities or services. In coordination, the primary concern is in the form of common funds, equipment, facilities, or operations. Members or agencies preserve their separate identities.

Cost per Passenger-Trip (One-Way) - Total system costs (all operating expenses plus administrative costs plus capital costs on a depreciation schedule) divided by the number of passenger-trips. Costs and trips must be recorded over the same period of time.

Cost per Vehicle-Hour - Total system costs divided by the sum of the number of hours that each vehicle is operated in service. The typical usage is vehicle revenue-hours.

Cost per Vehicle-Mile - Total system costs divided by the total distance traveled by all vehicles in the system when they are in service. The typical usage is vehicle revenue-miles.

Deadhead Miles - Mileage driven when no passenger or package service is being provided. For demand-responsive systems, this is the total of all mileage at times when there is no reasonable expectation of carrying a passenger or package. This includes travel between the dispatch point and passenger pick-up or drop-off. For fixed-route systems, it is the mileage between the vehicle storage location and the start of the route (and vice versa at the end of the day). It does not cover mileage on the route.

Demand - The number of passenger-trips making use of a transportation service (or other service or resource). Demand will vary with changes in the inclusive cost (time, money, inconvenience, frequency of service, and other factors).

Demand-Responsive - Demand-responsive refers to any mode of transportation in which passengers are picked up upon their request. This is opposed to fixed-route, fixed-schedule transportation in which vehicles run fixed routes and schedules. Demand-responsive service will provide transportation for the traveler when and where he wants to go (within certain limits). Also see Fixed-Route.

Destination - Terminal end of a trip or the zone in which a trip terminates.

Effectiveness - For a transportation system, the effect is that people are moved from one place to another (i.e., trips). Measures of the effectiveness of a transportation system are, for example, the number of trips taken on it, or the number of individual persons that it serves. Or, a transportation system can be evaluated in terms of its effectiveness toward a social goal; for example, the number of persons who can take advantage of a particular social service because of the transportation system.

Efficiency - The efficiency of a transportation system will be some measure of the relationship of system inputs to system outputs. Transit planning has generally expressed this efficiency measure in terms of the ability to minimize an input (i.e., costs) to produce a unit of output. The most often used measures are cost per passenger or cost per vehicle-mile.

Elderly - The elderly are generally defined as those persons of 60 years or older; however, among the many federal statutes (and supporting regulations) which are concerned with the needs of the elderly, there are variations in the age specified for eligibility ranging from no specific age designated to age 65 and older.

Older Americans Act, Title III - Eligibility requires age 60 or over; Older Americans Act, Title III; Older Americans Act, Title IX – eligibility specified as 55 or over.

Fare Recovery Ratio (Farebox Recovery) - The ratio of fare revenue to direct operating expenses. See Operating Ratio.

Feeder Services - Those services which provide access to already existing public transportation systems.

Fiscally-Constrained - The financial limitation on transportation plans based on the projection of federal, state, local, and other revenues reasonably expected to be available over the 20-year planning period as adopted by the State Transportation Commission each six years prior to updating regional and statewide plans.

Fixed Costs - Typically those costs that are less (or not at all) sensitive to changes in service. They include such items as general supervision, overhead and administration, rents, debt service, etc. Fixed costs are differentiated from variable costs because they represent those costs that must be met whether the service operates or not. If the project runs into operating problems (e.g., loss of traffic), fixed costs will continue.

Fixed-Route - Fixed-route systems operate over a route serving a set of stops in a designated sequence, typically following an established schedule. The riders of such a system must schedule their activities around the locations at which service is provided during times when the service is being provided. This is in contrast to a demand-responsive system. Also see Demand-Responsive.

Headway - The time interval between transit revenue vehicles moving in the same direction passing a specified location.

Hours of Service - The number of hours during the day between the start and end of service on a transit route, also known as the service span.

Intermodal - Those issues, facilities, or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation, and coordination of various modes.

Level of Service - In transportation literature, level of service is generally defined as a measure of the convenience, comfort, safety, and utility of a system or system component (vehicle, facility, etc.) from the passenger's point of view. A variety of measures can be used to determine a particular component's level of service. In transit, level of service measures incorporate such factors as availability, frequency, etc. Level of service is typically designated in six ranges from A (best) to F (worst) for a particular service measure based on the passenger's perception of a particular aspect of the transit service.

Linked Trip - A trip from the point of origin to the final destination, regardless of the number of modes or vehicles used. See also Unlinked Trip.

Major Investment Study (MIS) - An element of the metropolitan transportation planning process that considers a full range of mobility alternatives where the need for a major transportation investment has been identified in a metropolitan area and determines the most appropriate transportation investment(s) therein.

Major Transportation Investment - A high-type highway or transit improvement of substantial cost that is expected to have a significant effect on capacity, traffic flow, level of service, or mode share at the transportation corridor or subarea scale.

Measures of Operating Costs - For the measurement of operating costs, there are four major unit cost measures that can be used (either separately or together) in

determining cost effectiveness: 1) cost per vehicle-hour, 2) cost per vehicle-mile, 3) cost per passenger-trip, and 4) cost per passenger-mile. See also Vehicle-Hour, Vehicle-Mile, Passenger.

Metropolitan Planning Organization (MPO) -- An organization within the state designated by agreement among the units of general purpose local government and the Governor, charged to develop the transportation plans and programs in a metropolitan area.

Mobility - Access to a transportation service; mobility represents the supply function of transportation services facing an individual (or group) when using transportation services. If two people have access to the same transportation services at the same price, then they have equal mobility.

Mobility Gap - The difference in household trip rate between households with vehicles and households without vehicles.

Mobility-Impaired/Limited - This term is used to refer to those with specific categories of physical or mental limitations to travel. Under the 2000 US Census, mobility-limited persons are those having a "go-outside-the-home disability."

Multimodal - Refers to: (1) all transportation modes individually; or (2) a comprehensive or integrated transportation model approach, often used interchangeably with intermodal.

Transit/Transportation Need - A requirement that transportation be used by an individual so that he or she may engage in or partake of an activity, program, or service. A community transport need is the sum of individual needs.

Activity Need - A requirement that an individual engage in, make use of, or partake of some activity, program commodity, or service in order to maintain their physical and/or mental well-being.

Non-Program-Related Trips - Non-program-related trips are those trips made for various purposes by individuals. The trips are not associated with a specific social service program, but are generated by the mobility needs of individuals including the elderly, people with disabilities, students, and the general public. Trips may be for any purpose other than travel directly to and from a social service program.

Non-Revenue-Hours and Miles - Hours and miles which reflect time spent by a transit vehicle waiting between pickups, deadheading, and carrying out some administrative task.

Off-Peak - Off-peak refers to those portions of a day in which demand for transportation service is comparatively low.

One-Way Passenger-Trips - Refers to the total number of boarding passengers carried on all routes.

Operating Ratio - The ratio of operating expenses to operating revenue. Thus, operating ratio indicates the financial efficiency of a system.

Origin - The beginning point of a trip or the zone in which a trip begins.

Paratransit - Paratransit is defined as those forms of passenger transportation which are distinct from conventional transit (scheduled bus and rail), and can operate over the highway and street systems. Types of paratransit include dial-a-ride, shared taxicab service, jitneys, subscription bus, carpools, vanpools, and short-term carpools, either company-owned or rental, each of which has characteristics suitable for different types of urban travel.

Paratransit, complementary - Service provided within a certain distance of fixed-route transit service to accommodate disabled passengers unable to use the fixed-route service as required by the Americans with Disabilities Act.

Passenger-Miles - The sum of the trip distances traveled by all passengers.

Passenger-Trips - The number of one-way trips by persons using the system. Each passenger counts as an individual trip even if there is group boarding and alighting at common points.

Passengers per Vehicle-Hour - The number of passenger-trips divided by the sum of the number of hours that each vehicle is operated.

Passengers per Vehicle-Mile - The number of passenger-trips divided by the number of vehicle-miles provided by all vehicles.

Passengers per Service Area Population (Annual) - The number of passenger-trips taken during a year's time divided by the population of the service area.

Peak Hour - That hour period during which the maximum amount of travel occurs. Generally, there is a morning peak and an afternoon peak. Peak hour refers to that hour of the day in which a transportation system experiences its greatest demand.

Point Deviation - A hybrid transit service, sometimes referred to as checkpoint service. The vehicle travels through prespecified points in accordance with a prearranged and published schedule. There is no specified route for the vehicle to follow between these points. The service may include door-to-door or curb-to-curb service, meeting the requirements for accessible demand-response service. Also see Route Deviation.

Productivity - The basic performance parameter that describes transit and para-transit service, defined as the number of passenger-trips per vehicle-hour of operation. Also see Trip. It is possible to also define productivity in terms of revenue-hours once the utilization ratio is known. Also see Utilization Ratio.

Productivity = Passenger-Trips/Vehicle Service-Hours

Program-Related Trip - Program-related trips are those that would not occur but for the existence and operation of a specific social service program. These trips are associated with travel to or from a specific social service program and program activities. Travel is generally restricted to program participants traveling for program purposes. The time of the trip and the destination are established by the program and not the traveler.

Public Transportation - Transportation by bus, rail or other conveyances, either publicly or privately owned, providing service to the public on a regular and continuing basis (but not including school buses, charter, or sightseeing service). Often referred to as mass transportation or transit.

Quality of Transportation Services - This has to do with the attractiveness or desirability of the service to the users—how well the service meets their needs. Some measures of the quality of service are frequency of service, fares, comfort, etc.

Ramp - Inclined passageway adaptable to mass transportation vehicles and capable of boarding and deboarding a wheelchair user.

Retrofit - To retrofit is to install some feature in an existing piece of equipment.

Revenue-Hours and Miles - Those vehicle-hours and miles during which the transit vehicle is actively providing service to passengers. For fixed-route service, this includes all the time spent on routes when passengers may board the vehicle. For demand-response service, this includes all time spent in actively providing passenger service. It includes the time and miles between dropping off one passenger and picking up another even though there may be no passengers onboard at the time.

Route - That combination of street and freeway sections connecting an origin and destination.

Route Deviation - A hybrid of fixed-route and demand-response service. The vehicle may deviate from a particular route occasionally in response to a specific request to pick up or discharge a passenger at a requested location and then return to the regular route. Deviations are generally small and must be limited to meet the designated schedule. See Point Deviation.

Seat-Miles - The total number of seat-miles for all vehicles used to provide passenger service. This is found by multiplying the number of seats on each vehicle by the number of miles driven by that vehicle and adding all of the products for each vehicle together.

Shared-Ride Taxi - Shared-ride taxi service is demand-responsive group riding where the riders may be traveling between different origins and destinations. A rider does not have exclusive use of the vehicle and fares are lower than conventional taxi service because of the economics associated with joint use of the vehicle. Taxi carpooling refers to a subscription-type shared-ride taxi service.

Special (or Specialized) Transportation Service - This term refers to a transportation service usually provided for or paid for by a social service agency for transportation for disadvantaged people.

Subscription Service - A bus or van service in which routes and schedules are prearranged to meet the travel needs of riders who sign up for the service in advance.

Target Population - Target population consists of those persons eligible to receive the benefits of the programs of each participating agency, whether in fact they take advantage of this opportunity or not.

Tie-Down - A position which may be used to restrain a wheelchair within the vehicle. Vehicle capacity usually includes the number of wheelchair positions or tie-down positions.

Transit Authority - The transit authority is a local or regional organization with responsibility for planning, funding, and sometimes operating public transportation services in an area.

Transit-Dependent - Those who have to rely on transit services instead of the private automobile to meet their travel needs. Also referred to as captive riders and Transportation Disadvantaged.

Transportation-Disadvantaged - Those who for reasons of age, disability, or income lack accessibility to that group of goods and services deemed necessary for at least a minimum standard of living. The transportation-disadvantaged include: 1) the elderly and the disabled who are unable to operate their own transportation and are unable to utilize the public transportation system due to steps being too high, etc.; 2) wheelchair users; 3) the low-income; and 4) zero-vehicle households.

Transportation Improvement Program (TIP) - A staged, financially-constrained, multi-year, intermodal program of projects which is consistent with the metropolitan transportation plan.

Travel Time - The time required to travel between two points, not including terminal time.

Trip - A one-direction movement which begins at the origin at the start time, ends at the destination at the arrival time, and is conducted for a specific purpose.

Trip Distance - The distance between origin and destination.

Trip Generation - A general term describing the analysis and application of the relationships which exist between the trip-makers, the urban area, and the trip-making. It relates to the number of trip ends in any part of the urban area.

Trip Priorities - Those trips which must be served, either because of the funding sources or by policy decision, before any optional trip purposes can be served. It is essential to identify these trip priorities because they represent a set of trips that must be considered fixed.

Trip Purpose - The reason for making the trip. Normally, the purpose is associated with the destination such as work, shopping, recreation, medical, or social. The purpose of the return trip to home is defined by the origin. For example, the trips from home to work and work to home are both work trips.

Trip Rates - This is a measure of travel demand. It is usually expressed in terms of the number of trips per person per day for a particular population segment.

Unlinked Trip - A trip segment made in a single vehicle or a single boarding of one transit vehicle in revenue service. See also Linked Trip.

Unit Cost - The unit costs of transportation services are the cost of providing a specific unit of service (i.e., cost/trip, cost/vehicle-mile, cost/vehicle-hour). The unit cost is used chiefly to measure efficiency of the system.

Unmet Need - A transportation need (see previous definition) for which an individual does not have a means to travel. Community unmet needs may be expressed as the aggregate of individual unmet needs.

Urbanized Area - As defined by the Bureau of the Census, a population concentration of at least 50,000 inhabitants, generally consisting of a central city and the surrounding, closely settled, contiguous territory.

Utilization Ratio - Ratio of revenue-hours to service-hours is denoted as the vehicle utilization ratio. The utilization ratio relates the actual hours billed for service to the total number of hours of vehicle service availability (measured by driver payroll hours).

User - An individual who makes use of a service or program.

Variable Costs - Those costs that are sensitive to changes in the actual level of service. They are usually affected by the vehicle-miles, vehicle-hours, or some other measure of level of service. Variable costs typically include such items as fuel, oil, tires and tubes, drivers' wages, and other items of expense that are sensitive to the level of operation. Vehicles and equipment items purchased have life expectancies which require that a depreciation factor be included when figuring costs. Most typically, depreciation is figured on a straight-line basis with a 10 percent residual salvage value at the end of that time. The length of time depends on the type of vehicle.

Vehicle-Hour - Either the time the engine is running, or the time a driver is assigned to a vehicle; the operating time for a vehicle. Useful in measuring operating costs. Revenue-hours are the hours when the vehicle is operating and available for passenger service.

Vehicle-Miles - The total number of miles driven on all vehicles used to provide passenger service. Revenue-miles are the miles operated by vehicles available for passenger service.

Want - A desire by an individual to partake of some service or engage in some activity. Wants may also relate to the character of transportation such as the type of service, type of vehicle, or frequency of service. Wants are highly individualized and not quantifiable on an aggregate basis.

Chapter III

CHAPTER III
Previous Plans and Studies

INTRODUCTION

This chapter summarizes previous plans and studies that have been undertaken for the Boone County area. Previous planning efforts give insight into how a community is to develop into the future and provides a vision, goals, objectives, and recommendations. Many of these plans are regional in nature; however, they provide guidance for the future and serve as a tool for evaluating current and future transportation issues. The available planning documents are reviewed for their relevance to the current Boone County Coordination Initiative as well as other important policy-shaping concepts.

COLUMBIA 2025 TRANSPORTATION PLAN

Background

The Columbia Area Transportation Study Organization (CATSO) prepared the 2025 Transportation Plan which encompasses the Columbia Metro Area and some areas into Boone County which are expected to urbanize within the next 20 years. In 1974, the Columbia Area Transportation Study was designated as an Metropolitan Planning Organization (MPO).

Goals and Objectives

The goals for the CATSO 2025 Transportation Plan are presented to provide insight into the vision of transportation for the urban area. These goals will be looked upon as possible future coordination of transportation resources evolves. The following are the goals as stated in the CATSO 2024 Transportation Plan:

- Plan and develop a coordinated and comprehensive intermodal transportation system to provide for safe and efficient movement of people and goods within and through the community.
- Provide coordination with applicable land use and development plans in order to ensure that the transportation system contributes to orderly development of the community;

- Identify policies to make more efficient use of the existing transportation system to accommodate existing and future travel demands, and specify facilities which should function as part of the integrated metro area transportation system.
- Integrate all forms of transportation, where possible, focusing in particular on alternate forms of transportation to the auto in order to reduce congestion and environmental impact, save energy, and provide a reasonable alternative to driving.
- Analyze the socioeconomic and environmental impacts of all transportation projects.

City of Columbia Policy on Providing Transit Service

The following policy on the provision of transit service within Columbia is presented for review. Columbia Transit provides the fixed-route service within city boundaries and has been operating since 1965.

- Provide public transportation in the most cost-efficient manner possible.
- Develop public confidence in the public transportation system.
- Establish and maintain a direction for growth of the public transportation system and a level of commitment to future service.
- Encourage the use of public transportation as an alternative to travel by automobile to promote the preservation of the environment through the conservation of fossil fuel resources and improved air quality.

Overall Plan Recommendations and Comments

The following list provides the recommendations in the 2025 Plan as they pertain to public transportation:

- Transfer facility should remain at the current Wabash Station.
- Major employment areas should be served by Columbia Transit.
- Changes to the Columbia and Boone County Zoning Ordinance to allow higher densities and a greater mix of land uses would be a step toward establishing a new pattern of development more compatible with alternative modes of transportation.
- The current City of Columbia Master Bicycle Plan be replaced by a more comprehensive pedestrian/bicycle network that will cover the entire Columbia metro area.

MODOT'S LONG-RANGE TRANSPORTATION DIRECTION

Background

The Long-Range Transportation Direction (LRTD) represents Missouri's Statewide Transportation Plan for the next 20 years. The plan was completed in 2001 and provides a comprehensive picture of Missouri's transportation needs. According to a survey conducted as part of the plan, Missourians' top transportation goals were a safer transportation system. Approximately 12 percent reported that *developing multiple types of transportation* as the top goal, and approximately 10 percent reported that *improving connectivity between modes* was the top goal.

The following goals were developed in cooperation with MoDOT's transportation partners who represented rural and urban areas:

- Ensure safety and security in travel, decreasing the risk of injury or property damage on, in, and around transportation facilities.
- Take care of the existing system of roads, bridges, public transportation, aviation, passenger rail, and ports.
- Relieve congestion to ensure the smooth flow of people and goods throughout the entire system.
- Broaden access to opportunity and essential services for those who cannot or choose not to drive.
- Facilitate the efficient movement of goods using all modes of transportation.
- Ensure Missouri's continued economic competitiveness by providing a safe, reliable, and efficient transportation system.
- Protect Missouri's environment and natural resources by making investments that are not only sensitive to the environment, but that also provide and encourage environmentally beneficial transportation choices.
- Enhance the quality of our communities through transportation.

"While all modes of transportation have needs that cannot be met with existing funding, highways and bridges, passenger rail and bus service between cities, and public transportation have the costliest needs. Establishing priorities among each mode's needs allows MoDOT to meet the most important needs first."

- Highway and bridge investments will concentrate on the NHS and remaining arterials and establish goals for the entire highway and bridge system.
- The state's most important passenger rail needs can be met by implementing the Midwest Regional Rail Initiative (MWRRI) on existing rail tracks with modifications between St. Louis and Kansas City.
- Missourians consistently rated public transportation as a high-priority need. Trying to meet 90 percent of the established needs will bring significant improvements in urban and rural areas.

Throughout the course of the LRTD, MoDOT studied each transportation mode in detail and separately, then combined all the modal information into the final comprehensive direction setting plan. The modes which relate directly to public transportation systems and MoDOT's policies regarding each mode is presented in the following section.

Bicycle and Pedestrian

MoDOT stated in the LRTD that it will implement the following policies to guide investment in bicycle and pedestrian accommodations.

- MoDOT will incorporate bicycle and pedestrian accommodations in state transportation improvement projects when deemed appropriate and will consider providing for pedestrian and/or bicycle accommodations during preliminary studies, design, and construction.
- Improvements that provide the ability to cross major roadways and provide a link for neighborhoods, schools, recreational facilities, medical facilities, employment centers, and shopping areas will receive particular attention.
- MoDOT will develop or support the following items:
  - Identification and analysis of existing bicycle and pedestrian facilities on the state transportation system.
  - Education on use, safety, and benefits.
  - Recommendations on corridors and routes that comprise a state facility network.
  - Technical advice and input.
  - Establish standards for bicycle and pedestrian facilities, and work to integrate the USDOT policy for bicycle and pedestrian facilities into MoDOT policy.

Intercity Passenger Bus and Rail

The following policies will guide MoDOT investment in intercity bus and rail programs:

- MoDOT will continue to support the preservation of the existing intercity passenger service and expanded service within Missouri and to destinations outside the state.
- MoDOT will develop a comprehensive planning process to consider the economic impacts of improvements to the passenger rail and intercity bus systems. This might include expansion of existing service and adding new services.
- MoDOT will support the MWRRI in the development of an improved passenger rail corridor between St. Louis and Kansas City.
- MoDOT will work with service providers to educate the providers and the public about the mobility needs of the elderly, disabled, children, and those with low incomes.

Public Transportation

The following are excerpts taken from the LRTD:

> *"Public transportation agencies in small urban areas struggle to maintain service levels and do not provide service to their entire urban areas...The existing needs for public transportation include preserving the existing level of service and increasing the level of service."*
>
> *"Access to public transportation is limited in rural areas. Because there are fewer mobility options for residents without access to automobiles, rural public transportation needs are growing. Few rural systems offer service to employment, schools, volunteer activities or community events. Better access to medical and nutritional services is especially important to certain segments of the population like the elderly and persons with disabilities."*
>
> *"MoDOT believes approximately 90 percent of the projected needs must be met to adequately serve the needs of Missourians. That equates to approximately $392 million per year for the next 20 years."*

The following policies were presented to guide investments in public transportation:

- MoDOT will consider public transportation in its efforts to preserve and enhance Missouri's overall transportation infrastructure, environmental quality, and economic vitality. MoDOT will assist local communities in developing and maintaining public transportation systems that are safe, effective, and cost-efficient.

- MoDOT will support the preservation, maintenance, expansion, and enhancement of public transportation infrastructure including vehicles, facilities, and other assets. It will partner with law enforcement and civic groups to incorporate safety and security in public transportation facilities.
- MoDOT will work to establish stable and sustained funding mechanisms for public transportation projects and plan, facilitate, provide funding assistance, and establish service level guidelines for public transportation services.
- MoDOT will emphasize that transportation services and providers meet community needs and that transportation projects offer economic benefit to those communities.

MISSOURI STATEWIDE PASSENGER TRANSPORTATION STUDY

Background

Several "white papers" are provided regarding different elements of the Missouri Statewide Passenger Transportation Study. Two of these deal with (1) education transportation and (2) issues related to elderly and disabled transportation, including non-emergent medical transportation. These two documents are reviewed briefly for their relevance to Boone County.

Education Transportation Services in Missouri

The Missouri Department of Elementary and Secondary Education (DESE) tracks education statistics, including transportation information. In 2004, the DESE reported that the State of Missouri spent approximately $305 million on education-related transportation. Districts are reimbursed through DESE and can either contract out for service through a private provider or provide service with their own equipment and drivers. At the time of this report, 26 percent of the districts contracted for service. Currently, Columbia School Districts contract with First Student, a private for-profit firm.

While publicly-owned school buses in Missouri *cannot* be used for any other general transportation services, private contracted firms, such as First Student, may contract out and use their buses anytime not required by the school. Funding for school-aged children cannot be done for any other mode other than the contracted or operated school bus; i.e., students cannot get funding for public transit, primarily because of a stated safety issue.

School buses are the primary means of providing transportation for school-aged children and generally these services are not coordinated with other public transportation services, according to this report.

Elderly and Disabled Transportation Issues

This report entitled, *Transportation Issues Related to the Elderly and People with Disabilities Including Non-Emergency Medical Transportation, MoDOT Statewide Passenger Transportation Study,* examines the transportation needs of the elderly and persons with disabilities as well as the issues and trends in the use of public transportation by these groups. This report is lengthy and provides good insight into the statewide issues. Presented for review are the recommendations which MoDOT can take to improve conditions for the elderly and disabled, as taken from the report:

- Increase the level of coordination between services, especially between intercity and local modes, with the goal of providing a seamless and convenient mobility-based system. Coordination of local modes, especially paratransit, is already excellent; it is in the extension of this model to the intermodal level that MoDOT can play a role. These efforts should include detailed consideration of the needs of elderly and disabled passengers.
- Increase the amount of information available to the public regarding existing non-automobile transportation systems, in multiple accessible formats (Web page, telephone hotline, etc.) that move toward a "one-stop shop" approach.
- Define standard minimum transit service (including careful consideration of the needs of the elderly and disabled passengers as well as requirements of the ADA), and then secure funding to provide that level of service across Missouri.
- Develop methods for measuring the performance of Missouri's passenger transportation system with respect to the elderly and disabled; monitor the system and make improvements over time as necessary. Reliability and cost-effectiveness are two potential performance measures to consider in this process.
- Monitor upcoming changes in the ADA (and associated regulations) and understand their implications for Missouri's passenger transportation system; continue to be cognizant of ADA-related regulations in developing statewide policies and procedures for both design and planning.
- Consider introducing capitated rates and managed health-care models to provide for innovations and incentives for efficiency.

INTERCITY SURFACE TRANSPORTATION SERVICES DEMAND ESTIMATE WITH CORRIDOR ANALYSIS - *DRAFT*

Background

This Draft Report discusses demand estimates for intercity bus and rail throughout Missouri. The findings from this draft estimate that total intercity bus ridership in 2002 was 736,789 with estimates in 2035 of 830,897 riders. These estimates were further broken down by corridor. The corridor of importance would be the St. Louis/Kansas City I-70 corridor. In 2000, the estimated bus demand was 127,342 with projected 2035 demand at 135,712 riders. While it is safe to say that most of these riders are passing through Boone County either on their way to St. Louis or Kansas City, some riders have their origin or final destination in Boone County.

Chapter IV

CHAPTER IV
Summary of Key Interviews

INTRODUCTION

This chapter presents a brief summary of the key interviews of local community representatives and stakeholders. Interviews were scheduled the week of August 22, 2005. Key community representatives included some of the following:

- Mayor, City of Columbia
- Mayor, City of Centralia
- Boone County Commissioners
- President of Chamber of Commerce
- City Manager, City of Ashland
- Columbia City Council Representatives
- PEDNET
- Missouri University
- United Way
- City Manager, City of Columbia

While these interviews by no means reflect every view of every person in the area, they do provide a great sense of public opinion. Interviewees were asked several open-ended questions, such as the following:

- What are the major transportation issues facing Boone County in the next 5 to 10 years?
- What approaches should be taken to address these issues?
- Is there a role for public transportation in solving some of these issues? Why or why not?
- What is the community's view of public transportation services such as Columbia Transit and OATS?

- Would the community support increased funding to improve public transportation services? If so, in what form (i.e., sales tax, property tax, general funds, other)? If not, why not and what might it take to gain that support?
- Are there specific issues which should be addressed in our current study?

Respondents were then asked follow-up questions depending on how they answered the questions. Interviewees were also asked to provide additional comments, suggestions, or to ask questions about the study and process. In the interest of anonymity, responses to questions were paraphrased and not attributed to a particular individual, office, or agency. In general, respondents were quite receptive to the idea of coordinating resources in the interest of cost savings, time savings, and numerous other advantages. On the other hand, some respondents did not see the benefit of this effort and believed that if agencies are not coordinating services now, why would they choose to do it in the future? Some respondents also believed that "turf wars" would inhibit agencies from wanting to coordinate services, even if they could realize a benefit.

RESPONSE SUMMARY

The summary of responses is provided as a background on emerging issues in Boone County. The entirety of the responses were considered during this project; however, not all responses are provided. While all interviews followed the same structure, many times follow-up questions were asked to clarify something, address specific comments, probe for a clearer response, or just to gain insight. The responses to the main questions are provided by question. Again, responses are summarized for all respondents. There was a multitude of responses to the questions posed, depending on what community the respondent was from, the age of the respondent, the position the respondent represented, and who the respondent represented. No two responses were exactly the same; however, many of the same themes became apparent from the responses. The common responses as well as those unique responses are presented.

Question #1: What are the major transportation issues facing Boone County in the next 5 to 10 years?

Common Responses

- Many of the respondents felt that the major transportation issues in the coming years are primarily in the rural areas of Boone County. The City of Columbia currently has existing service; however, as the city grows, the transit system has to grow to meet those needs.
- As gas prices rise, people will think about the costs associated with transportation more than they do now.

- Lack of transportation to services is seen as a real problem in the rural areas of the county. Lack of trips to healthcare, shopping, and employment ranked at the top, while trips for recreation and social rank lower.
- Emergency vs. non-emergency medical trips must be addressed.
- Lack of employment trips makes it hard for persons to get to jobs, especially second-shift employment.
- As the urban area continues to grow, the current transportation system will become stretched. There is a need to look at multimodal aspects rather than one solution to transportation.

Other Uncommon Responses

- There is not a transportation issue, rather a social issue.
- There needs to be more funding for roads and bridges, as transit is not that effective.
- There needs to be more frequent service in the county.
- There is a lack of vision and priorities of service and standards.

Question #2: What approaches should be taken to address these issues?

Common Responses

- Coordinate resources, not more resources.
- People who need services should move closer to services, rather than trying to provide transportation to outlying areas.
- The current services need to be marketed. There needs to be a more central location to find information about service.
- Not sure of how to approach this.

Other Uncommon Responses

- Move social service agencies to one central location.
- There needs to be more support for coordination efforts.

Question #3: Is there a role for public transportation in solving some of these issues? Why or why not?

There was not a great deal of response from this question. Many respondents felt that there must be some way of solving some of the issues with transportation; however, few could offer specific ways to do this. Many felt that public transportation is handling some of the issues; however, it could improve, such as operating later at night to provide access to second- or third-shift employment. Commuter

options were discussed; however, most felt that this would not be effective as most drive their own private vehicle.

Question #4: What is the community's view of public transportation services such as Columbia Transit and OATS?

Common Responses

- There is an awareness of OATS; however, unawareness of all the services they provide in their community.
- OATS works well for medical and shopping; however, it does not do very well for employment transportation.
- Columbia Transit needs to review the routes to determine if they are serving the areas which need the greatest amount of service.
- Paratransit does not work well.
- They don't coordinate now.

Other Uncommon Responses

- Public transit is not effective or cost-efficient.
- Too much money is spent on transportation now.

Question #5: Would the community support increased funding to improve public transportation services? If so, in what form (i.e., sales tax, property tax, general funds, other)? If not, why not and what might it take to gain that support?

Common Responses

Most reported that they did not think there was support for this. The City of Columbia has had success in the past passing tax increases for transportation; however, it is felt that this may be tougher to do in the rural county. This would likely be in the form of a sales tax, as in the past. This is always a heavily debated issue when it comes up on the ballot.

Other Uncommon Responses

A large amount of current tax dollars may be being spent on other transportation issues which do not necessarily help those who truly need alternate forms of transportation.

Question #6: Are there specific issues which should be addressed in our current study?

Common Responses

- Should address the needs of both the disadvantaged and choice riders.
- Must address those gaps in service (i.e., nights, weekends, other) for employment.
- Must be conscious of overall impacts and how coordination impacts current resources.
- What resources really exist? Are these agencies/organizations really willing to coordinate with each other?
- The results should be as thorough an inventory as possible and comprehensively examine the challenge for coordination.

SUMMARY

While the interviews helped to gain insight into support for transportation, as with all types of interviews, no two answers were the same. Generally people felt coordination of service would be a positive approach; however, the challenges and barriers to coordination must be overcome. These include such things as:

- Financial sharing of resources between agencies who compete for this funding;
- A reluctance to give up clients/participants to others;
- Any state and federal regulations prohibiting such coordination efforts;
- Must show that this is advantageous to an agency/organization and political leaders; and
- Must present this information in a clear manner so as not to become confusing.

The interviews provided valuable insight from community leaders and representatives. The information gleaned from interviews—combined with survey responses, public open houses, and focus groups—provide a comprehensive look at community transportation needs and support for coordination efforts.

Chapter V

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER V
Summary of Data Collection Efforts

This chapter presents a summary of data collection efforts for transportation providers. LSC Transportation Consultants, Inc. subcontracted with the Center for Advanced Social Research, School of Journalism, University of Missouri - Columbia, to provide assistance in the collection of agency information. The Center has the resources available to efficiently mail and provide follow-up phone calls to agencies and organizations. The following section outlines the process for collecting the needed information from agencies to complete this coordination initiative.

INITIAL AGENCY SELECTION

As mentioned previously, it was determined that there were two distinct categories of agencies which would need to be contacted for information. The first category developed included those agencies which provide transportation as a primary function. Only two agencies—Columbia Transit and OATS—were deemed to provide transportation as their primary function. The second category of agencies were those who were identified to provide, at least in some respect, transportation as a function of their agency. This transportation is provided primarily to agency clients. "Client" is being defined loosely as that portion of the public which is served by the agency or organization. Typically, if a person was not being served by the agency, they would not be provided transportation. Examples of agencies include, but are not limited to, the following:

- Churches
- Day cares
- Schools
- Medical facilities
- Senior service facilities
- State or local human service agencies

DEVELOPMENT OF QUESTIONNAIRES

The development of suitable questionnaires was an important aspect of data collection. Several rounds of questionnaire development occurred between LSC and the Steering Committee. The final questionnaires are presented in Appendix A. Two separate questionnaires were developed for transit providers and human service providers. Many of the same questions are used in both questionnaires. The questionnaires were designed to:

- Determine the level of transportation provided;
- Determine the amount of financial resources available for the provision of transportation services;
- Determine the clientele supported by services;
- Identify both short- and long-term agency needs; and
- Identify support for coordination.

The questionnaires also asked several open-ended questions where respondents had the opportunity to provide additional information. The questionnaires were designed using previous experience with agency questionnaire design by LSC and resources provided through the Transit Cooperative Research Program.

Questions were also posed with multiple choice answers. These types of questions allow for some comparability across providers. However, the diversity of the agencies, the types of transportation needs, available resources, and other factors limit the amount of comparability.

Letter of Support

A Letter of Support was drafted by the Steering Committee for use as a tool to gain support and lend credibility for the data collection efforts. This was seen as a vital element of supporting information to encourage the agencies to fill out and return the questionnaire. Appendix B presents a copy of the final letter enclosed in each mailed-out questionnaire. The letter was cosigned by the Mayor of Columbia and a Boone County Commissioner.

COORDINATION OF DATA COLLECTION EFFORTS

Questionnaires were mailed out from CASR on Monday, September 19, 2005. A week-long deadline was given to agencies and organizations to return the questionnaire to CASR. Questionnaires could be returned by mail, fax, or e-mail. Follow-up phone calls were made on September 22, 2005. On September 23, 2005 numerous questionnaires were returned with the wrong address and were subsequently hand-delivered to the correct location. One was returned marked "Return to Sender." On September 27, 2005, eleven surveys were returned, four were re-sent out to respondents via e-mail. On September 30, 2005, 53 surveys had been returned of the 117 sent out. A second round of phone calls ensued, and two more had to be hand-delivered when the respondents had lost or misplaced the originals. On October 4, 2005, 13 more were received via fax and mail. A total of 75 usable questionnaires were received and entered into a database for analysis. Appendix D presents the disposition and follow-up efforts documented by CASR and LSC.

Chapter VI

CHAPTER VI
Transit Provider Summary

There are only two true transit providers providing service in Boone County. The two agencies contacted for information were Columbia Transit and OATS. Both agencies provided requested information which is summarized in the following text and tables.

COLUMBIA TRANSIT

Background

Columbia Transit is the general public provider in the City of Columbia. Service began 40 years ago in 1965. Under the umbrella of Columbia Transit, several services are offered: fixed-route, paratransit, and MU shuttle services. Columbia Transit provides nearly 1.4 million passenger-trips annually. Currently, Columbia Transit does not coordinate with any other transportation provider. There are 33 full-time employees involved in transit and 29 part-time employees (including seasonal employees). Columbia Transit falls under the Columbia City Manager and Public Works Department.

Services

Fixed-Route

Fixed-route bus service within Columbia's city limits is accomplished using seven routes designated by number and color. Bus service starts at 6:25 a.m. and operates on various schedules ending anywhere between 5:30 p.m. and 1:30 a.m, with scaled-back Saturday service. No service is provided on Sunday. Fixed-route service provides nearly 533,000 annual passenger-trips. Passengers currently can flag down any fixed-route bus at the end of a block for a ride.

Paratransit

Columbia Para-Transit provides specialized van service for persons with disabilities and elderly who are unable to use the fixed-route bus system. Service is provided

curb-to-curb within three-quarters of a mile from the fixed route. Riders must meet eligibility requirements and become certified riders. The one-way fare is $1.00. Paratransit service is offered during the same hours as the fixed-route service. The service provides approximately 24,000 annual trips.

MU Service

The final service Columbia Transit provides is contract service with the University of Missouri. Service is provided with three routes which cover the main campus. This service is operated during the fall and winter semesters only. Nearly 808,000 annual trips are provided. Service is provided through student fees.

Financial

Columbia Transit is funded through a combination of FTA 5307 (urbanized) funds, FTA 5309 (discretionary) funds, a local dedicated transportation sales tax, fares and donations, and State of Missouri. Total operating costs are approximately $3.3 million annually, of which 63 percent represents fixed-route operations.

Facilities

Columbia Transit operates out of two facilities. The first is the *Wabash Station* located at 126 North 10th Street in Columbia. This facility is the main transfer hub for both fixed-route and paratransit routes. This facility is where buses are dispatched and is the main administrative office of Columbia Transit. This building used to be the Wabash Train Station and is nearly 100 years old. The facility is under refurbishment to enhance customer service and administrative operations for Columbia Transit.

Wabash Station

The second facility is the *Grissum Building*, located at 1313 Lakeview. This is a shared maintenance and storage facility for the Public Works Department, of which Columbia Transit is a division. This facility is used to store all Columbia Transit

vehicles which are maintained through the Fleet Operations Division of the Public Works Department.

Performance Measures

Columbia Transit's baseline performance measures are shown in Table VI-1. The performance measures reflect the cost allocation provided by Columbia Transit.

Table VI-1
Columbia Transit Service Summary

Route/Service	Annual Passenger-Trips	Annual Vehicle-Miles	Annual Vehicle-Hours	Service Cost	Cost per Passenger	Cost per Mile	Cost per Hour
Fixed-Route	532,828	425,793	32,450	$2,114,140.00	$3.97	$4.97	$65.15
Paratransit	23,609	117,995	13,426	$646,164.00	$27.37	$5.48	$48.13
MU Shuttle	807,731	89,500	17,376	$583,924.00	$0.72	$6.52	$33.61
Total Services	1,364,168	633,288	63,252	$3,344,228.00	$2.45	$5.28	$52.87

Source: Columbia Transit, LSC, 2005.

Capital (Vehicles)

Columbia Transit has a fleet of 33 vehicles. Table VI-2 provides a listing of those vehicles including make and year.

Table VI-2
Columbia Transit Vehicle Inventory

Type	Year	Number of Units
Chevrolet Pick-up	2005	1
Van (no lift)	1992	1
Diamond Cutaway	1999	4
Diamond Cutaway	2001	2
Diamond Cutaway	2004	2
Toyota Prius	2005	1
New Flyer (40')	1995	2
New Flyer (40')	2000	2
New Flyer (40')	2001	5
New Flyer (30')	2001	6
El Dorado National (30')	1997	5
Gillig (40')	1989	2
Total Units		**33**

Source: Columbia Transit, 2005.

Agency Needs

Columbia Transit states that short-term needs include refurbishment of the Wabash Station, purchase of vehicles, and passenger amenities. Table VI-3 provides Columbia Transit's short-term needs and anticipated costs.

Table VI-3
Columbia Transit Short-Term Needs

Activity	Anticipated Cost
Refurbish and Expand Wabash Station	$2,932,892
Purchase Paratransit Vehicles	$104,000
Purchase 40' Low-Floor Buses	$526,000
Passenger Amenities	$100,000
Total	**$3,662,892**

Source: Columbia Transit, 2005.

OATS, INC.

Background

OATS is a private, nonprofit specialized transit provider which operates in 87 Missouri counties. OATS has been in operation since 1971 and provides door-to-door transportation services to individuals with little or no alternative form or transportation. In urban areas, they provide service to those 60 years and older and the disabled. In rural areas, routine service is also open to the general public.

OATS is funded by a combination of federal, state, and local funds. Government funding through contracts with various agencies covers the cost for the elderly/ disabled riders, while the general public riders are encouraged to pay the full suggested donation for service.

Services

OATS provides service Monday through Friday 7:00 a.m. to 5:00 p.m. in Columbia. Service between the communities of Ashland, Central Boone County, Rocheport, and Columbia is provided on Mondays. Service between Centralia, Hallsville, Sturgeon, and Columbia are provided on Tuesdays. OATS' annual ridership is

approximately 35,337 one-way trips. Table VI-4 provides the rider breakdown by category. As shown, the greatest majority of riders are the elderly, representing 60 percent of all trips.

Fares are based upon a suggested donation of $3.00 per trip in town, $5.00 within the county, and $7.00 to an adjacent county. However, no ride will be denied on the basis of payment.

Table VI-4
OATS Trip Categories

Fare Category	Annual One-Way Trips	% of Total
Elderly	21,207	60%
Under 60 yrs.	9,607	27%
Disabled	4,500	13%
Total	**35,314**	

Source: OATS, 2005.

Financial

Boone County is one county of a 15-county region in the mid-Missouri area, and therefore it is difficult to breakdown costs by county. However, OATS did provide some information for Boone County. The Boone County program costs approximately $500,000 annually to operate. Program revenues are shown in Table VI-5. As shown, the largest portion of revenue comes from federal dollars. The State of Missouri and Program Service Fees make up the next largest share of revenue. As shown, Boone County and the City of Columbia provide approximately $21,000 annually to OATS.

Table VI-5
OATS Revenue Sources FY2004

Revenue Source	FY2004 Actual
Columbia Area United Way	$23,000
Fundraising/Direct Support	$10,000
Boone County	$8,000
City of Columbia	$13,000
Federal (Medicaid, Title III, etc.)	$335,406
State	$47,546
Program Service Fees	$59,302
Total	**$496,254**

Source: OATS, 2005.

Facilities

OATS has its main Mid-Missouri Regional Office in Columbia. There is covered parking for the Boone County fleet, including wash bays and a fueling station.

Performance Measures

Transit performance measures are presented in Table VI-6. At present, OATS has a cost of approximately $14.66 per trip and cost per hour of $25.11, a fairly efficient service by county demand-response standards.

Table VI-6
OATS Transit Service Summary

Service	Annual Passenger-Trips	Annual Vehicle-Miles	Annual Vehicle-Hours	Service Cost	Cost per Passenger-Trip	Cost per Mile	Cost per Hour
Demand-Response/ Subscription	35,337	247,549	20,636	$518,139	$14.66	$2.09	$25.11

Source: OATS, LSC, 2005.

Capital (Vehicles)

OATS has a fleet of 14 vehicles. Table VI-7 provides a listing of those vehicles, including make and year. Primarily, vehicles are modified vans and several small buses. Most vehicles are wheelchair-equipped.

Table VI-7
OATS Transit Vehicle Inventory

Type	Year	Number of Units
Dodge Van (Modified)	1997	3
Dodge Caravan	1999	1
Ford Mini-bus	1999	1
Chevrolet Mini-bus	2000	1
Dodge Van (Modified)	2000	1
Dodge Caravan	1999	1
Dodge Van (Modified)	2002	4
Dodge Caravan	2000	1
Ford Van (Modified)	2005	1
Total		**14**

Source: OATS, 2005.

Agency Needs

Short-Term (1 to 6 years)

OATS indicated that short-term needs include vehicle replacement, securing additional operating funds to increase scheduled service in Columbia and Boone County in the amount of $100,000 annually, and upgrading dispatch and scheduling software. Table VI-8 provides the short-term agency needs.

Table VI-8
OATS Transit Short-Term Needs

Activity	Anticipated Cost
Replace Three Vehicles	$75,000
Secure Additional Funding (Operating Annually)	$100,000
Upgrade Dispatching Software	n/a
Total	**$175,000**

Source: OATS, 2005.

Long-Term (7 to 20 years)

OATS continues to require vehicle replacement in the next 20 years. They estimate replacing nine vehicles at a cost of approximately $75,000 each. Long term, OATS would like to see a tax-based supported transit system in the county.

County Unmet Needs

OATS indicated that within the next five to ten years, the major unmet transportation needs in Boone County include those related to employment transportation (especially third shift and weekends), medical and essential shopping transportation for elderly and disabled, and recreational (life enhancement) transportation.

COORDINATION INTEREST

As part of this project, all agencies surveyed were asked to indicated the level of interest in a number of coordination strategies. Table VI-9 indicates the coordination level as responded to by Columbia Transit and OATS. As shown, Columbia Transit has a high interest in "Highlighting connections to other fixed-route or demand-responsive services on [your] schedules or other information materials." However, Columbia Transit is not interested in several of the activities. OATS

responded as being either interested or possibly interested in all but one category of coordination, purchasing services from another agency.

Table VI-9
Coordination Strategies and Responses

	Columbia Transit Responses				OATS Responses			
	Interested	Possibly Interested	Not Interested	Not Applicable	Interested	Possibly Interested	Not Interested	Not Applicable
a. Providing transportation services, or more transportation services, under contract to another agency or agencies.			✓		✓			
b. Purchasing transportation services from another organization, assuming that the price and quality of service met your needs.			✓					✓
c. Coordinating schedules and vehicle operation with nearby paratransit providers so that riders can transfer from one service to another.		✓			✓			
d. Joining together with another municipality or agency to consolidate the operation of transportation services.			✓			✓		
e. Joining together with another municipality or agency to consolidate the purchase (or contracting) of transportation services.			✓		✓			
f. Highlighting connections to other fixed-route or demand-responsive services on your schedules or other information materials.	✓				✓			
g. Adjusting hours or frequency of service.			✓			✓		
h. Coordinating activities such as procurement, training, vehicle maintenance, and public information with other providers.		✓				✓		
i. Participating in an organized county-wide transportation marketing program.		✓				✓		

Source: Transportation Manager, Columbia Transit, 2005.

Chapter VII

CHAPTER VII
Human Service Agencies Summary

This chapter provides a review of those agencies which were identified by the Steering Committee as providing some type of passenger transportation. These agencies and organizations represent myriad nonprofit, for-profit, private, and public agencies which serve in a human service capacity. Some of these agencies reported that they do not, in fact, provide transportation services; however, they may have some identified need. The "providers" are presented in text, tables, and graphs, and will be used when coordination strategies are developed throughout this project. This information is critical in determining what transportation resources exist in the county. Many times, agencies do not provide direct transportation services; however, they may provide vouchers, tickets, passes, or some other transportation assistance. These financial resources are as important as identifying the actual agencies which physically transport people.

The objective of this effort was to:

- Determine the extent to which social service agencies serve Boone County residents.
- Identify the existing resources available—financial, capital, and other resources.
- Assess the effectiveness of current resources.

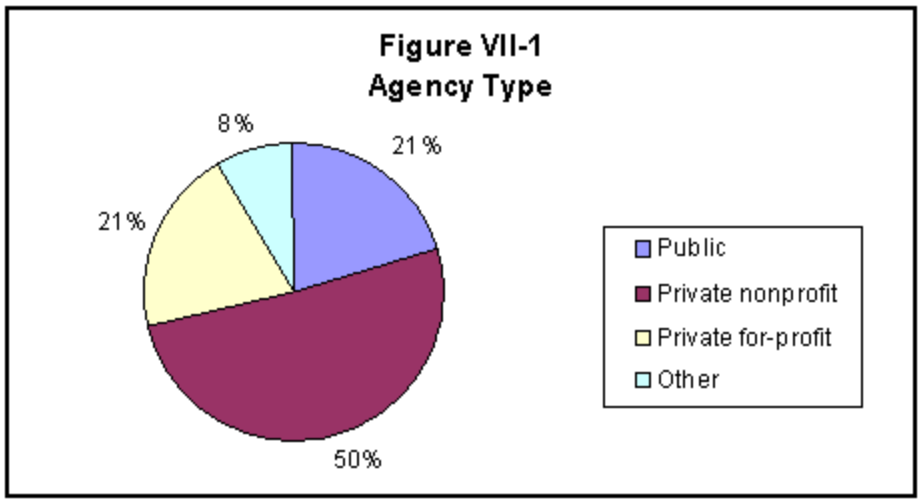
DETAILED SUMMARY

Human Service Agencies Profile

State and local governments invest considerable resources in transportation services for their participants. While transportation is not the primary function for many of these agencies, the need to support mobility for their clients makes transportation a key program area.

Agency Type

Over half (50.7 percent) of the agencies responding to the survey were private nonprofit. Twenty-two percent of the responses were from public agencies. Figure VII-1 summarizes the type of agencies.



Services Provided

All agencies were asked to provide a list of the primary social services their agency provides. These responses are summarized in Table VII-1.

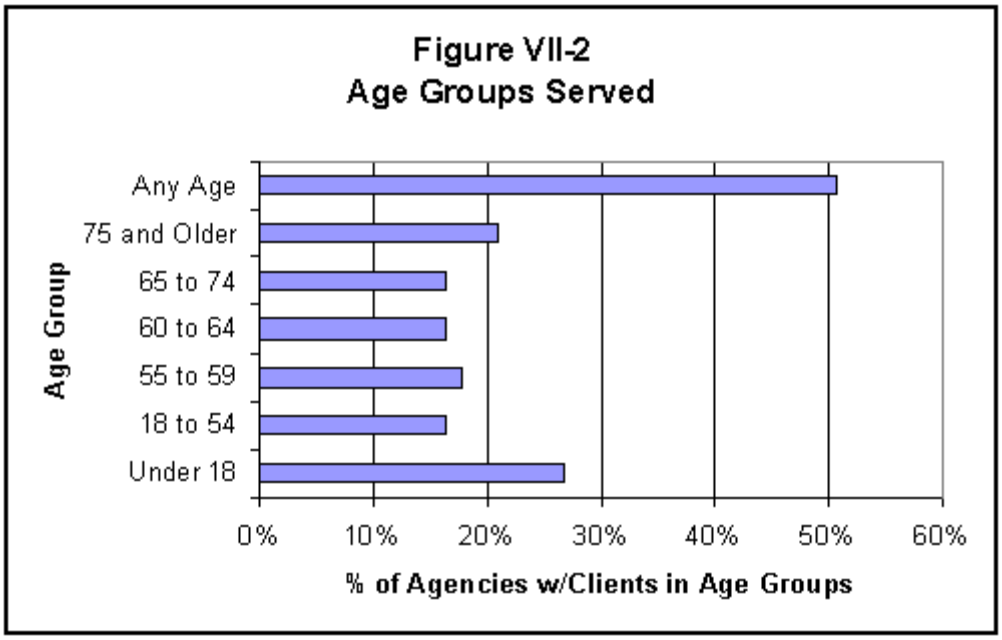
Table VII-1
What type of primary services does your agency provide?

Type of Service	% Providing Service
Alcohol, Tobacco or Drug Education and Treatment	13%
Diagnosis and Early Evaluation	8%
Education/Training	29%
Employment Opportunities/Job Placement	18%
Health Care	19%
Housing	16%
Child Care	21%
Community Support Networks	16%
Family Support and In-home Assistance	8%
Family Safety and Protection Housing	5%
Nutrition	11%
Life Skills Development and Assistance	16%
Transportation	29%
Residential Care	18%
Other	37%

Column sums to more than 100%. Multiple responses allowed.

Population Served

Responding agencies were asked for which age group(s) their services were designed. Fifty-one percent of the responding agencies provide services to any age group. Figure VII-2 summarizes these responses.



Extent Mobility-Impaired Population is Served

Each agency was asked if it serves individuals with mobility limitations. Eighty-six percent serve people with mobility limitations.

Type of Mobility Impairments

Agencies serving individuals with mobility impairments were asked the nature of the impairment served. These responses are summarized in Table VII-2.

Agencies serve clientele with a wide range of mobility impairments, including physical (88 percent), cognitive (63 percent), vision (46 percent), and age-related (68 percent). Agencies also report serving clientele with mobility impairments related to income status or the environment. Fifty-nine percent of the agencies serve individuals who cannot afford a vehicle; 39 percent serve individuals who do not have a motor vehicle; and 38 percent serve individuals who have mobility impairments due to residing in a remote location.

Table VII-2
Agencies Serving Participants with Mobility Limitations

Mobility Limitation	% Providing Service
Age-related	68%
Physical	88%
Cannot afford motor vehicle	59%
Lack of motor vehicle (other than income)	39%
Cognitive	63%
Vision	46%
Remote location	38%
Other	11%

Column sums to more than 100%. Multiple responses allowed.

Incidence of Mobility Impairment

On average, agencies estimate that approximately 36 percent of the individuals they serve have mobility impairments. The higher percentage reported by human service providers supports the notion that disadvantages due to unemployment, poverty, disabilities, and health problems are often accompanied by impaired mobility.

Transportation Used to Access Services

All responding agencies were asked what modes of transportation people use to access their offices or services. As shown in Table VII-3, the most common mode of transportation to the agency facility is that they drive themselves. The next most common transportation methods used to access services are family members who drive them. Nearly 49 percent of the agencies report that some clientele use fixed-route bus service to access the agency, and 30 percent report that Dial-A-Ride transportation is used by some to access service. It should be noted that an affirmative response to each transportation method indicates only that the agency serves one or more participants that use that transportation mode.

Table VII-3 Which of the following transportation methods do your participants use to access your services?	
Mode	**% of Agencies Responding**
Fixed-route bus service	48.5%
Dial-A-Ride service	30.3%
Van services for participants	28.8%
Private taxi	28.8%
Medical transportation	7.6%
Private vehicle driven by agency	45.5%
Family	63.6%
Friends or neighbor	57.6%
Drive themselves	68.2%
Other	25.8%
Column sums to more than 100%. Multiple responses allowed.	

Use of Public Transportation to Access Services

On average, agencies estimate that approximately 21 percent of the individuals they serve use public transportation to access the agencies' offices or services. Thirty-one percent of the agencies report that there is no existing public transportation, and another 24 percent report that there is no service to the agencies' locations.

Agency-Provided Transportation

All agencies were asked if they provide any type of transportation to their participants. Approximately four out of five agencies (80 percent) supply some type of transportation to their participants.

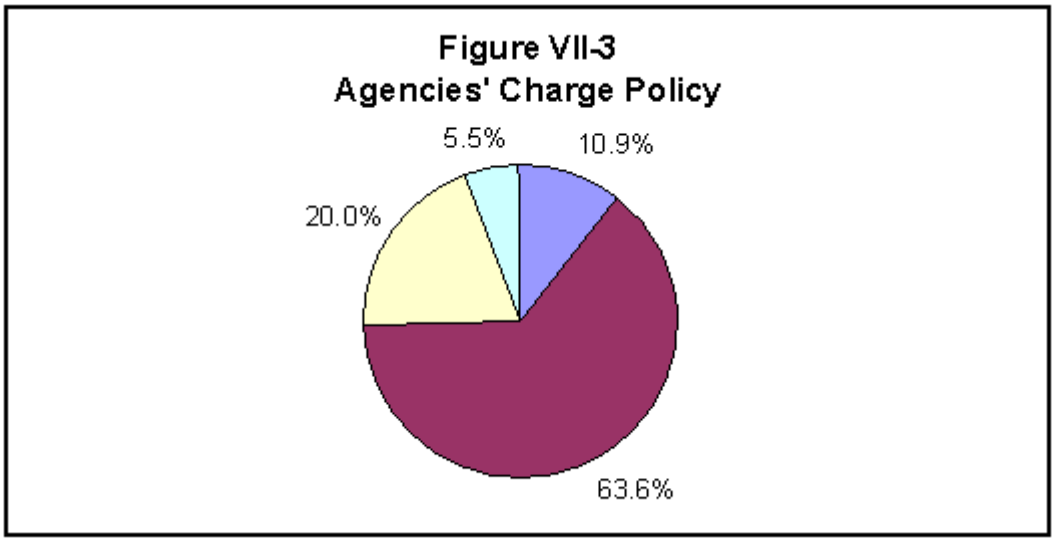
Type of Transportation Provided

Social service agencies were asked to indicate the types of support they provide for their participants to receive transportation. Overall, they provide the most trips—an average of 102 trips per week—by providing cash for purchased transportation. Table VII-4 summarizes the transportation methods used by agencies. They provide a total of 150,000 estimated annual trips using an agency vehicle.

Table VII-4 Transportation Provided Directly by Agency	
Type	**Total Annual Trips**
Provide ride using agency vehicle	150,222
Provide bus pass	20,660
Provide cash	51,492
Other	22,318
Total average annual trips	**255,402**

Cost to Participant

Agencies which provide transportation were asked if they charge participants to use the service. Eleven percent of agencies charge participants for their transportation services. Twenty percent are prohibited from charging, and 64 percent do not charge for services—most likely due to an agency policy and funding restrictions. Figure VII-3 summarizes the responses.

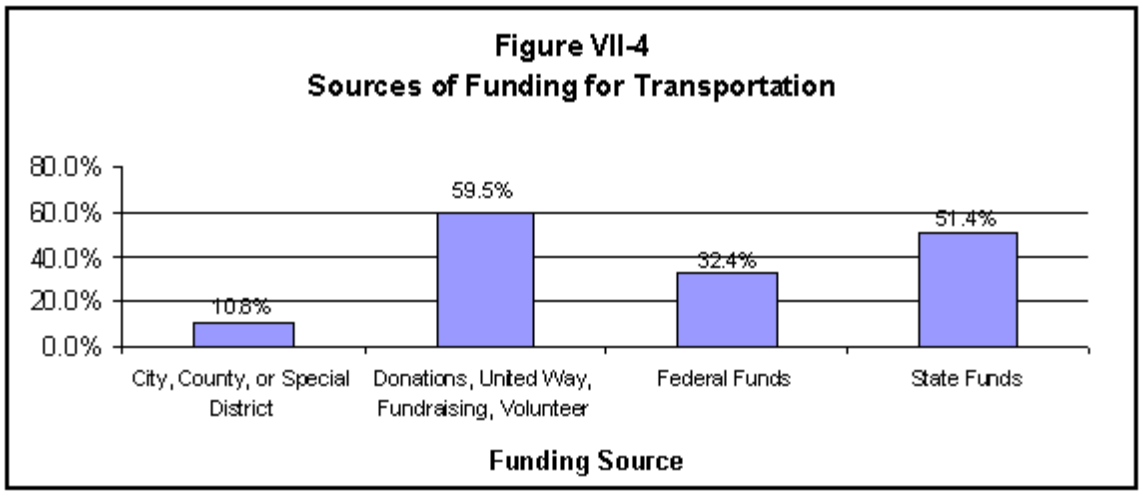


Funding Sources

Agencies which provide transportation to their participants were asked the source of the funding for providing transportation. These responses are shown in Figure VII-4. It is important to note that the classification of funding into federal, state, and local sources is based on the perceptions of the respondents.

- The most frequently mentioned sources of funding are donations, United Way, fundraising, and volunteer—60 percent of agencies that provide transportation say they receive some funding from these sources.

- The least frequently mentioned sources of funding are city, county, or special district—11 percent receive funding from these sources.



Limitations

Agencies that supply transportation were asked if they limit their transportation services to specific groups of participants or for specific types of trips. This information on funding source and policy restrictions may suggest areas where coordination and opportunities may exist for expansion of transportation options by providing more flexible uses of funds.

Approximately 68 percent of agencies which supply transportation limit the service to specific groups of participants or residents. Sixty-three percent of the agencies limit the trips because of a funding source restriction. Providing transportation to seniors is the most common limitation imposed by the agencies on specific groups of participants—26 percent limit their transportation to this group. "Other" is actually the most common response; however, "Other" is hard to quantify into a specific group. Table VII-5 lists the limitations on the type of participant that can participate in agency-provided transportation.

Table VII-5 Limitations on the Type of Participants Receiving Transportation	
Type of Participant	**% of Agencies Responding**
People with disabilities	23.7%
Veterans	5.3%
Seniors	26.3%
Low Income	21.1%
Children	23.7%
Students	18.4%
Other	42.1%
Column sums to more than 100%. Multiple responses allowed.	

Consistent with the percentage of agencies limiting trips to specific groups of participants, 80 percent of the agencies limit their transportation services to specific types of trips. Over half (60 percent) of the agencies limit the trips because of a funding source restriction. Thirty-nine percent of the agencies limit their transportation trips because of agency policy. Sixty-five percent of the agencies answered "Other" for their response on how trips are limited. Providing transportation for medical visits is the most common type of trip restriction placed by agencies—35 percent limit their transportation in this way.

Transportation to Agency Services

Agencies were asked how they would rate public transportation's ability to provide trips to agency services. On a countywide basis, social service agencies are mixed in their ratings. The most common response from agencies is split at 27 percent; those who do not get service and those who get most trips, but not all. Twenty-four percent of the agencies get only limited trips, for specific purposes only.

All agencies were asked why they thought their participants have limited access to public transportation for trips to the agency's office or services. Responses are summarized in Table VII-6.

Reasons for limitations on participants' travel by public transportation include: live too far away (47 percent), lack of money for fares (38 percent), accessing system is too difficult (36 percent), and service does not run during hours when rides are needed (35 percent). Approximately 31 percent of the agencies report that there is no existing service and 29 percent of their clients do not know how

to access transportation services. Providing training on using public transportation may help meet the travel needs of many agency clients; however, geographic barriers and lack of financial resources may be the biggest obstacle.

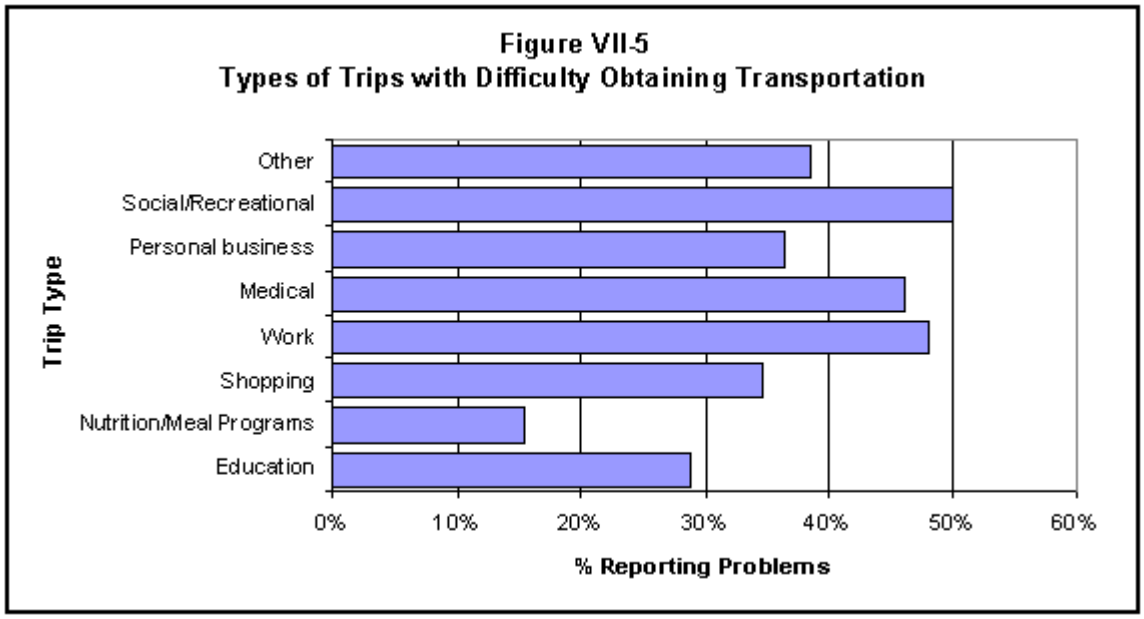
Table VII-6
For those participants who have trouble obtaining public transportation to YOUR services, why do you think their options are limited?

Limitations	% of Agencies Responding
No existing service	31.0%
No service to our location	24.1%
Service does not run during hours when rides are needed	34.5%
Accessing service is too difficult (waiting, reservation req., etc.)	36.2%
Do not qualify for the services available	17.2%
Lack of money for fares	37.9%
Do not know how to access the system	29.3%
Live too far away	46.6%
They have been turned away in the past and have given up asking	10.3%
Other factors	27.6%

Column sums to more than 100%. Multiple responses allowed.

Unmet Transportation Needs

Agencies were asked for what type of trips (other than trips to the agencies' services) their participants have difficulty obtaining transportation. Social or recreational events, shopping, and medical are the most often mentioned type of trips. Figure VII-5 illustrates the types of trips for which participants have difficulty obtaining transportation.



Importance of Transportation Improvements

Agencies were asked how important they felt public transportation improvements were for seniors and people with disabilities in their community. Responses were recorded on a five-point scale where "1" means "urgent" and "5" means "not needed." All service improvements rated above a "2" (very important), but below a "4" (would be nice). Table VII-7 presents the rank of each public transportation improvement.

Improvements that agencies feel are most important include: service easier to use for seniors and people with disabilities (2.2); greater number of door-to-door rides and better, more convenient connections with other providers (2.5); and more reliable service (2.6). Improvements that agencies feel are relatively less important include: easier to identify vehicles (3.5); lower fares; and vehicles in better condition (3.2).

Table VII-7
Service Improvement Ratings

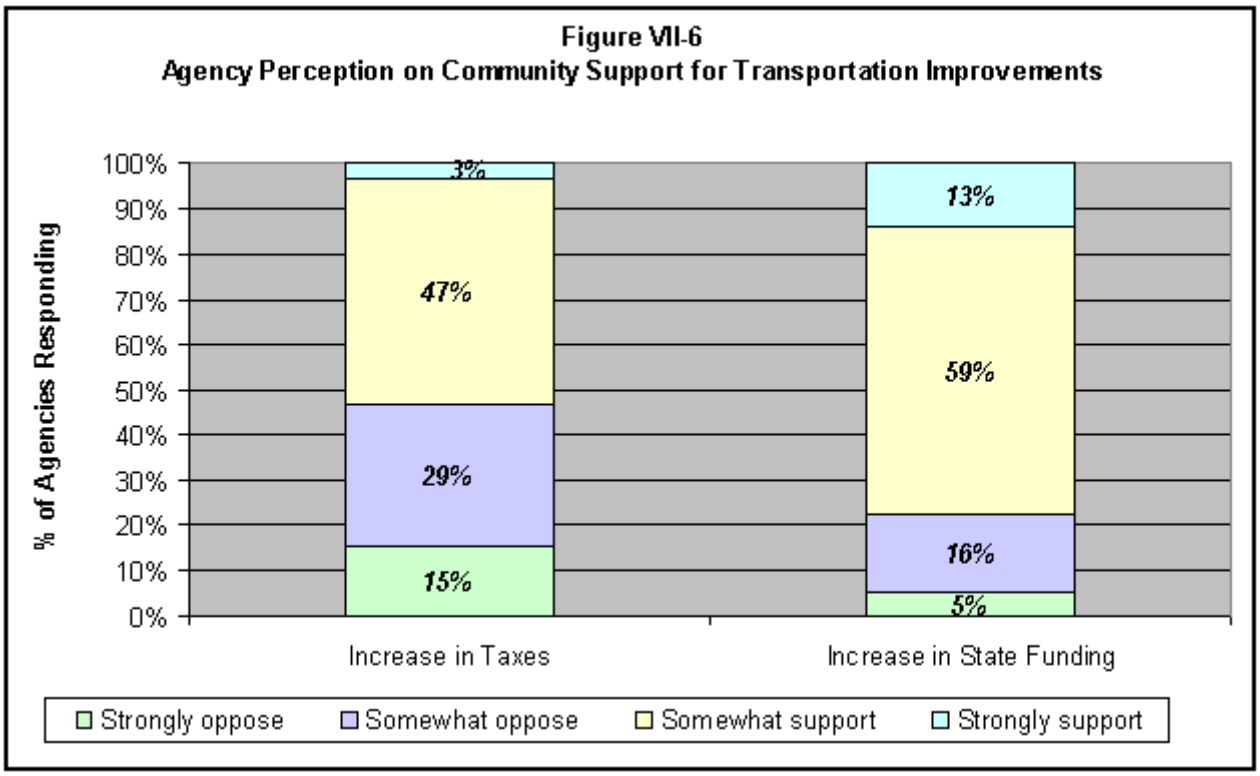
Category	Mean Score (1 = Urgent, 5 = Not Needed)
Greater number of door-to-door rides	2.5
More fixed-route service	2.7
Service easier to use for seniors and people with disabilities	2.2
Longer hours of operation	2.7
More days of operation	2.9
More reliable service	2.6
Vehicles in better condition	3.2
Lower fares	3.2
Easier trip scheduling over the phone	2.8
Printed schedules easier to read and understand	2.8
More reliable on-time pickups	2.6
More reliable drop-offs	2.7
Easier to identify vehicles	3.5
More wheelchair-accessible vehicles	2.8
Better/easier wheelchair securements within the vehicles	2.7
Better/more convenient connections with other transit services	2.5

Support for Increased Funding

Agencies were asked, in their opinion, the extent to which people in their community would support an increase in taxes or an increase in state funding to fund

improvements in public transportation for seniors and people with disabilities. The results are summarized in Figure VII-6.

One-half (50 percent) of the responding agencies think that their community would support an increase in taxes. The majority of these, however, believes that people would only somewhat support it (47 percent), as opposed to strongly support it (3 percent). Agencies believe that support would be greater for increased state funding for transportation. Thirteen (13) percent believe that people would strongly support an increase in state funding, while an additional 59 percent believe that people would somewhat support it.



General Conclusions

The Social Service Provider Survey assessed the views of 78 social service agencies throughout Boone County. The findings of this survey complement those of the Transit Provider Survey to identify the transportation needs of people with mobility impairments—i.e., individuals who, due to a physical, mental, or cognitive disability, or because of their age and income, have difficulty obtaining transpor-

tation. The following conclusions may be drawn from the findings of this portion of the study:

- A small number of human service agencies' participants rely on public transportation to access social services. This is primarily due to the few public transportation systems in the area. Public transportation is an important mode for those areas that have service. Overall, agencies estimate that 21 percent of their participants rely on public transportation to get to and from their offices or services. They estimate that approximately 36 percent of their clients have some type of mobility impairment.
- In the view of human service agencies, service improvements for existing transportation systems are needed. The specific type of improvements include service which is easier to use for seniors and disabled; increasing the number of door-to-door rides; better, more convenient connections with other providers; and more reliable service

This section provides an important source of information when examining the transportation needs of the mobility-impaired population. Survey responses are from the perspective of those who work closely with the mobility-impaired population. However, they should not be examined alone, but with the responses of the Transit Provider Survey and future community input. Together, these surveys provide a full range of perspectives on the transportation needs of the mobility-impaired, including the voice of the transportation provider and the human service providers.

AGENCIES AND ORGANIZATIONS IDENTIFIED AS "PROVIDERS"

A total of 138 various agencies and organizations were identified through the project Steering Committee. Appendix D provides the listing of those agencies which were contacted and indicates whether a completed questionnaire was obtained from the agency/organization. A total of 75 usable, completed questionnaires were returned for a response rate of 54 percent. Information was entered into a database program for analysis. A short paragraph for each respondent provides an outline of what services they provide as well as the available resources. Table VII-8, at the end of this chapter, presents a summary of the transportation-related resources available from all the agencies. Table VII-8 also presents a Boone County-wide summary of those resources, including trips provided, overall fund-

ing available, and performance measures. Only 16 of the 75 agencies indicated that they did not provide transportation.

Individual Agencies

A Good Start Day Care

A Good Start Day Care, located in Columbia, provided very limited information. The private for-profit agency provides primary child care services. The day care charges participants for transportation services for education and child care trips only. They currently use two vans for this service. The day care indicated they would be interested in a countywide transportation marketing program and possibly interested in contracting out for services and purchasing service from other providers. They reported they provide nine trips per week; however, this may likely be the number of vehicle-trips provided.

Advantage Medical Transport (AMT)

Advantage Medical Transport, a for-profit company, serves Lafayette, Saline, Chariton, Howard, Randolph, Boone, Audrain, Cooper, Johnson, Pettis, Morgan, Moniteau, Cole, Henry, Benton, and Camden Counties with emergency medical transportation services. AMT is located in Fayette, Missouri. Funding limitations exist for the agency, as trips provided are medical-related and are typically covered by some type of insurance. Advantage Medical Transport reported they provide approximately 23,000 annual hours of service and 730,000 annual miles at an operating cost of approximately $188,000. They operate four vans, five cars, and have one lift-equipped van. The company indicates an interest in coordination efforts in the future.

Advent Enterprises (Now Job Print)

Advent Enterprises provides youth services and vocational assessment, job training, and placement services to people with disabilities and the economically-disadvantaged. Advent is a comprehensive employment center, fully accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF). Residential programs, continuing education, and youth mentoring support are also available. Advent serves northeast and central Missouri. Transportation services are provided by staff using their own personal automobiles. Funding for Advent comes

through a variety of sources, including FTA 5310, the Missouri Department of Transportation, state funding, and tax credits. Trips are limited to those which are directly related to vocational needs. Advent did not indicate any other transportation resources nor did they indicate an interest in coordination activities.

Alternative Community Training, Inc. (ACT)

Alternative Community Training, Inc. helps disabled people find employment and housing. The organization operates a 15,000-square-foot facility that hires people with and without disabilities, where employees recycle software and other electronic media. The agency estimates they provide approximately 11,000 annual trips for clients using a combination of nine vans and one car. All of ACT's vehicles are either leased or owned by ACT. The organization does not have actual direct revenue reimbursement for transportation costs, but is included in rates received per program.

The agency spends approximately $130,000 annually on transportation expenses. The organization expressed some interest in coordination activities as shown in Appendix D. Funding limitations may inhibit coordination activities as trip purposes are limited to employment. Funding sources include both federal and state sources such as the Department of Mental Health, State of Missouri, and Vocational Rehabilitation funding.

Apple School Day Care

Apple School Day Care runs a before- and after-school day care program in Boone County. The day care has one van which is used for program-related trips. They reported they provide approximately 400 annual trips at a cost of approximately $1,000. The day care program is limited in the trips they provide as the trips must be school-related. Apple School Day Care is a private, nonprofit organization funded by program participant fees. The day care indicated a limited interest in coordination, as well as indicating that many coordination opportunities simply do not apply to their organization's mission.

Ashland Villa

Ashland Villa is a for-profit Level II residential care facility which provides assistance to residents at their Ashland facility. They work with Medicaid for transportation for their residents who are receiving Medicaid for medical care. The facility also provides medical transportation to their residents only at no additional fee. The care facility reported they provide approximately 400 annual trips using one mini-van. Ashland Villa indicated that coordination opportunities were not applicable to their organization.

Assembly of God Christian Chapel

This church, located in Columbia, indicated they provide a few hundred trips annually for congregation members using two vans. The church spends approximately $16,000 annually on transportation expenses. The church indicated some interest in coordination activities such as: "Highlighting connections to other fixed-route or demand-responsive services on your schedules or other information materials" and "Adjusting hours or frequency of service."

Bethel Church

The church only responded in a limited way to the questionnaire. They do arrange for some transportation for congregation members; however, they indicated no interest in coordinating.

Boone County Council on Aging, Inc. (BCCA)

Since 1973, BCCA has specialized in matching needs with resources like medical care, support groups, and housing assistance. They provide care management for seniors 55 and older with low incomes or limited local family. The BCCA does not provide transportation services except through some limited volunteers. The agency provided limited responses to the questionnaire and indicated that any coordination opportunities did not apply to the Council.

Boone County Family Resources (BCFR)

Boone County Family Resources is a public agency of the county that serves individuals with developmental disabilities. BCFR provides purchased transportation to eligible clients of the agency in Columbia and some adjacent areas in Boone

County. Much of the information asked was unknown; however, BCFR is interested in coordination activities in the future.

Boone County Jail

The Boone County Jail only provides transportation to inmates between county facilities. No other information was provided.

Boone Landing

Boone Landing is a private for-profit retirement living complex in Columbia. Boone Landing owns its own bus (not accessible) which provides approximately 4,000 trips for residents of the retirement community. The agency provided limited information; however, it may be interested in some coordination opportunities.

Boys and Girls Club

The mission of the Boys and Girls Club is "to inspire and enable all young people, especially those from disadvantaged circumstances, to realize their full potential as productive, responsible and caring citizens." The Club provides after-school programs for youth 6 to 18 years old from 3:00 to 8:00 p.m., Monday through Friday. They provide an estimated 1,000 trips annually using two vans. They responded that most coordination opportunities did not apply to the Club. The Club mainly transports children for Club-related activities.

Boys and Girls Town

Established in 1973 as a private nonprofit agency, the Columbia Boys and Girls Town campus provides long-term and temporary residential treatment, transitional living, and other support services for boys and girls ages 12 to 21. This 31-bed program operates out of two homes in the Columbia, Missouri community. The girls home offers 10 residential beds and 5 transitional living beds. The boys home offers 12 residential beds and 4 transitional living beds. The following services are available—individual, group, and family therapy; psychiatric and psychological assessments and evaluations; medical services; and 24-hour supervision.

The agency has two vans and one car, which are used for transporting clients for a variety of trip purposes. The agency recently moved to a new campus and stated

it may be too soon to determine what implications this may have on transportation and coordination activities. The agency did report they provide approximately 30 one-way vehicle-trips per week. They stated a short-term need of maintaining and replacing their 15-passenger vans, as well as a replacement of one or two sedans or station wagons.

Central Missouri Area Agency on Aging

The Council provides rides through an agency contract. The Council is funded through a combination of federal and state funding and donations. Trips are limited only to seniors in the area. They spend approximately $22,000 on transportation annually. The Council serves all of Boone County; however, riders living on borders of other counties may be transported as well—i.e., Sturgeon to Moberly; Ashland to Jefferson City; and Centralia to Mexico. They indicated a high level of interest in coordination of transportation opportunities.

Central Missouri Counties Human Development Corporation

The Central Missouri Counties Human Development Corporation, a nonprofit corporation, provides myriad services and program oversight. They provide the following services, as well as numerous others:

- Head Start
- Early Head Start
- Section 8 Rental Assistance
- Employment and Training
- Housing Development Activities
- Family Support

They indicated that they provide approximately 50,000 annual trips. Trips are provided using bus passes and as cash to clients. The corporation spends approximately $27,000 annually on transportation.

The corporation is funded through myriad funding sources including federal and state funding, donations, grants, and MEHTAP. Trips are limited to seniors, children, and low-income residents of the county. They indicated a low level of interest in coordination of transportation resources.

Central Missouri Regional Center

Central Missouri Regional Center is one of 11 regional centers in the state that supports people of all ages with developmental disabilities and/or mental retardation by linking them to necessary community resources and services. Regional centers are part of the Department of Mental Health, Division of Mental Retardation/Developmental Disabilities and serve approximately 35,000 Missourians through their programs and case management/service coordination system.

The agency reported that they do not provide transportation services; however, they see a need for increased service and options. They indicated a possible interest in future coordination opportunities.

Central Missouri Sheltered Industries

Sheltered Industries provides meaningful, dignified employment to persons with disabilities in Missouri through the production of goods and services for the private sector. CMSI also provides advocacy and support to persons with disabilities. CMSI works with 17 participants and provides transportation to these individuals daily, for approximately 7,300 annual trips. They use two vans and one car to accomplish getting persons to and from work sites. The cost for this transportation is approximately $48,000 annually. CMSI reported being slightly interested in some coordination opportunities.

Children's World Day Care

Children's World Day Care is a private, for-profit day care located in Columbia. The day care only provides trips for school-age children to and from school. They transport to: Gentry, Rockbridge, Millcreek, Paxton, Keely, Lee, and Russel to Columbia Independent School and Columbia Catholic School. They also transport to various areas for field trips. The agency reported limited information and only indicated a small interest in coordination.

Christian Fellowship of Columbia

This church is located in Columbia and provides limited trips for those who need rides to and from church. They spend approximately $750 on transportation

annually. They reported doing one trip weekly; however, it is likely that they are not counting the number of riders per trip as the actual number of passenger-trips they provide. The church indicated coordination opportunities were not applicable to them.

CMC-HDC Head Start

Federally funded by the Department of Health and Human Services, Head Start is a child development program for three- to five-year-olds providing educational programming in the eight-county service area. The program provides educational, family development, social, and health (including nutrition and mental health) services and transportation. Head Start provides transportation for children with six bus routes, operating four days per week. Head Start transports to Gentry, Rockbridge, Millcreek, Paxton, Keely, Russel, Columbia Independent School, Lee, and Columbia Catholic School. They reported providing approximately 48 trips with an agency vehicle; however, this is likely vehicle-trips, instead of person-trips as requested. With nearly 100 participants, this equates to 800 weekly trips, plus an additional 400 miscellaneous trips per week, which equates to approximately 15,000 annual trips. Head Start spends approximately $250,000 per year on transportation for a cost of nearly $17.00 per trip.

Columbia Area United Way

Columbia Area United Way is a nonprofit organization of volunteers and qualified staff that coordinates local health and human resources for children, adults, and families in the mid-Missouri area. This agency collaborates with the local businesses, school districts, local and state governments, and other agencies to identify the needs of the communities and help overcome them. They also help in fund-raising and fund distribution.

Columbia City Parks

Columbia City Parks provides a few hundred estimated trips annually to program participants using one bus. City Parks spends approximately $8,000 annually on transportation. Most trips are provided within Columbia; however, some do go outside of Columbia, such as trips for the Special Olympics. City Parks has indicated some interest in coordination of activities.

Columbia Housing Authority

The Housing Authority of the City of Columbia, Missouri has 719 units targeted for affordable housing opportunities to low-income persons and families. CHA also administers over 1,000 Housing Choice Vouchers for Section 8 Rental Assistance, which provides rental assistance to very low-income families who rent from more than 700 private landlords located primarily within the City of Columbia, but also throughout Boone County. The Authority provides shuttle van service to clients using three vans providing approximately 18,000 annual trips. Cost for services is estimated at approximately $18,000. They assist residents in contacting both OATS and Columbia Transit for additional transportation services. The Authority indicated that coordination activities were non-applicable to the organization.

Cornerstone Baptist Church

Cornerstone Baptist Church provided limited information. They do own one bus; however, are not using it at this time. They did not express an interest in any coordination activities.

Coyote Hill Children's Home

Coyote Hill is a professional home for abused and neglected children, and also for children whose families just need a chance to regroup and get a fresh start. They provide licensed counseling and professional social work services. They provide transportation using five vans and two cars. They are funded through the State of Missouri and donations; however, they provided relatively limited information. They expressed no interest in coordination opportunities.

Disabled American Veterans (DAV)

Disabled American Veterans is a nonprofit organization that helps better the lives of disabled veterans, their families, and survivors. Their goal is to help veterans and their families in obtaining benefits and services earned through their military service, education on available program services, and representing the interests of the disabled veterans before various levels of state and federal government. Since this organization is not a government agency, it receives no government funding. DAV provided limited information on transportation. They provide service

using five vans for medical and nutritional needs of veterans. No coordination interests were indicated.

Division of Youth Services

The division of Youth Services is to "enable youth to fulfill their needs in a responsible manner within the context of and with respect for the needs of the family and the community." This state agency provides treatment programs and school programs to youths committed to their custody from the 45 Missouri juvenile courts. Youth Services uses both private automobiles and state vehicles to either transport Boone County youths who live along the main highways or to provide client visitations. Boone County clients may be placed in programs outside of Boone County and even outside of the northeast region, so limited trips are provided to these locales. They spend approximately $31,000 on transportation services annually. Youth Services indicated that coordination opportunities do not apply to their agency.

End of The Rainbow Day Care

End of the Rainbow is a private, for-profit organization located in Columbia that provides child care and day care services. They do not "service" any areas, only those students/children who are enrolled at their child care center. While they indicated they were not a transportation provider, they do provide program-related transportation using one bus and one van. They budget approximately $8,000 annually on transportation expenses. They did not respond to questions regarding coordination opportunities.

First Assembly of God

The First Assembly of God is a church located in Columbia. They have one van which provides limited transportation to members of the congregation. They budget approximately $2,800 annually on transportation expenses. They indicated they would not be interested in coordination opportunities.

First Baptist Church of Columbia

First Baptist Church of Columbia provides limited transportation using one passenger van and three cars. They budget approximately $3,000 annually for trans-

portation expenses, which are covered through church donations. The church responded there is some interest in coordination of services.

Green Meadows Day Care

Green Meadows Day Care, a for-profit company, is located in Linn, Missouri. The Day Care responded with very limited information and indicated a very limited interest in coordination.

Hallsville Schools

Hallsville School District—located in Hallsville, Missouri—consists of the elementary, middle, and senior high schools. They have approximately 1,200 students. The District reported they have 20 buses used for student transportation. They budget approximately $400,000 annually for student transportation. Their transportation funds are specifically limited to students who attend school. The District indicated that they were either not interested in coordination efforts or that coordination did not apply to them.

Hand in Hand Day Care

Currently the day care serves children receiving FDS north of Broadway to Rangeline, or more generally, the northeast corner of Columbia. This area was chosen due to the greatest number of children the day care could serve with only one 15-passenger van available for this service. The other two 7-passenger vans provide transportation for school-age clientele from school to day care. The day care spends approximately $17,000 annually on transportation expenses. The day care did not respond to questions pertaining to coordination.

Harrisburg Schools

Harrisburg School District, located in the Town of Harrisburg, is comprised of two schools—an elementary school and a high school. Total enrollment is approximately 600 students divided evenly between the elementary school and high school. The District has a total of eight buses used for student transportation. The District budgets approximately $200,000 annually on transportation expenses. The District indicated they would not be interested in coordination of service.

Harry S. Truman Memorial Veterans' Hospital

The Harry S. Truman Memorial Veterans' Hospital is a full service medical center that provides inpatient and outpatient care to eligible veterans from mid-Missouri in the areas of medicine, surgery, psychiatry, neurology, and physical medicine and rehabilitation. The hospital provides ambulance services, contracts for transportation services, and reimburses employees' transit costs. The hospital indicated some interest in coordination activities; however, it does not directly provide much in the form of transportation.

Hillcrest Residential

Hillcrest Residential Care is located in Columbia and provides residential care for seniors requiring different levels of assisted living. They provide respite care, adult day care, and both short-term and long-term care. They provide limited transportation to residents and are limited only to medical trips. They use one van for transportation and are not interested in coordination activities.

Home Instead Senior Care

Home Instead Senior Care, a private for-profit company, provides non-medical home care with everyday tasks that allow seniors to live independently and remain in their homes. Since the company provides services within the home, they do not provide direct transportation to clients.

Imani Mission Center

Imani Mission Center is a nonprofit ministry located in Columbia that helps disadvantaged families be independent and take care of themselves. Services include providing legal assistance to teenagers in trouble, and after-school programs, food, and clothing for disadvantaged kids. The Center uses one van and one car to provide limited transportation. The Center reported they receive funding through Title II - mileage reimbursement, the State of Missouri, and donations. The agency spends approximately $10,000 annually on transportation expenses. The Center indicated some interest in coordination opportunities.

Lenoir Retirement Community

Lenoir Retirement Community is a private for-profit agency that provides continuing care and assisted living for seniors. Lenoir provided very little information; however, they reported they provide approximately 5,000 annual trips using two buses and three vans. They did not provide any information indicating their level of interest in coordinating services.

Lutheran Family and Children Services

Lutheran Family and Children Services addresses the needs of low-income families; offers group mentoring sessions for vulnerable youths; and offers individual, couple, and family counseling. They also have an infant adoption program. Trips are provided in employees' personal autos. The agency uses one van and five cars to provide limited transportation for program participants. The agency budgets approximately $5,000 annually on transportation expenses. They are funded through the State of Missouri as well as donations. They did indicate interest in participating in a countywide transportation marketing program; however, they did not indicate any other interest in coordination.

McCambridge Center

McCambridge Center is a nonprofit organization located in Columbia that provides alcohol and drug treatment for women, outpatient services for women and adolescents with drug or alcohol-related problems, and therapy and day care for children. They reported they provide approximately 6,000 annual trips for clients throughout Boone County. The agency uses one van and three cars for transportation, as well as provides bus passes for clients. Trips are not limited by trip purpose, and they cannot deny anyone transportation. They budget approximately $7,000 annually on transportation expenses, which is funded by donations. The Center indicated some level of interest in coordination opportunities.

Medicaid Transportation Services

The State of Missouri has contracted with the private firm known as LogistiCare to broker the state's non-emergency medical transportation (NEMT). LogistiCare implements and manages Medicaid NEMT programs in 14 states. The company provides eligibility and authorization services, call center management, multi-

modal transportation, and Americans with Disabilities Act (ADA) disability testing. LogistiCare contracts with local public and private transportation providers for the provision of NEMT. In Boone County, LogistiCare contracts with the following transportation providers:

- Advantage Medical Transportation - ambulatory trips only
- Checker Livery - ambulatory and wheelchair trips
- Choice Ride - ambulatory trips only
- Missouri River Taxi - ambulatory trips only
- OATS Columbia - ambulatory and wheelchair trips
- Salem Taxi - ambulatory and wheelchair trips

LogistiCare receives a capitation payment by region; it is not separated by county. Boone County is in Regions 3 and 4 of the payment methodology. The capitation payment is for all fee-for-service NEMT eligibility recipients during the month, which excludes recipients in managed-care facilities. The capitation payment per member per month for Region 3 is $11.10 and for Region 4 is $0.81. These payments include administration fees as well as operational costs. Region 3 covers aged, blind, and disabled eligibility groups for all counties in the State of Missouri except the City of St. Louis, St. Louis County, Jefferson County, Franklin County, St. Charles County, Platte County, Clay County, Cass County, Jackson County, Johnson County, Lafayette County, and Ray County. Region 4 covers eligibility groups for families, children, and pregnant women for all counties in the state.

The Fiscal Year 2006 NEMT appropriation is $32,643,668. This includes LogistiCare and public entity costs of which an estimated $5,700,000 is for public entities and $26,943,668 is for LogistiCare. No specific information was available for Boone County.

Missouri Care Health Plan

Missouri Care Health Plan is a nonprofit organization established by the University of Missouri to provide a health plan that covers all Managed Care health programs for parents, children, and pregnant women. They have a network of 1,000 health care providers and 18 hospitals. The organization can provide pre-

arranged rides for medical-related trips with a medical transport provider. They reported they provide approximately 2,000 annual contract trips. They are funded through the State of Missouri. They reported interest in purchasing services or contracting more service from other agencies if it met their needs.

Missouri Kidney Program

The Missouri Kidney program is part of the University of Missouri, Columbia. This state-funded renal program is designed "to meet the medical, educational and psycho social needs of eligible Missouri residents who suffer from chronic renal insufficiency or have had a renal transplant." They provide financial assistance, help with transportation costs, insurance premiums, medications, and education services. They are funded through the state legislative appropriation. The Program provided very little information except some interest in coordination activities. They reported a transportation cost of approximately $1.0 million annually; however, it is suspected that this includes all transportation costs for all 114 Missouri counties and cities.

MO-X

MO-X is a private, for-profit agency which provides airport shuttle service. It operates both scheduled and door-to-door transportation between Columbia and St. Louis and Kansas City Airports. They serve these two airports daily with 12 round-trips to St. Louis and 5 round-trips to Kansas City. They agency uses 2 buses and 12 vans to provide service. They reported very little interest in coordination activities, except for a possible interest in a countywide marketing program.

Muscular Dystrophy Association

The Muscular Dystrophy Association is a nonprofit health agency established with the collaboration of scientists and concerned citizens to fight neuromuscular diseases through research, network of medical and community services, and public health education. They have clinics located in Kansas City, St. Louis, Columbia, Springfield, Joplin, and Cape Girardeau, Missouri. The Columbia District MDA office serves the following counties: Adair, Audrain, Benton, Boone, Callaway, Chariton, Cole, Cooper, Henry, Howard, Linn, Macon, Maries, Miller,

Moniteau, Morgan, Osage, Pettis, Putnam, Randolph, Saline, Schuyler, St. Clair, and Sullivan.

The MDA indicated that the only transportation provided is a reimbursement for gas at a budgeted expense of approximately $100 annually. The reimbursement must be for a medical-related trip. The Association indicated no interest or that coordination was not applicable for the Association.

Pathways Community Behavioral Healthcare

Pathways Community Behavioral Healthcare is a treatment center with a primary focus on Mental Health Services. Pathways serves Boone County and its surrounding areas—i.e. Hallsville, Centralia, Mexico, Booneville, etc. The agency travels both the main highways as well as into residential areas. They do limit transportation to the Columbia city limits. Other clients outside the city must provide their own transportation. They also provide pick-ups at the local middle and high schools in Columbia. Finally, they provide clients rides home after treatment at 6:30 p.m.

Pathways provides transportation to clients in the program using an agency van and car—an estimated 1,000 annual trips. The agency indicated an interest in coordination opportunities.

Phoenix House

Phoenix House is a nonprofit agency located in Columbia which is an outpatient substance abuse program that provides counseling for individuals, families, and groups. The agency provides transportation in the form of bus passes as well as using an agency van and two cars. They reported having an annual budget of approximately $44,000, which is federally-funded, and provide approximately 1,000 annual trips for the homeless. They have approximately 100 clients at any one time. Some level of interest in coordination opportunities was shown by Phoenix House.

Precious Hearts Learning Center

Precious Hearts Learning Center is a for-profit agency located in Columbia that provides day and child care services. Transportation service is provided as a courtesy to their clients. Service is provided to and from school using three buses and two vans. Service areas all start at 2700 Ballenger then go to: (1) S63 to Stadium to Andoban to Shepard Elementary; (2) I-70 Route #7 to Prairie Elementary; (3) 63S to Broadway to El Chapparel to Rosetta to Cedar Ridge Elementary; (4) Nexico Gravel to Blueridge to Derby Ridge to Derby Ridge Elementary. The Center estimates approximately 1,000 annual trips are provided; however, this is likely vehicle-trips and not passenger-trips. Program participant numbers were not reported, so it is difficult to estimate the number of passenger-trips the Center provides. The Center indicated a low interest in coordination opportunities.

Probation and Parole

Probation and Parole is a public agency responsible for the evaluations of imprisoned offenders and then monitoring their progress for the parole board. The agency provides a limited number of bus passes and cash for taxi rides. They do not directly provide transportation using any agency vehicles. They provide an estimated 500 trips annually. They budget approximately $500 annually on transportation expenses. The agency did not respond to any questions regarding coordination.

Rainbow House

Rainbow House is a nonprofit child advocate agency that provides emergency shelter for abused and neglected children and families in dire needs. They accommodate approximately 200 children in the shelter annually. They are funded through the State of Missouri and donations. The agency has two vans for transportation. Annually, the agency is estimated to provide approximately 1,600 trips. Rainbow House indicated some level of interest in coordination.

Reality House

Reality House provides community correction, group, and individual therapy and counseling, psychological testing and evaluation, and 24-hour behavioral supervision for male offenders of 17 to 25 years of age. The type of services include both

short-term and long-term residential treatment, outpatient services, and partial hospitalization.

The agency travels from 1900 Prathersville Road to the central bus station twice per day, Monday through Friday, where clients transfer to the city bus. The agency reported that, at a minimum, a city bus stop is needed on Prathersville, with an hourly scheduled stop. Their service includes going to such locations as the Boone County Jail, Juvenile Justice Center, several major mobile home courts, fairgrounds, parks and recreation areas, as well as family residential areas using one van and ten weekly trips. It is likely that this is vehicle-trips rather than person-trips. If the agency transported an average of eight passengers per trip, twice per day, five days per week for a year, this equates to nearly 4,200 person-trips.

Salvation Army

The Salvation Army is a nonprofit international evangelistic organization that provides emergency services to individuals in need. They receive funding from the United Way and the Federal Emergency Management Agency. They also receive private donations. They provide limited transportation services only for Harbor House clients as well as a youth group. Transportation must be in Columbia city limits, to Jefferson City, or to another Salvation Army shelter. They have two agency vans used for transportation. They reported a limited number of trips; however, this may be vehicle-trips rather than person-trips. They budget approximately $21,000 on transportation annually and indicated they are not interested in any coordination opportunities.

Serve, Inc. CALTRAN

Serve, Inc. (Caltran) is a nonprofit agency that provides transportation services for medical appointments, dialysis clinics, senior centers, job sites, and shopping needs to qualified applicants. The agency is located in Fulton County and serves Calloway County's Medicaid trips. They state they can cover a wide radius with their US DOT filing for Medicaid trips. Service falls under the Calloway United Way for funding. The agency also receives FTA 5311 funding, Non-Emergency Medical Transportation, Central Missouri Area Agency on Aging, and others.

Serve, Inc. has a fleet of six buses and three vans for service. They report an operating cost of approximately $129,000 annually. The agency indicated some interest in coordination opportunities.

Services for Independent Living

Services for Independent Living (SIL) is a nonprofit center for independent living with a mission to empower people with disabilities to live as independently as possible, to control their own lives, and to increase opportunities and choices through direct services and community advocacy. They reported that they provide approximately 1,500 trips annually using three buses at a cost of approximately $152,000; however, the number of trips may be under-reported. Likely this is one-way vehicle-trips, so if on average they transport 10 persons daily, this equates to approximately 15,000 one-way person-trips. This is only an estimate. The center indicated a moderate level of interest in coordinating activities.

Southern Boone County School District

The School District serves the southern portion of Boone County with the schools located in Ashland. Two elementary schools, one middle school, and one high school serve approximately 1,300 students. The District reports approximately 24,000 annual trips for students using 11 buses; however, this is a low number of trips. Funding limitations obviously limit the type of trips the District provides, as it primarily serves to get students to and from school and home and other extra curricular activities as needed. The District indicated some of the coordination opportunities do not apply to the District; however, they did express an interest in some coordination opportunities.

St. Andrews Lutheran Church - ELCA

St. Andrews is located in Columbia, but does not provide much in terms of transportation, and therefore, limited information is available. They do have one van they use for congregation members to get them to and from services. No other information was provided.

Sturgeon Schools

The Sturgeon School District in Sturgeon, Missouri consists of the elementary school, the middle school, and the high school. The District serves approximately 500 students evenly divided among the three schools. The District has five buses and routes used to transport school children for 36 weeks out of the year. They reported they made five trips per week; however, that is not the actual number of student trips provided, only the routes. To estimate, if there are five buses on five routes daily operating a morning and afternoon trip, this would equate to 50 vehicle-trips per day. If the District is open 36 weeks per year, and an average of 50 school children ride each route, this equates to nearly 90,000 passenger-trips for the District. This is, however, only an estimate and reported numbers are provided in Table IV-8 at the end of this chapter. The agency reports annual operating costs at nearly $125,000 annually for transportation. The District reported possible interests in many of the coordination activities.

Terrace Retirement Apartments

Terrace Retirement Apartments are independent living apartments for senior citizens. Services include regularly-scheduled transportation services for banking, shopping, medical appointments, church services, and group excursions. Trips are provided using one bus, one van, and three cars for an annual total of approximately 4,000 reported trips. They provide transportation to their 130 residents who live at the Terrace. Residents are welcome to hire the van service for any special wants—for example, to the beauty shop, a bank meeting, or other reasons. Terrace Retirement reported an operating cost of $30,000 annually, for a cost per passenger of nearly $7.70 per passenger-trip. They indicated no interest in coordination opportunities.

UMC Office of Disability Services

This service is provided for the University at Missouri-Columbia students with disabilities. Services provided are adjustments and aids that help students with disabilities the opportunity to pursue a college education. UMC Office of Disabilities Services help transportation needs of students with both temporary or permanent impairments with access to one lift-equipped bus between 7:00 a.m. and 5:00 p.m. operated through the on-campus parking and transportation ser-

vices. UMC indicated that coordination opportunities were not applicable to the services they provide.

University Hospital

The University Hospital is the main hospital of the Missouri Health Care located on the University of Missouri Campus, Columbia. This 233-bed hospital offers both outpatient speciality care and advanced critical care, comprehensive health care services, and also helps in providing education to aspiring health care providers. University Hospital is a regional facility, drawing patients even from outside Boone County for care. The trips the hospital reported were both ground and air ambulance trips. The trips are only emergency medical-related trips, as the University does not provide transportation resources to employees. The hospital is one of the largest employers in the region. They indicated a low interest in coordinating opportunities.

Vocational Rehabilitation

This is a special program to help individuals with physical or mental disabilities obtain employment. Services include evaluation, counseling, vocational training, assistance, and providing medical services to assist a person with an impairment for employment. Vocational Rehabilitation provides transportation in the form of bus passes and cash for trips. The agency provides approximately 3,900 trips—1,300 in the form of bus passes and 2,600 trips in the form of cash. The agency spends approximately $80,000 on transportation. The indicated some interest in coordination opportunities.

Voluntary Action Center

Voluntary Action Center is a nonprofit organization that provides information on available human services in the area, provides emergency assistance when local programs are unable to meet community needs, collaborates and coordinates with various local agencies, and provides volunteer coordination and training. They also provide services such as transportation, prescriptions, food, clothing, and shelter. Their service area includes all of Boone County. Funding sources include the United Way, Boone County, the City of Columbia, Boone Electric Trust, and churches in the area. VAC provides both bus passes and gas for clients. They

reported they provide approximately 6,700 trips annually. They are funded through a city grant and donations. Total operating costs were reported as approximately $5,700 annually. Some interest in coordination was indicated by VAC.

Woodhaven Learning Center

The Center offers professional live-in or live-out support staff for about 105 developmentally-disabled people. The Center operates social and community services. Clients include people with development disabilities, seizure disorders, autism, cerebral palsy, and other disabilities. They are operated by the National Benevolent Association. The agency reported they provide an estimated 15,000 trips annually (for clients) using 45 cars, which can be assumed to be case managers' or employees' personal cars. No coordination interests were reported.

Agencies Either Not Providing Transportation or Providing Little or No Information

Several of the contacted agencies stated they did not provide any transportation through their agency or either provided very little or no information. These agencies' pertinent information is provided in the summary table at the end of this chapter.

The agencies are:

- *Bristol Manor of Centralia*
- *BSHCN & BCC*
- *Campus Lutheran Church - LCMS*
- *Carpenter Street Baptist Church*
- *Family Services Division*
- *Greyhound Bus Lines*
- *Judevine Autism Project*
- *Parkade Baptist Church*
- *Rusk Rehabilitation*
- *St. Vincent De Paul Society*
- *University of Missouri-Columbia Vehicle Pool*

AGENCY SUMMARY

Table VII-8 provides a summary of pertinent information for each agency. The main goal of this part of the project is to present the available resources. Of all the agencies which responded to the questionnaire, nearly $3.0 million in transportation service is provided from these agencies and nearly 234,000 trips are reported. However, agencies were asked to report the number of weekly ***rides*** given, not the number of vehicle-trips as some agencies likely reported. Extrapolation and estimates could be made to the number of trips an agency provides if all available information was provided. However, it appears that only a small number of agencies reported vehicle-trips, which would not greatly affect the number of total trips. These agencies, such as some schools, generally do not track the number of annual trips, and this information would have to be extrapolated anyway. Of the 234,000 trips which is likely a low estimate, 62 percent are done using agency vehicles, 8 percent are provided through bus passes, 21 percent through cash to program participants, and 9 percent provided other trips.

Coordination Interests

Table VII-9 provides agency interest for coordination opportunities. These responses were used as coordination options were developed.

Appendix Y

Table VII-8
Summary of Existing Human Service Agency Transportation Resources in Boone County

Agency Which Returned Information	Indicated they Provide Transportation	Agency	# of Trips Provided (weekly from agency vehicle)	# of Trips Provided (Bus pass weekly)	# of Trips Provided (Cash)	# Trips Provided (Other)	Total Weekly Trips	Total Estimated Annual Trips	Limited to a Specific Group	Agency or Funding is a source restriction?	Trip Limitations	# Of Buses	# of Vans	# of Cars	# of Trucks	Total Vehicles	Total Estimated Annual Miles	Total Hours of Service	Total Estimated Annual Hours	Days per Week	Weeks per Year	Total Annual Estimated/ Approximate Operating Cost	Total Annual Estimated/ Approximate Operating Revenue	Annual Pax per Hour	Pax per Mile	Cost per Pax
A Good Start Day Care	Yes	For Profit	9	0	0	0	9	459	Children only	Agency	School Related		2			2	1,632	20	1,020	5	51	n/a	n/a	0.45	0.28	n/a
Advantage Medical Transport	Yes	For Profit					0	0	People w/disability, Seniors, Low Income, Other	Funding	Medical, School, Other		4	5		10	728,000	450	23,400	5	52	$187,770	$223,000	n/a	n/a	n/a
Advent Enterprises (Now Job Print)	Yes	Nonprofit	52		140	40	232	12,064	People w/disability, Seniors	Agency	Other					0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Alternative Community Training Inc.	Yes	Nonprofit	200		12		212	11,024	People w/disability	Funding	Job, Other		9	1		10	143,000	194	10,088	5	52	$130,301	$62,182	1.09	0.08	$11.82
Apple School Day Care	Yes	Nonprofit	10				10	400	Children, Other		School		1			1	2,400	3	133	5	40	$1,065	$0	3.00	0.17	$2.66
Ashland Villa	Yes	For Profit	8				8	416	Seniors, Other		Medical, Other		1			1	13,312	12	624	5	52	n/a	n/a	0.67	0.03	n/a
Assembly of God Christian Chapel	Yes	Nonprofit	4				4	208			Other		2			2	10,400	4	208	2	52	$15,900	n/a	1.00	0.02	$76.44
Bethel Church	Yes	Nonprofit					0	0								0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boone County Council on Aging, Inc.	Yes	Nonprofit				5	5	260	Seniors, Low Income, Children	Agency	Other					0	2,600	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boone County Family Resources	Yes	Public					0	0	People with disabilities who have low income	Agency	Low Income, Job, Other					0	0	n/a	n/a	5	50	n/a	n/a	n/a	n/a	n/a
Boone County Jail	Yes	Public					0	0	Other		Other					0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boone Landing	Yes	For Profit				75	75	3,900			Other	1				1	9,100	10	520	5	52	n/a	n/a	7.50	0.43	n/a
Boys and Girls Club	Yes	Nonprofit	25				25	1,000	Children				2			2	800	12	480	5	40	n/a	n/a	2.08	1.25	n/a
Boys and Girls Town	Yes	Nonprofit	30	0	0	0	30	1,560					2	1		3				7	52					
Bristol Manor of Centralia	No	For Profit				10	10	520			Other			1		1	0	0	0	4	52	n/a	n/a	n/a	n/a	n/a
BSHCN & BCC	No	Public														0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Campus Lutheran Church LCMS	No	Other															n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Carpenter Street Baptist Church	n/a	Nonprofit				4	4	0			Other					0	0	0	0			n/a	n/a	n/a	n/a	n/a
Central Missouri Area Agency on Aging	Yes	Nonprofit					0		Seniors	Funding	Medical, Nutrition, Other					0	n/a	n/a	n/a	n/a	n/a	$21,096	$21,281	n/a	n/a	n/a
Central Missouri Counties Human Development Corporation	Yes	Nonprofit		200	800		1,000	50,000	Seniors, Low Income	Funding	Low Income	10		30		40	150,000	0	0	5	50	$27,400	$27,400	n/a	0.33	$0.55
Central Missouri Regional Center	No	Other														0										
Central Missouri Sheltered Industries	Yes	Nonprofit	140				140	7,280	People w/disability		Job, Other		2	1		3	18,200	20	1,040	5	52	$48,400	$44,500	7.00	0.40	$6.65
Children's World Day Care	n/a	For Profit	10				10	520	Children		School, Other		3			3	18,200	30	1,560	5	52	n/a	n/a	0.33	0.03	n/a
Christian Fellowship of Columbia	Yes	Nonprofit	1				1	52			Other		1			1	1,560	2	104	1	52	$750	n/a	0.50	0.03	$14.42
CMC-HDC Head Start	Yes	Nonprofit	800				800	29,600	Low Income, Children	Funding	Low Income, School	4				4	39,960	72	2,664	4	37	$249,212	$249,212	11.11	0.74	$8.42
Columbia Area United Way	Yes	Nonprofit					0		People w/disability, Seniors	Funding	Other					0	n/a	n/a	n/a	n/a	n/a	$103,375	n/a	n/a	n/a	n/a
Columbia City Parks	Yes	Public	4				4	200	Other			1	3			4	6,250	6	300	3	50	$8,000	$1,000	0.67	0.03	$40.00
Columbia Housing Authority	Yes	Nonprofit	360				360	18,720	Seniors				3			3	14,400			4	52	$18,150	$5,704	n/a	1.30	$0.97
Cornerstone Baptist Church	n/a	Nonprofit					0	0			Other	0				0	0	0	0	0	0	n/a	n/a	n/a	n/a	n/a
Coyote Hill Children's Home	Yes	Nonprofit	15				15	780					5	2		7	78,000	50	2,600	7	52	$10,000	n/a	0.30	0.01	$12.82
Disabled American Veterans, Dept of Missouri	Yes	Other	14				14	728	Veterans		Medical, Nutrition, Veterans		5			5	16,640	10	520	5	52	n/a	n/a	1.40	0.04	n/a
Division of Youth Services	Yes	Other	20			10	30	1,560	Students, Other		Other	2	1	9		12	189,644	314	16,328	5	52	$30,560	n/a	0.10	0.01	$19.59
End of The Rainbow Day Care	No	For Profit					0	0				1	1			2	9,500	10	500	5	50	$7,800	n/a	n/a	n/a	n/a
Family Services Division	No	Public					0	0								0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
First Assembly of God	Yes	Nonprofit	4				4	208					1			1	1,300	3	130	2	52	$2,800	n/a	1.60	0.16	$13.46
First Baptist Church of Columbia	Yes	Other		10	10		20	1,040	People w/disability, Veterans, Seniors, Low Income, Children, Students	Agency	Veterans, Job, Medical, Low Income, School		1	3		4	208	9	468	1	52	$3,000	n/a	2.22	5.00	$2.88
Green Meadows Day Care	No	For Profit					0	0								0	0	n/a	n/a	0	0	n/a	n/a	n/a	n/a	n/a
Greyhound	Yes	Public					0	0								0	0	0	0	0	0	n/a	n/a	n/a	n/a	n/a
Hallsville Schools	Yes	Public					0	0	Students			20				20	126,750	20	780	2	39	$400,602	n/a	n/a	n/a	n/a
Hand in Hand Day Care	Yes	For Profit	35				35	1,820	Low Income, Children, Students,	Funding	School, Other		3			3	26,000	17	858	5	52	$17,010	$700	2.12	0.07	$9.35
Harrisburg Schools	Yes	Public					0	0				8				8	54,000	90	3,240	5	36	$199,800	$84,000	n/a	n/a	n/a
Harry S. Truman Memorial Veterans' Hospital	Yes	Government Human Service							Veterans					15		15	n/a	n/a	n/a	5	72	n/a	n/a	n/a	n/a	n/a
Hillcrest Residential	Yes	For Profit	2				2	104	Other	Funding	Medical		1			1	5,200	20	1,040	3	52	Unknown	n/a	0.10	0.02	n/a
Home Instead Senior Care	Yes	For Profit															n/a	n/a	n/a	7	52	n/a	n/a	n/a	n/a	n/a
Imani Mission Center	Yes	Nonprofit	25				25	1,250	Children				1	1		2	12,000	0	0	6	50	$10,400	n/a	n/a	0.10	$8.32
Judevine Autism Project	No	Nonprofit					0	0						10		10	130,000	0	0	0	0	n/a	n/a	n/a	n/a	n/a
Lenoir Retirement Community	Yes	For Profit	100				100	5,200			Medical, Other	2	3			5	17,680	80	4,160	7	52	n/a	n/a	1.25	0.29	n/a
Lutheran Family & Children Services	Yes	Nonprofit			5	35	40	2,080	Other	Funding	Emergency, Medical, Other		1	5		6	42,068	21	1,066	5	52	$5,200	$1,700	1.95	0.05	$2.50
McCambridge Center	Yes	Nonprofit	15	25	4	75	119	6,188					1	3		4	6,760	15	780	7	52	$7,200	n/a	7.93	0.92	$1.16
Missouri Care Health Plan	Yes	Nonprofit				40	40	2,080	Children, Other	Funding	Medical					0	0	0	0	5	52	n/a	n/a	n/a	n/a	n/a
Missouri Kidney Program	No	Public					0									0	n/a	n/a	n/a	n/a	n/a	$1,000,000	n/a	n/a	n/a	n/a
MO-X	Yes	For Profit					0	0				2	12			14	676,000	840	43,680	7	52	n/a	n/a	n/a	n/a	n/a
Muscular Dystrophy Association	Yes	Nonprofit					0	0		Agency	Medical					0	0	0	0	1	48	$100	n/a	n/a	n/a	n/a
Parkade Baptist Church	n/a						0	0								0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Pathways Community Behavioral Healthcare	Yes	Non profit	20				20	1,040	Other				1	1		2	10,400	16	832	3	52	n/a	n/a	1.25	0.10	n/a
Phoenix House	Yes	Nonprofit	10	5		5	20	1,000	Other	Funding	Emergency, Job, Medical, School		1	2		3	2,750	8	400	5	50	$44,280	n/a	2.50	0.36	$44.28
Precious Hearts Learning Center	Yes	For Profit				20	20	1,000	Children, Students	Agency	School, Other	3	2			5	21,250	23	1,150	5	50	n/a	n/a	0.87	0.05	n/a
Probation & Parole	Yes	Public		10		0	10	520		Funding	Emergency, Other					0	n/a	n/a	n/a	0	0	$500	n/a	n/a	n/a	$0.96
Rainbow House	Yes	Nonprofit	30				30	1,560		Agency	Medical, School, Other		2			2	6,760	4	208	7	52	n/a	n/a	7.50	0.23	n/a
Reality House	Yes	Nonprofit	10				10	520	Other	Funding	Other		1			1	5,200	10	520	5	52	n/a	n/a	1.00	0.10	n/a
Rusk Rehabilitation	No	For Profit					0									0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Salvation Army	Yes	Nonprofit	2	10			12	624	Other		Other		2			2	5,200	0	0	3	52	$21,215	n/a	n/a	0.12	$34.00
Serve, Inc. CALTRAN	Yes	Nonprofit	90				90	4,680		Agency/Funding	Other	6	3			9	291,200	300	15,600	5	52	$128,575	$374,948	0.30	0.02	$27.47
Services for Independent Living	Yes	Nonprofit	30				30	1,470	People w/disability		Other	3				3	24,500	80	3,920	6	49	$152,839	$152,839	0.38	0.06	$103.97
Southern Boone County School District	Yes	Public	600				600	24,000	Students	Funding	School	11				11	100,000	110	4,400	5	40	n/a	n/a	5.45	0.24	n/a
St. Andrews Lutheran Church-ELCA	Yes	Nonprofit	4				4	208	Seniors				1			1	2,080	1	52	1	52	n/a	n/a	4.00	0.10	n/a
St. Vincent De Paul Society	No	Nonprofit					0	0								0	0	0	0	0	0	n/a	n/a	n/a	n/a	n/a
Sturgeon Schools	Yes	Public				5	5	180	Students	Agency/Funding	School	5				5	45,000	25	900	5	36	$126,126	$73,504	0.20	0.004	$700.70
Terrace Retirement Apartments	Yes	For Profit	75				75	3,900	Seniors		Emergency, Medical	1	1	3		5	19,760	34	1,768	6	52	$30,000	n/a	2.21	0.20	$7.69
UMC Office of Disability Services	Yes	Nonprofit					0	0	People w/disability, Other		Other	1				1	1,520	40	1,520	5	38	n/a	n/a	n/a	n/a	n/a
Univ of Missouri-Columbia Vehicle Pool	No	Public					0	0								0	0	0	0	0	0	n/a	n/a	n/a	n/a	n/a
University Hospital	Yes	Public				100	100	5,200	Other	Funding	Emergency, Medical					0	0	0	0	7	52	n/a	n/a	n/a	n/a	n/a
Vocational Rehabilitation	Yes	Public		25	50		75	3,900	People w/disability, Low Income	Agency	Job, School	0	0	0	0	0	0	0	0	7	52	$80,000	n/a	n/a	n/a	$ 20.51
Voluntary Action Center	Yes	Nonprofit		125		8	133	6,650		Agency	Job, Medical, Low Income, School, Nutrition, Veterans					0	241,500	0	0	5	50	$5,716	$7,326	n/a	0.03	$ 0.86
Woodhaven Learning Center	Yes	Nonprofit	300				300	15,600	Other					45		45	0	9,615	499,980	7	52	n/a	n/a	0.03	n/a	n/a
*****			***3,054***	***410***	***1,021***	***432***	***4,917***	***233,273***				***81***	***85***	***138***	***0***	***305***	***3,328,684***	***12,599***	***649,541***			***$ 3,095,142***	***$ 1,329,296***	***18.52***	***0.07***	***$ 13.27***

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Table VII-9

Coordination Interest

Agency Which Returned Information	Providing transportation services, or more transportation services, under contract to another agency or agencies	Purchasing transportation services from another organization, assuming that the price and quality of service met your needs	Coordinating schedules and vehicle operation with nearby paratransit providers so that riders can transfer from one service to another	Joining together with another municipality or agency to consolidate the operation of transportation services	Joining together with another municipality or agency to consolidate the purchase (or contracting) of transportation services	Highlighting connections to other fixed-route or demand-responsive services on your schedules or other information materials	Adjusting hours or frequency of service	Coordinating activities such as procurement, training, vehicle maintenance, and public information with other providers	Participating in an organized countywide transportation marketing program
A Good Start Day Care	◗	◗	❍	❍		❍	❍	◗	●
Advantage Medical Transport	●	n/a	●	●	●	●	●	●	●
Alternative Community Training Inc.	❍	◗	●	●	●	❍	◗	❍	◗
Apple School Day Care	❍	❍	na	na	na	na	na	na	na
Ashland Villa	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bethel Church	❍	❍	❍	❍	❍	❍	❍	❍	❍
Boone County Council on Aging, Inc.	n/a	n/a		n/a			n/a	n/a	❍
Boone County Family Resources	●	●	●	●		n/a	n/a	n/a	◗
Boone Landing	❍	❍	❍	❍	❍	◗	◗	❍	❍
Boys and Girls Club	◗	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boys and Girls Town	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BSHCN & BCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Campus Lutheran Church LCMS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Carpenter Street Baptist Church	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Central Missouri Area Agency on Aging	n/a	n/a	●	●	◗	◗		◗	◗
Central Missouri Counties Human Development Corporation	n/a	●	❍	●	●	●	◗	n/a	●
Central Missouri Regional Center	◗	❍	◗	◗	◗	❍	❍	❍	❍
Central Missouri Sheltered Industries	n/a	n/a	◗	◗	n/a		◗	◗	◗
Children's World Day Care	n/a	n/a	n/a	n/a	n/a	●	❍	n/a	n/a
Christian Fellowship of Columbia	❍	◗	◗	❍	n/a	n/a	◗	n/a	n/a
Columbia Area United Way	◗	◗	●	●	●	n/a	●	●	●
Columbia City Parks	n/a	❍	n/a	❍	❍	◗	◗	◗	n/a
Columbia Housing Authority	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cornerstone Baptist Church	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Coyote Hill Children's Home	❍	❍	❍	❍	❍	❍	❍	❍	n/a
Division of Youth Services	n/a	◗	n/a	n/a	n/a	n/a	n/a	n/a	n/a
End of The Rainbow Day Care	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Family Services Division	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
First Assembly of God	❍	❍	❍	❍	❍	❍	❍	❍	❍
First Baptist Church of Columbia	◗	◗	❍	❍	❍	◗	●	◗	◗
Green Meadows Day Care	❍	❍	❍	❍	❍	◗	◗	n/a	n/a
Hallsville Schools	❍	❍	❍	n/a	n/a	n/a	n/a	n/a	n/a
Harrisburg Schools	❍	❍	❍	❍	❍	❍	❍	❍	❍
Harry S. Truman Veterans' Hospital	◗	◗	◗	n/a	n/a	◗	❍	❍	❍
Hillcrest Residential	●	●	❍	●	●	❍	❍	❍	❍
Home Instead Senior Care	❍	❍	n/a	❍	❍	n/a	❍	❍	❍
Imani Mission Center	❍	❍	◗	◗	❍	◗	❍	❍	◗
Judevine Autism Project	◗	n/a	n/a	n/a	◗	❍	◗	❍	❍
Lutheran Family & Children Services	❍	❍	n/a	❍	❍	n/a	n/a	n/a	◗
McCambridge Center	❍	❍	◗	❍	❍	◗	●	❍	◗
Missouri Care Health Plan	●	●	❍	◗	◗	n/a	n/a	n/a	n/a
Missouri Kidney Program	◗	❍	◗	◗	◗	◗	◗	❍	◗
MO-X	❍	❍	❍	❍	❍	❍	❍	❍	◗
Muscular Dystrophy Association	n/a	n/a	n/a	n/a	n/a	n/a	❍	❍	❍
Pathways Community Behavioral Healthcare	●	◗	n/a	◗	◗	◗	n/a	◗	◗
Phoenix House	●	◗	●	❍	❍	◗	●	n/a	n/a
Precious Hearts Learning Center	n/a	❍	❍	n/a	n/a	❍	n/a	◗	❍
Rainbow House	n/a	◗	◗	◗	❍	❍	❍	❍	❍
Reality House	n/a	❍		◗	◗	◗	n/a	◗	◗
Rusk Rehabilitation	n/a	◗	◗	◗	❍	◗	❍	◗	◗
Salvation Army	❍	❍	❍	❍	❍	❍	❍	❍	❍
Serve, Inc. CALTRAN	●	❍	◗	n/a	n/a	●	◗	●	◗
Services for Independent Living	◗	❍	◗	◗	n/a	n/a	n/a	◗	◗
Southern Boone County School District	●	●	n/a	◗	◗	◗	❍	◗	❍
St. Andrews Lutheran Church-ELCA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Sturgeon Schools	◗	◗	◗	❍	❍	◗	◗	◗	◗
Terrace Retirement Apartments	❍	❍	❍	❍	❍	❍	n/a	❍	❍
UMC Office of Disability Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
University Hospital	❍	❍	n/a	❍	n/a	●	n/a	❍	●
Vocational Rehabilitation	n/a	●	n/a	n/a	n/a	n/a	n/a	n/a	❍
Voluntary Action Center	❍	❍	◗	●	n/a	◗	●	n/a	●
Woodhaven Learning Center	❍	❍	❍	❍	❍	❍	❍	❍	❍

Note: ● = Interested ❍ = Not Interested ◗ = Possibly Interested n/a = Not Applicable

Chapter VIII

CHAPTER VIII
Community Characteristics

A major effort in estimating the demand and need for transportation services is to collect extensive data regarding the current transportation providers and social service providers in Boone County. With the help of the Steering Committee, numerous agencies were identified as providing transportation services. This information was detailed in Chapters VI and VII. Surveys of each of these identified providers were collected and analyzed to determine services provided and to aid in determining current and future needs.

In addition to current provider information, baseline economic and demographic data were compiled from census data and various other resources. These data were used to identify various population segments that have various needs. These data were used in a variety of quantitative estimation techniques which are detailed in Chapter IX. Future levels of need are estimated based upon the projections of population change presented in further sections of this chapter. These estimates present a picture of both current and future needs for the county.

COMMUNITY DEMOGRAPHICS

Baseline Population Data

Baseline population data are required to model transit needs both now and into the future. Currently there are several population segments which are used to estimate transportation needs.

2000-2005 Population

The permanent population of Boone County was reported to be 135,454 persons based on the 2000 US Census. An estimate for Boone County for 2005 is approximately 143,241, an increase of approximately five percent from the year 2000. In comparison, the State of Missouri had a population increase of approximately one percent between the years 2000 and 2005. Table VIII-1 presents the 2005 county-wide population estimates by census block group.

Table VIII-1
2005 General Population

Census Tract	Census Block Group	Land Area (sq.ml.)	2005 Total Estimated Population	2005 Estimated Population by Gender	
				Male	Female
1	1	0.24	867	540	311
2	1	0.12	670	337	276
2	3	0.09	636	303	263
2	4	0.15	473	158	317
3	1	0.09	756	495	325
3	2	0.08	1,134	751	382
3	3	0.36	1,262	565	774
4.01	1	0.39	1,035	580	412
4.01	2	0.13	1,846	808	1,045
4.02	1	0.12	2,156	678	1,443
4.02	2	0.04	1,706	743	997
5	1	0.30	1,341	791	604
5	2	0.18	1,246	675	554
6	1	0.50	1,240	645	622
6	2	0.37	972	501	495
6	3	0.21	764	358	392
6	4	0.24	632	277	344
6	5	0.24	626	268	291
6	6	0.29	897	461	477
7	1	0.19	856	404	426
7	2	0.44	1,575	827	746
7	3	0.28	1,489	701	815
8	1	0.17	701	303	379
8	3	0.17	900	374	495
8	4	0.12	881	354	513
9	1	0.73	1,035	603	519
9	2	0.41	870	387	460
10.01	2	1.16	974	364	546
10.01	3	1.70	2,583	1,221	1,427
10.02	1	2.95	2,130	1,024	1,080
10.02	4	6.06	3,122	1,491	1,657
11.01	1	4.56	4,803	2,307	2,568
11.01	2	4.00	2,230	1,100	1,059
11.03	1	1.78	2,898	1,460	1,542
11.03	2	2.00	2,610	1,132	1,276
11.03	3	0.28	1,391	669	818
11.04	1	2.57	5,852	2,811	2,987
11.04	2	6.78	1,713	880	887
12	1	0.27	1,216	489	733
12	2	2.41	6,241	3,028	3,208
12	3	0.49	1,268	615	641
12	4	1.26	2,486	1,203	1,294
13	1	0.20	707	237	374
13	2	1.65	1,728	870	914
13	3	0.24	596	330	307
14	1	7.15	2,249	1,203	1,078
14	2	0.84	1,716	744	915
14	3	1.59	1,299	533	810
14	4	2.30	2,167	986	1,162

Table VIII-1, continued
2005 General Population

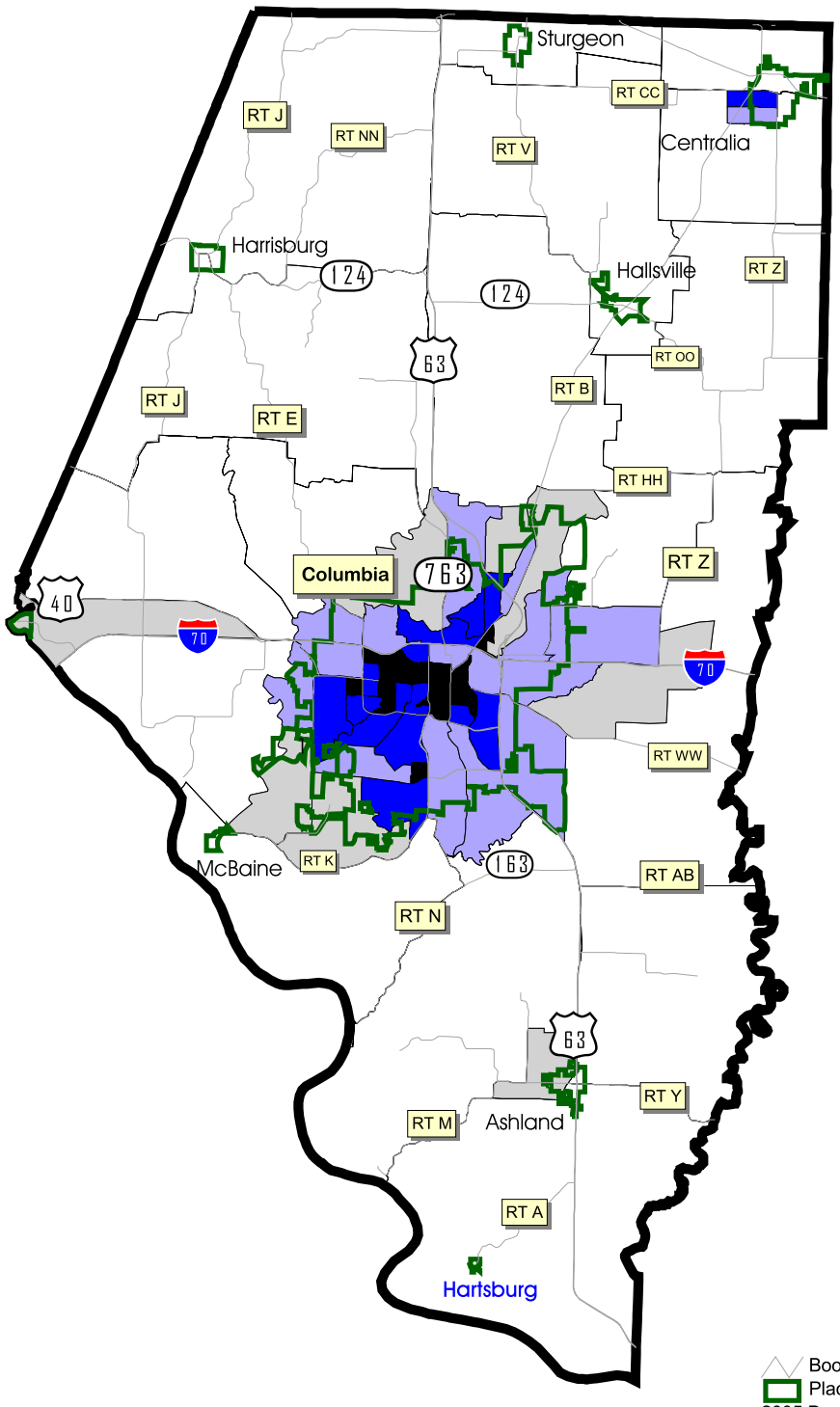
Census Tract	Census Block Group	Land Area (sq.ml.)	2005 Total Estimated Population	2005 Estimated Population by Gender	
				Male	Female
15.01	1	0.88	901	338	565
15.01	2	2.24	893	422	439
15.01	3	4.31	4,324	2,205	2,119
15.01	4	0.89	1,605	739	860
15.01	5	0.76	1,927	1,022	967
15.01	6	0.64	1,161	504	631
15.02	1	5.29	1,763	990	863
15.02	2	2.62	3,342	1,503	1,745
15.02	3	0.24	989	507	486
16.01	1	13.77	1,371	709	632
16.01	2	5.77	3,876	1,915	1,990
16.02	1	8.98	1,909	903	930
16.02	2	44.03	1,402	721	757
17.01	1	34.96	1,231	589	649
17.01	2	3.37	1,341	625	709
17.01	3	57.93	3,094	1,549	1,545
17.02	1	29.03	1,521	768	769
17.02	2	49.36	2,582	1,243	1,324
18.03	1	18.99	2,146	1,148	1,000
18.03	2	29.09	953	498	496
18.03	3	7.74	1,327	627	656
18.05	1	2.51	2,791	1,304	1,487
18.05	2	5.35	1,852	869	942
18.05	3	25.10	1,269	652	657
19.01	1	58.15	1,575	807	804
19.01	2	53.49	2,731	1,313	1,382
19.02	1	10.84	1,166	592	574
19.02	2	42.68	2,564	1,235	1,329
19.02	3	42.59	2,557	1,319	1,305
19.02	4	40.09	1,593	747	779
20	1	10.34	1,052	484	600
20	2	0.75	1,445	659	738
20	3	0.76	721	325	354
20	4	18.82	1,725	868	915
Boone Total		*691*	*143,241*	*69,285*	*73,956*
Rural Boone Total		*601*	*37,274*	*18,381*	*18,904*

Source: LSC, 2005; 2000 US Census, State of Missouri, Office of Administration.

Population Density and Distribution

Figure VIII-1 reflects the 2005 estimated population density for Boone County residents by block group boundaries. The population is most dense in the Columbia area around the university. Most of the county is sparsely populated, being covered by expansive farm lands, timber, and open spaces.

Figure VIII-1
2005 Boone County Population Density



Boone County Roads
Place
2005 Density of Below Poverty Persons
0 - 150 persons per sq. mi.
151 - 500 persons per sq. mi.
501 - 1,500 persons per sq. mi.
1,501 - 3,000 persons per sq. mi.
3,001 or more persons per sq. mi.
Boone County

0 8 16 Miles

LSC TRANSPORTATION CONSULTANTS, INC.

Projected Population Data

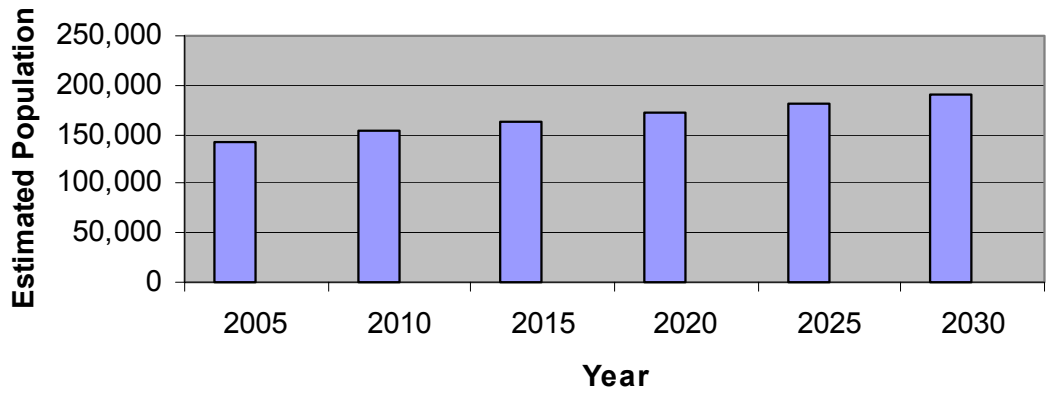
The relatively undeveloped character of the rural areas, coupled with the area's large university population, has resulted in substantial and continuing population growth in the study area. Based on these and other planning factors, the amount of development that can be expected to occur countywide is expected to be moderate over the next 20 years. Table VIII-2 and Figure VIII-2 reflect population projections through 2030 for Boone County. It is anticipated that the population will increase to a projected 181,000 persons by 2025. Population projections for 2030 are currently unavailable and therefore have been estimated using the 2020 to 2025 percent of change. Much of the future growth is expected to occur in the Columbia area, with a projected 15,000 to 17,000 new housing units being constructed by 2025 to handle the growth.

Table VIII-2
Boone County Estimated Population Growth

Year	Population	% Change
2005	143,241	
2010	153,210	7.0%
2015	163,052	6.4%
2020	172,590	5.8%
2025	181,415	5.1%
2030	190,691	5.1%

Source: State of Missouri, Office of Administration.

Figure VIII-2
Boone County Population Projections



Transit-Dependent Population Characteristics

This section provides information on individuals considered by the transportation profession to be dependent upon public transit. In general these population characteristics preclude most such individuals from driving, leaving carpooling and public transit as the only other motorized forms of transportation available.

The four types of limitations which preclude persons from driving are: (1) physical limitations, (2) financial limitations, (3) legal limitations, and (4) self-imposed limitations. Physical limitations may include everything from permanent disabilities such as frailty due to age, blindness, paralysis, or developmental disabilities, to temporary disabilities such as acute illnesses and head injuries. Financial limitations essentially include those persons unable to purchase or rent their own vehicle. Legal limitations refer to such limitations as persons who are too young (generally under age 16). Self-imposed limitations refer to those people who choose not to own or drive a vehicle (some or all of the time) for reasons other than those listed in the first three categories.

The US Census is generally capable of providing information about the first three categories of limitation. The fourth category of limitation is currently recognized as representing a relatively small proportion of transit ridership. Table VIII-3 presents Boone County's estimated 2005 population for zero-vehicle households, youth population, elderly population, mobility-limited population, and below-poverty population. These types of data are important to the various methods of demand estimation.

Table VIII-3
2005 Projected Service Area Input Data for TCRP Method

Census Tract	Census Block Group	Land Area (sq.ml.)	2005 Total Estimated HHDs	2005 Total Estimated Population	2005 Total Estimated 60 & over	2005 Total Estimated Mob-Limited	2005 Total Zero-Veh HHDs	2005 Total Below Poverty
1	1	0.24	450	867	58	38	132	330
2	1	0.12	380	670	38	41	27	182
2	3	0.09	383	636	52	45	55	129
2	4	0.15	113	473	7	31	55	87
3	1	0.09	328	756	8	65	30	382
3	2	0.08	317	1,134	43	45	16	452
3	3	0.36	575	1,262	210	47	50	350
4.01	1	0.39	682	1,035	15	21	62	498
4.01	2	0.13	153	1,846	24	297	42	305
4.02	1	0.12	4	2,156	0	112	0	0
4.02	2	0.04	22	1,706	17	32	4	23
5	1	0.30	878	1,341	81	80	363	777
5	2	0.18	316	1,246	21	42	45	228
6	1	0.50	529	1,240	197	52	48	79
6	2	0.37	441	972	233	71	0	10
6	3	0.21	341	764	187	51	18	65
6	4	0.24	256	632	164	39	0	22
6	5	0.24	260	626	132	7	10	18
6	6	0.29	366	897	153	15	0	0
7	1	0.19	370	856	157	31	53	112
7	2	0.44	784	1,575	330	115	88	228
7	3	0.28	697	1,489	177	48	115	365
8	1	0.17	204	701	33	130	58	246
8	3	0.17	470	900	225	136	256	499
8	4	0.12	445	881	131	50	115	364
9	1	0.73	449	1,035	65	88	68	447
9	2	0.41	390	870	80	44	68	260
10.01	2	1.16	501	974	130	32	54	173
10.01	3	1.70	1,380	2,583	473	118	33	190
10.02	1	2.95	900	2,130	151	51	16	316
10.02	4	6.06	1,236	3,122	619	236	51	185
11.01	1	4.56	1,676	4,803	205	318	69	1556
11.01	2	4.00	890	2,230	102	121	15	1029
11.03	1	1.78	1,229	2,898	247	89	19	551
11.03	2	2.00	1,066	2,610	413	79	10	82
11.03	3	0.28	675	1,391	142	94	71	271
11.04	1	2.57	2,129	5,852	552	215	50	732
11.04	2	6.78	591	1,713	130	34	0	76
12	1	0.27	520	1,216	308	47	40	94
12	2	2.41	2,149	6,241	646	222	19	191
12	3	0.49	528	1,268	429	16	0	0
12	4	1.26	1,032	2,486	161	71	29	325
13	1	0.20	264	707	29	54	122	390
13	2	1.65	983	1,728	202	111	86	386
13	3	0.24	440	596	51	65	43	157
14	1	7.15	902	2,249	154	95	31	329
14	2	0.84	701	1,716	346	47	8	27
14	3	1.59	538	1,299	545	74	143	158
14	4	2.30	845	2,167	261	85	19	81
15.01	1	0.88	349	901	54	44	22	51
15.01	2	2.24	347	893	73	41	0	125
15.01	3	4.31	1,498	4,324	244	182	42	746
15.01	4	0.89	697	1,605	220	90	24	106
15.01	5	0.76	795	1,927	203	127	29	143
15.01	6	0.64	480	1,161	81	40	45	381
15.02	1	5.29	778	1,763	157	90	68	500
15.02	2	2.62	1,506	3,342	523	223	109	345
15.02	3	0.24	494	989	89	35	69	314
16.01	1	13.77	518	1,371	66	49	37	42
16.01	2	5.77	1,574	3,876	398	202	39	399
16.02	1	8.98	760	1,909	153	106	26	59
16.02	2	44.03	511	1,402	210	55	6	17

Table VIII-3, continued
2005 Projected Service Area Input Data for TCRP Method

Census Tract	Census Block Group	Land Area (sq.ml.)	2005 Total Estimated HHDs	2005 Total Estimated Population	2005 Total Estimated 60 & over	2005 Total Estimated Mob-Limited	2005 Total Zero-Veh HHDs	2005 Total Below Poverty
17.01	1	34.96	473	1,231	176	119	7	52
17.01	2	3.37	552	1,341	225	79	36	144
17.01	3	57.93	1,148	3,094	435	169	15	92
17.02	1	29.03	565	1,521	145	90	7	44
17.02	2	49.36	975	2,582	383	146	20	110
18.03	1	18.99	797	2,146	256	137	21	284
18.03	2	29.09	343	953	79	87	14	41
18.03	3	7.74	510	1,327	160	32	23	50
18.05	1	2.51	996	2,791	146	121	10	229
18.05	2	5.35	713	1,852	68	79	17	251
18.05	3	25.10	485	1,269	176	73	7	81
19.01	1	58.15	584	1,575	167	158	13	159
19.01	2	53.49	1,001	2,731	347	256	16	136
19.02	1	10.84	465	1,166	234	79	48	113
19.02	2	42.68	957	2,564	315	172	44	206
19.02	3	42.59	956	2,557	209	234	12	122
19.02	4	40.09	593	1,593	287	153	19	89
20	1	10.34	465	1,052	333	82	45	108
20	2	0.75	550	1,445	207	110	57	44
20	3	0.76	280	721	166	78	8	41
20	4	18.82	650	1,725	370	137	13	40
Boone Total		*691*	*56,146*	*143,241*	*16,488*	*7,922*	*3,673*	*19,422*
Rural Boone Total		*601*	*14,140*	*37,274*	*5,098*	*2,602*	*496*	*2,076*

Source: LSC, 2005; 2000 US Census, State of Missouri, Office of Administration.

Elderly Population

Elderly persons represent a significant number of the transit-dependent population compared to any other transit-dependent market segments and represent approximately 12 percent of the total population in Boone County for 2005. This is an increase of approximately 12 percent from the 2000 census. Figure VIII-3 illustrates the distribution of elderly persons (age 60 or more) across Boone County. As illustrated in Table VIII-3 and Figure VIII-3, the highest density of elderly residents is in the central portion of Columbia.

Mobility-Limited Population

The mobility-limited population also represents a large portion of the transit-dependent population. Nationwide, approximately 10 percent of the population has some form of mobility impairment, although this is typically much lower in rural areas. This holds true in Boone County, where approximately five percent of the population has some type of mobility limitation. Figure VIII-4 illustrates the distribution of the mobility-limited population.

Low-Income Population

Low-income persons tend to depend on transit to a greater extent than more wealthy persons or persons with a high level of disposable income. Based on the 2000 US Census, the average per-capita income for Boone County approached $28,000. This is lower than the state's average of nearly $30,000.

The portion of the population living below poverty level within Boone County is approximately 13.6 percent. The countywide distribution of the below-poverty population is shown in Figure VIII-5. Approximately eight percent of the Columbia population has incomes below the poverty level.

Figure VIII-3
2005 Boone County Elderly Population Density

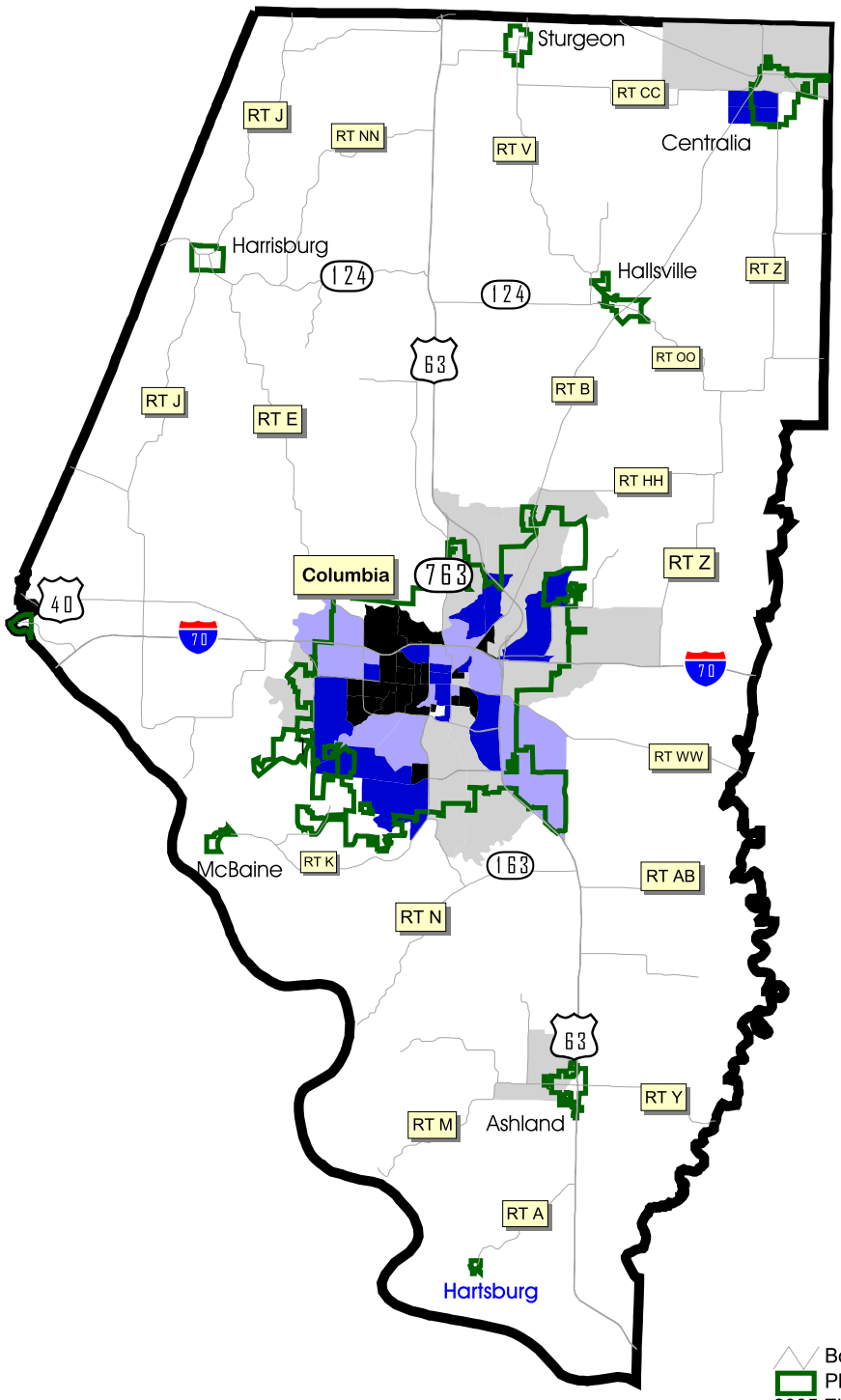
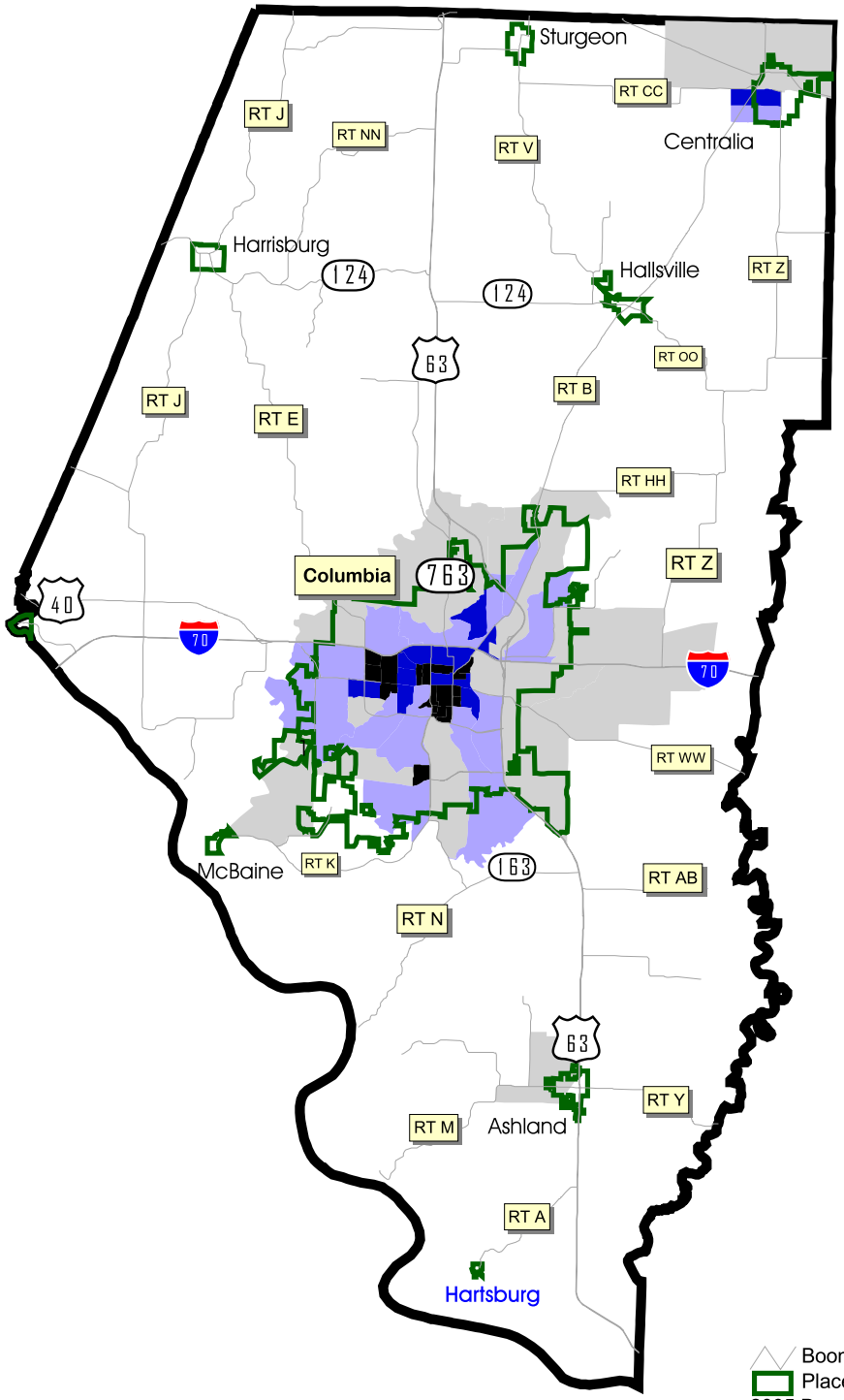


Figure VIII-4
2005 Boone County Mobility-Limited Population Density



Boone County Roads
Place
2005 Density of Mobility-Limited Persons
1 - 7 persons per sq. mi.
8 - 40 persons per sq. mi.
41 - 100 persons per sq. mi.
100 - 200 persons per sq. mi.
201 or more persons per sq. mi.
Boone County

0 8 16 Miles

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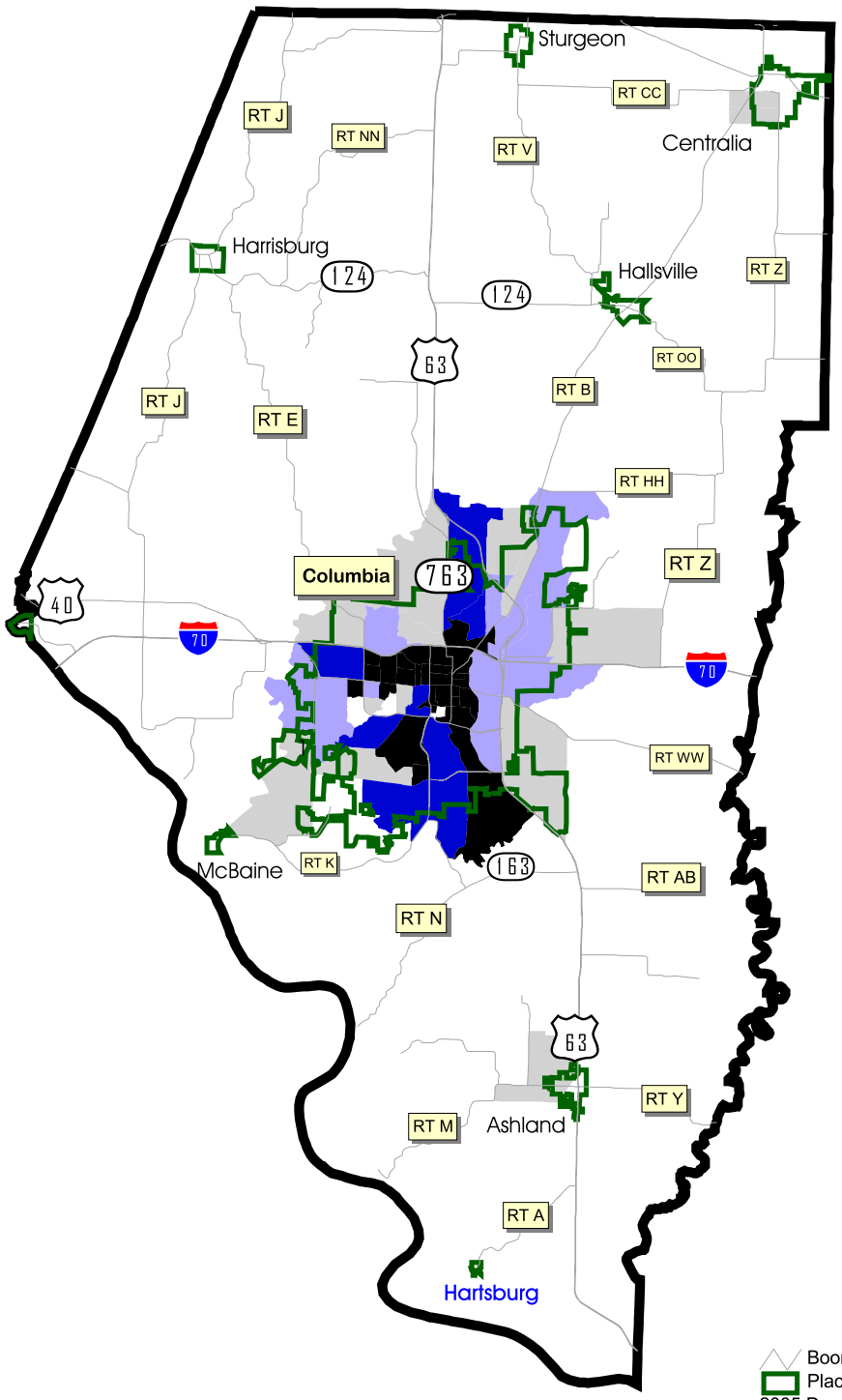
Figure VIII-5
2005 Boone County Below Poverty Population Density



Boone County Roads
Place
2005 Density of Below Poverty Persons
0 - 25 persons per sq. mi.
26 - 75 persons per sq. mi.
76 - 150 persons per sq. mi.
151 - 300 persons per sq. mi.
301 or more persons per sq. mi.
Boone County

0 8 16 Miles

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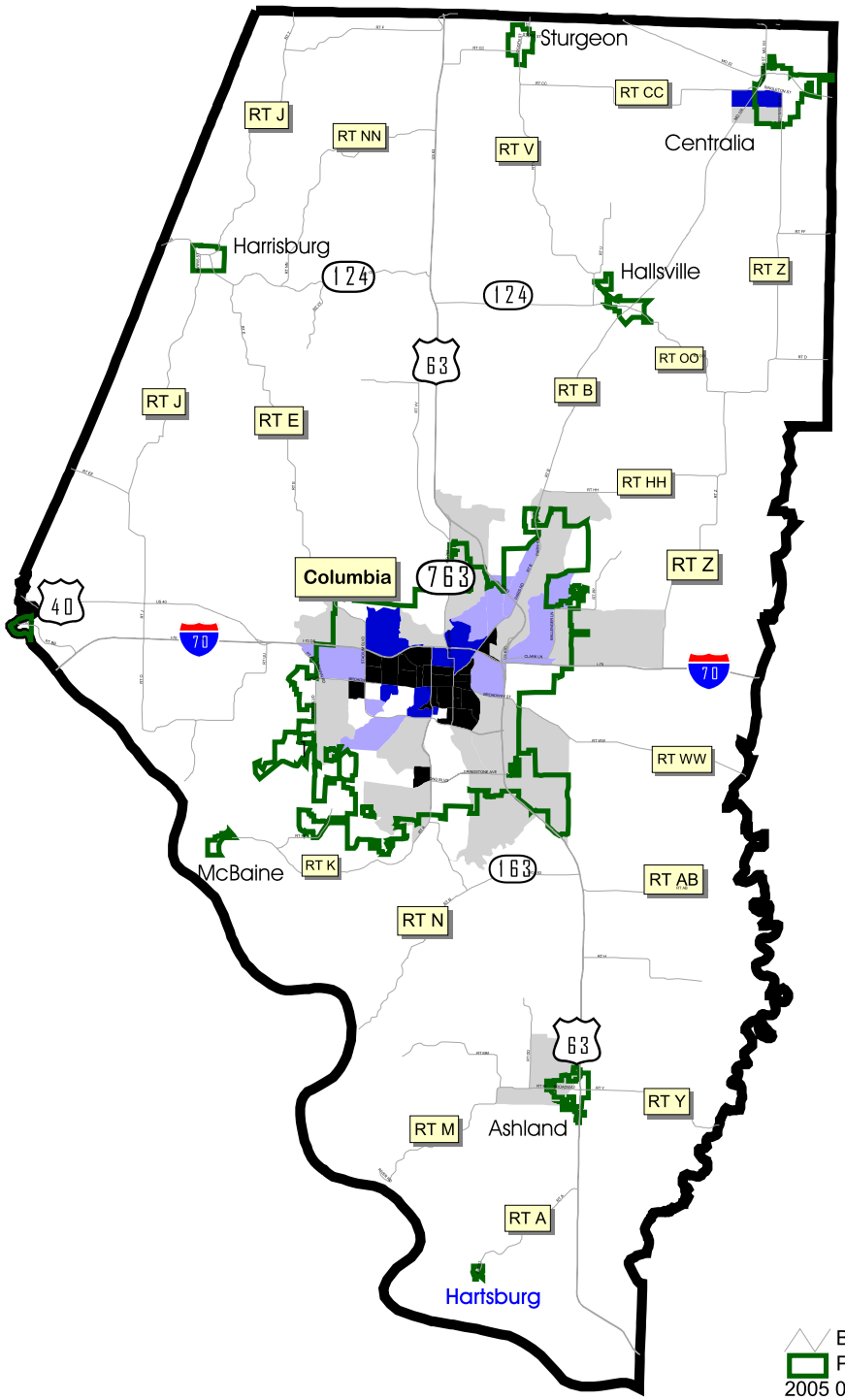
Zero-Vehicle Households

Persons who do not own or have access to a private vehicle are also considered transit-dependent. An estimated 6.5 percent (3,600) of the households within Boone County have no vehicle available for use in 2005. Countywide, the highest percentages of zero-vehicle households are in the area around Ridgeway School (Block Group 8-3 with 54.54 percent). The countywide distribution of zero-vehicle households is shown in Figure VIII-6. The next highest percentages of zero-vehicle households are northeast of Stephens College (Block Group 2-4 with 49 percent).

Figure VIII-6
2005 Boone County Density of Zero-Vehicle Households



Boone County Roads
Place
2005 0-Vehicle HHD
0 - 5 HHD's per sq. mi.
6 - 20 HHD's per sq. mi.
21 - 50 HHD's per sq. mi.
51 - 100 HHD's per sq. mi.
101 or more HHD's per sq. mi.
Boone County

0 8 16 Miles

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TRANSIT TRIP GENERATORS

Major Activity Centers

The major activity centers are important in terms of land use, trip generation rates, and their ability to be served by public transit. The region's major activity centers were identified to include universities, colleges, libraries, social service agencies, hospitals, shopping centers, malls, and some of the area's major employers. Activity centers in Boone County are concentrated mainly in the City of Columbia. The activity centers and major employers are illustrated in Figure VIII-7. Major activity centers of Columbia include the University of Missouri-Columbia, Columbia College and Stephens College, shopping centers include Columbia Mall, Forum Shopping Center, and hospitals such as the University Hospital and Clinics, Columbia Regional Hospital and Clinics, and Boone Hospital Center.

Figure VIII-7

Boone County Major Employers and Activity Centers

Educational Institutions

1. Columbia College
2. Stephens College
3. University of Missouri

Retail

4. Ace Hardware
5. Broadway Market Place Shopping Center
6. Columbia Mall
7. Crossroads Shopping Center
8. Forum Shopping Center
9. North Country Shopping Mall
10. Rock Bridge Shopping Center
11. Wal-Mart

Medical

12. Boone Hospital Center
13. Columbia Regional Hospital and Clinics
14. University Hospital and Clinics

Social Service Agencies

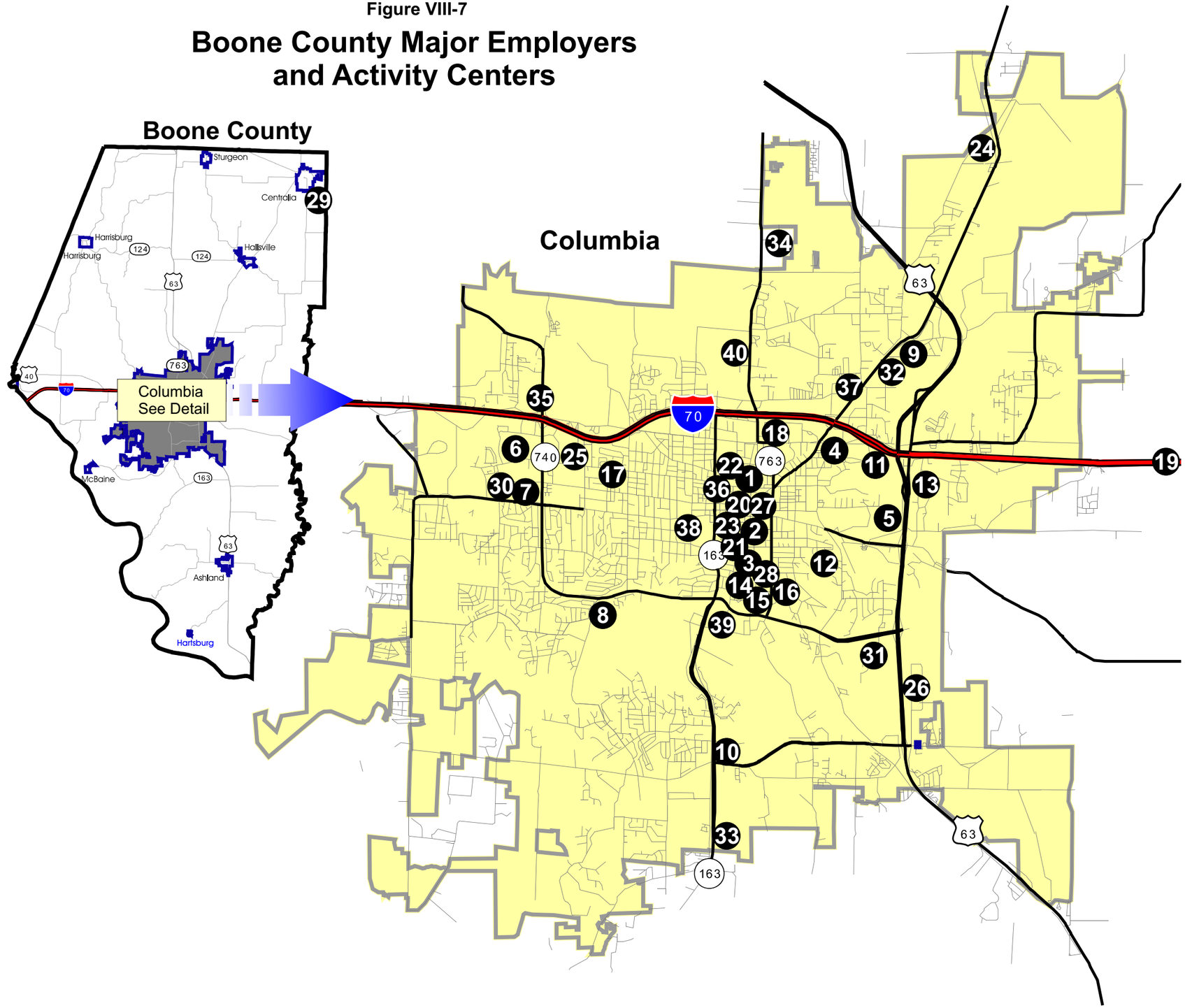
15. Columbia Area United Way
16. Elder Care Center
17. Lutheran Family and Children
18. Senior Center

Major Employers

19. ABC Laboratories
20. Boone County Government
21. Boone County National Bank, Downtown (multiple locations)
22. CenturyTel
23. City of Columbia
24. Collins and Aikman (formerly Textron)
25. Columbia Public Schools
26. Dane Corporation
27. First National Bank, Downtown (multiple locations)
28. Harry S. Truman Veterans Hospital
29. Hubbell Power Systems, Inc.
30. MBS Textbook Exchange, Inc.
31. MFA Oil Companies
32. Square D Corporation
33. State Farm Insurance Company
34. Summit Polymers
35. Toastmaster / Division of Salton, Inc.
36. Tribune Publishing Company
37. Watlow, Inc.

Other

38. Columbia Public Library
39. Faurot Field Memorial Stadium
40. Greyhound Bus Station



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Major Employers

Table VIII-4 reflects the City of Columbia's largest employers. The University of Missouri is the largest employer in the area with approximately 11,900 employees followed by University Hospital and Clinics, Columbia Public Schools, and Boone Hospital Center.

Table VIII-4
Major Employers in Columbia, Boone County

Name	No. of Employees	Industry
University of Missouri	11,868	Education
University Hospital and Clinics	4,900	Medical/Education
Columbia Public Schools	3,000	Education
Boone Hospital Center	2,028	Medical
City of Columbia	1,168	Government
State of Missouri (excludes UMC)	1,071	Government
MBS Textbook Exchange, Inc.	1,006	Distribution
Harry S. Truman Veteran's Hospital	1,000	Medical
Shelter Insurance - Corp. Headquarters	991	Insurance-Corporate Headquarters
State Farm Insurance Companies	952	Insurance-Regional Headquarters
US Government (excludes VA Hospital)	926	Government
Hubbell/Chance Company	908	Electric Utility Equipment
Columbia Foods-Oscar Mayer	700	Food
3M	639	Optical and Electronic Products
Boone County Government	394	Government
Columbia College	371	Education
Square D Corporation	370	Circuit Breakers
Collins & Aikman (formerly Textron)	350	Automotive Parts
Boone County National Bank	348	Finance
Dana Corporation	343	Automotive Parts
Watlow-Columbia, Inc.	338	Electrical Heating Elements
Tribune Publishing Company	308	Printing
MFA Oil Companies	290	Fuel Suppliers - Headquarters
Mid-Missouri Mental Health Center	280	Medical
First National Bank	255	Finance
CenturyTel	235	Telephone Co. - Division Headquarters
US Postal Service Distribution	217	Distribution
Summit Polymers	200	Automotive Parts
ABC Laboratories	189	Analytical Services
Toastmaster/Division of Salton, Inc.	176	Corporate Headquarters

Source: Regional Economic Development, Inc. Columbia, MO, 2001.

Chapter IX

CHAPTER IX
Transit Demand Assessment

INTRODUCTION

A key step in coordinating transportation services is a careful analysis of the mobility needs of various segments of the population and the potential ridership of transit services. Transit demand analysis is the basic determination of demand for public transportation in a given area. There are several factors that affect demand, not all of which can be forecasted. However, as demand estimation is an important task in developing any transportation plan, several methods of estimation have been developed in the transit field. The analysis makes intensive use of the demographic data and trends discussed previously.

This chapter presents an analysis of the *demand* for transit services in Boone County based upon standard estimation techniques. The transit demand identified in this section was used in the identification and evaluation of potential coordination opportunities presented in Chapter XIII. Seven methods are used to estimate the maximum transit trip demand in Boone County.

- Rural Transit Demand Estimation Model
- Fixed-Route Demand Estimation Model
- ADA Demand Estimation Model
- Modal Split Demand Estimates
- Employee Transit Use Estimates
- Mobility Gap
- Greatest Transit Needs

KEY CONCEPTS

Chapter II presented key concepts and definitions commonly used in the transportation industry. The following presents a review of key concepts used throughout the demand estimation methodologies:

- ***Passenger-Trip*** – Travel between an origin and destination, a round-trip is equivalent to two trips.

- ***Program-Related Trips*** – Trips taken to attend or in association with a human service program. These are trips which would otherwise not be made but for the existence of the program.
- ***Non-Program Trips*** – Trips taken by individuals, not related to a particular human service program.
- ***General Public Trips*** – Individual trips, not associated with a particular human service program.
- ***Transit Need*** – An estimate of transit trips needed annually and based on demographic characteristics regardless of actual service levels.
- ***Transit Demand*** – An estimate of expected transit service use based on specific demographic-based needs and service level assumptions.

RURAL TRANSIT DEMAND METHODOLOGY

An important source of information and the most recent research regarding demand for transit services in rural areas and for persons who are elderly or disabled is the *Transit Cooperative Research Program (TCRP) Project A-3: Rural Transit Demand Estimation Techniques.* This study, completed by SG Associates, Inc. and LSC, represents the first substantial research into demand for transit service in rural areas and small communities since the early 1980s.

The TCRP study documents present a series of formulas relating the number of participants in various types of programs in 185 transit agencies across the country. The TCRP analytical technique uses a logit model approach to the estimation of transit demand, similar to that commonly used in urban transportation models. This model incorporates an exponential equation, which relates the quantity of service and the demographics of the area. Transit demand estimates presented here are based upon demographics presented in Chapter VIII.

This analysis procedure considers transit demand in two major categories:

- *"program demand"* which is generated by transit ridership to and from specific social service programs, and
- *"non-program demand"* generated by other mobility needs of elderly persons, persons with disabilities, and the general public, including youth. Examples of non-program trips may include shopping, employment, and medical trips.

Non-Program Demand

As with any other product or service, the demand for transit services is a function of the level of supply provided. To use the TCRP methodology to identify a feasible maximum need, it is necessary to assume a high supply level, as measured in vehicle-miles per square mile per year. The high supply level is the upper-bound "density" of similar rural services provided in this country. This assessment of need for the rural areas, therefore, could be considered to be the maximum potential ridership if a high level of rural service were made available throughout Boone County. This methodology also can be used to estimate the demand for Boone County. The TCRP methodology is based on the permanent population, and therefore represents a good demand method to use for Boone County. Based upon information presented in Chapter VIII, non-program demand can be estimated based upon a specified service level.

For Boone County, a reasonable ***maximum*** level of service would be to serve every portion of the county with four round-trips (eight one-way trips) daily, Monday through Friday. This equates to approximately 2,400 vehicle-miles of transit service per square mile per year. This is at the upper range of observed rural systems.

Applying this feasible maximum service density to the population of Boone County yields the 2005 estimated transit demand for the general population including youth, as well as the elderly and mobility-limited populations as shown in Table IX-1. The 2005 Boone County potential demand for elderly transit service is 35,060 annual trips; disabled demand is 13,350 annual trips; and general public demand is 10,620 annual trips. The rural Boone County total estimated resident demand for 2005, using the TCRP method, is 59,000 annual trips. This amount would be desired by the elderly, mobility-limited, and general public if a very high level of transit service could be provided. This demand does not take into account the urban area of Columbia.

Table IX-1
2005 Estimated Rural Non-Program Transit Demand using the TCRP Method

Census Tract	Census Block Group	Area Description	Estimated Annual Passenger-Trip Demand					Estimated Daily Transit Demand		Daily Demand Density (Trips per Sq. Mile per Day)
			Elderly	Mobility Limited	Elderly + Mobility Limited	General Public	Total Annual Demand	#	%	
16.01	1	NE of Columbia, North of I-70	450	250	700	220	920	4	1.6%	0.3
16.02	1	E of Columbia, St. Charles Rd to Fulton Gravel Rd	1,050	540	1,590	300	1,890	7	3.2%	0.8
16.02	2	E Boone County boundary	1,450	280	1,730	90	1,820	7	3.1%	0.2
17.01	1	NE of Ashland	1,210	610	1,820	260	2,080	8	3.5%	0.2
17.01	2	NW of Ashland	1,550	410	1,960	740	2,700	10	4.6%	3.1
17.01	3	Hartsburg	2,990	870	3,860	470	4,330	17	7.3%	0.3
17.02	1	McBaine	1,000	460	1,460	230	1,690	7	2.9%	0.2
17.02	2	SE Boone County boundary, West of S Hwy 63	2,630	750	3,380	560	3,940	15	6.7%	0.3
18.03	1	NW of Columbia, North of I-70	1,760	710	2,470	1,460	3,930	15	6.7%	0.8
18.03	2	North of Rocheport	550	450	1,000	210	1,210	5	2.0%	0.2
18.03	3	Rocheport, North to I-70	1,100	160	1,260	250	1,510	6	2.6%	0.8
18.05	3	W Boone County boundary, S to I-70	1,210	370	1,580	420	2,000	8	3.4%	0.3
19.01	1	North of Harrisburg	1,150	810	1,960	810	2,770	11	4.7%	0.2
19.01	2	South of Harrisburg	2,390	1,310	3,700	700	4,400	17	7.5%	0.3
19.02	1	Sturgeon	1,610	410	2,020	580	2,600	10	4.4%	0.9
19.02	2	Hallsville	2,170	880	3,050	1,050	4,100	16	6.9%	0.4
19.02	3	NE of Columbia, East to Hwy 63	1,440	1,200	2,640	620	3,260	13	5.5%	0.3
19.02	4	NE Boone County boundary, SE of Hallsville	1,970	790	2,760	450	3,210	12	5.4%	0.3
20	1	North of Centralia	2,290	420	2,710	550	3,260	13	5.5%	1.2
20	2	W Centralia	1,420	560	1,980	230	2,210	9	3.7%	11.3
20	3	S Centralia	1,120	400	1,520	210	1,730	7	2.9%	8.7
20	4	NE Boone County boundary, South of Centralia	2,550	710	3,260	210	3,470	13	5.9%	0.7
Totals			**35,060**	**13,350**	**48,410**	**10,620**	**59,030**	**227**	**100%**	

Source: LSC, 2005; 2000 US Census, State of Missouri, Office of Administration.

Demand estimates using the TCRP methodology for 2010 and 2025 are provided in Appendix F. Total rural demand for 2010 and 2025 is estimated to be 72,120 and 109,440 one-way, annual passenger-trips respectively for Boone County.

Applying the ***existing*** level of service using information provided from OATS, this model can be calibrated. Using approximately 400 vehicle-miles per square-mile per year for Boone County—the current level of service provided by OATS—a total rural non-program demand can be estimated at 23,000 annual trips. This is a more realistic transit demand for the area. Again, while this is lower than OATS current ridership of 36,000, this represents only non-program trips in the rural areas of Boone County.

Program Trip Demand

The methodology for forecasting demand for program-related trips involves two factors.

- *Determining the number of participants in each program.*
- *Applying a trip rate per participant using TCRP demand methodology.*

The program data available for Boone County include the following programs —Developmentally Disabled, Group Home, Head Start, Mental Health Services, Senior Nutrition, and Sheltered Workshop. The participant numbers were reported by individual agencies and are also available through the Department of Developmental Disabilities. Appendix G presents the TCRP trip rates applied to each of the programs.

The existing program demand estimates are presented in Table IX-2. The existing program trip demand, using the participant numbers for each of the programs, is approximately 478,604 annual trips for Boone County, with approximately 85 percent of this demand within the urban area of the City of Columbia.

Table IX-2

Boone County Estimated Program-Related Transit Demand

Program Type	Estimated # of Participants	Annual Feasible Number of Rides		
		Estimated Urban	Estimated Rural	Total Annual
Developmental Services				
Adult	342	107,545	37,829	145,374
Pre-school (3 to 5 yrs)	57	9,445	3,323	12,768
Head Start	250	59,401	6,349	65,750
Job Training	1,420	147,954	46,586	194,540
Mental Health Services	20	5,205	1,735	6,940
Nursing Home	859	7,604	2,957	10,561
Senior Nutrition	101	19,125	7,438	26,563
Sheltered Workshop	17	4,965	1,563	6,528
Group Home	20	7,087	2,493	9,580
TOTAL POTENTIAL PROGRAM TRIPS		**406,160**	**72,444**	**478,604**

Source: Demand estimates based on the methodology presented in "TCRP Report 3: Workbook for Estimating Demand for Rural Passenger Transportation," 2000 US Census Bureau, and Boone County Human Service Provider Surveys.

Summary of TCRP Methodology

When combining the program demand estimates and non-program demand estimates using the TCRP methodology, Boone County's total existing transit demand is approximately 538,000 annual trips. However, combining only the rural portions of the TCRP Methodology yields the following estimates of demand:

59,000 non-program trips + 72,444 program trips =

131,444 TOTAL Annual Rural Transit Demand

FIXED-ROUTE DEMAND MODEL

The fixed-route demand model has been developed to evaluate scheduled service alternatives for the Columbia area. The model uses data from other communities which are applicable in Columbia. The model will prove valuable as coordinated and enhanced service options are researched and evaluated in future study phases.

Approach

The model format is based on household vehicle ownership, average walking distance to bus stops, and frequency of operation. The basic approach is described in the paper, *"Demand Estimating Model for Transit Route and System Planning in Small Urban Areas,"* Transportation Research Board, 730, 1979. This model incorporates factors for walking distance, the distance traveled on the bus, and the frequency of service or headway. The model used for Columbia is shown in Table IX-3. This model reflects the 2005 population estimates for the City of Columbia and similar ridership data that would be generated with the scheduled service. The ridership model is calibrated to adjust to demographic conditions in the City of Columbia.

The percentage of households with transit access is determined by the number of households within a quarter-mile of the scheduled transit service. Census block groups located entirely within a quarter-mile show 100 percent transit access. The model, as presented, assumes transit service throughout Columbia. The model of transit ridership may be used to estimate ridership for alternate service concepts. The alternate concepts would be incorporated into the model by changing the percentage of households served by transit, the walking distance, and frequency of service.

Using this model—which assumes that all residents of Columbia have access to transit routes within one-quarter mile walking distance and that routes run on 30-minute headways—a current demand of approximately 2,400 daily trips exists. This does not take into account the University student population who reside on campus, as the information used in this model is based on Census information which does not count temporary student populations. Compared to Columbia Area Transit's daily ridership, this demand is obviously much higher than current ridership; however, as stated, this is an indication of potential demand. Again, this only looks at general public ridership and not student services.

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Table IX-3
Fixed-Route Demand Model - Columbia Transit

CENSUS TRACT	BLOCK GROUP	Total # of Hhlds 2005	# of Hhlds with 0 Auto	# of Hhlds with 1 Auto	% of Hhlds with Transit Access	Hhlds Served by Transit 0 Auto	Hhlds Served by Transit 1 Auto	Basic Transit Trip Rates 0 Auto	Basic Transit Trip Rates 1 Auto	Walk Distance (ft)	Walk Factor 0 Auto	Walk Factor 1 Auto	Headway (min)	Headway Factor 0 Auto	Headway Factor 1 Auto	Daily Transit Trips 0 Auto	Daily Transit Trips 1 Auto	Daily Trip # of
1	1	450	132	142	100%	132	142	0.21	0.04	500	1.25	1.20	30	1.40	1.50	49	10	59
2	1	380	27	251	100%	27	251	0.21	0.04	500	1.25	1.20	30	1.40	1.50	10	18	28
2	3	383	55	245	100%	55	245	0.21	0.04	500	1.25	1.20	30	1.40	1.50	20	18	38
2	4	113	55	15	100%	55	15	0.21	0.04	500	1.25	1.20	30	1.40	1.50	20	1	21
3	1	328	30	155	100%	30	155	0.21	0.04	500	1.25	1.20	30	1.40	1.50	11	11	22
3	2	317	16	197	100%	16	197	0.21	0.04	500	1.25	1.20	30	1.40	1.50	6	14	20
3	3	575	50	239	100%	50	239	0.21	0.04	500	1.25	1.20	30	1.40	1.50	18	17	35
4.01	1	682	62	323	100%	62	323	0.21	0.04	500	1.25	1.20	30	1.40	1.50	23	23	46
4.01	2	153	42	85	100%	42	85	0.21	0.04	500	1.25	1.20	30	1.40	1.50	16	6	22
4.02	1	4	0	4	100%	0	4	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	0	0
4.02	2	22	4	12	100%	4	12	0.21	0.04	500	1.25	1.20	30	1.40	1.50	2	1	2
5	1	878	363	456	100%	363	456	0.21	0.04	500	1.25	1.20	30	1.40	1.50	133	33	166
5	2	316	45	229	100%	45	229	0.21	0.04	500	1.25	1.20	30	1.40	1.50	17	17	33
6	1	529	48	150	100%	48	150	0.21	0.04	500	1.25	1.20	30	1.40	1.50	17	11	28
6	2	441	0	155	100%	0	155	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	11	11
6	3	341	18	133	100%	18	133	0.21	0.04	500	1.25	1.20	30	1.40	1.50	7	10	16
6	4	256	0	97	100%	0	97	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	7	7
6	5	260	10	78	100%	10	78	0.21	0.04	500	1.25	1.20	30	1.40	1.50	3	6	9
6	6	366	0	139	100%	0	139	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	10	10
7	1	370	53	141	100%	53	141	0.21	0.04	500	1.25	1.20	30	1.40	1.50	19	10	30
7	2	784	88	410	100%	88	410	0.21	0.04	500	1.25	1.20	30	1.40	1.50	32	30	62
7	3	697	115	316	100%	115	316	0.21	0.04	500	1.25	1.20	30	1.40	1.50	42	23	65
8	1	204	58	109	100%	58	109	0.21	0.04	500	1.25	1.20	30	1.40	1.50	21	8	29
8	3	470	256	141	100%	256	141	0.21	0.04	500	1.25	1.20	30	1.40	1.50	94	10	104
8	4	445	115	253	100%	115	253	0.21	0.04	500	1.25	1.20	30	1.40	1.50	42	18	61
9	1	449	68	254	100%	68	254	0.21	0.04	500	1.25	1.20	30	1.40	1.50	25	18	43
9	2	390	68	234	100%	68	234	0.21	0.04	500	1.25	1.20	30	1.40	1.50	25	17	42
10.01	2	501	54	279	100%	54	279	0.21	0.04	500	1.25	1.20	30	1.40	1.50	20	20	40
10.01	3	1,380	33	737	100%	33	737	0.21	0.04	500	1.25	1.20	30	1.40	1.50	12	53	65
10.02	1	900	16	281	100%	16	281	0.21	0.04	500	1.25	1.20	30	1.40	1.50	6	20	26
10.02	4	1,236	51	488	100%	51	488	0.21	0.04	500	1.25	1.20	30	1.40	1.50	19	35	54
11.01	1	1,676	69	618	100%	69	618	0.21	0.04	500	1.25	1.20	30	1.40	1.50	25	44	70
11.01	2	890	15	290	100%	15	290	0.21	0.04	500	1.25	1.20	30	1.40	1.50	5	21	26
11.03	1	1,229	19	330	100%	19	330	0.21	0.04	500	1.25	1.20	30	1.40	1.50	7	24	31
11.03	2	1,066	10	326	100%	10	326	0.21	0.04	500	1.25	1.20	30	1.40	1.50	3	23	27
11.03	3	675	71	335	100%	71	335	0.21	0.04	500	1.25	1.20	30	1.40	1.50	26	24	50
11.04	1	2,129	50	600	100%	50	600	0.21	0.04	500	1.25	1.20	30	1.40	1.50	18	43	61
11.04	2	591	0	160	100%	0	160	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	11	11
12	1	520	40	213	100%	40	213	0.21	0.04	500	1.25	1.20	30	1.40	1.50	15	15	30
12	2	2,149	19	433	100%	19	433	0.21	0.04	500	1.25	1.20	30	1.40	1.50	7	31	38
12	3	528	0	145	100%	0	145	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	10	10
12	4	1,032	29	381	100%	29	381	0.21	0.04	500	1.25	1.20	30	1.40	1.50	10	27	38
13	1	264	122	103	100%	122	103	0.21	0.04	500	1.25	1.20	30	1.40	1.50	45	7	52
13	2	983	86	606	100%	86	606	0.21	0.04	500	1.25	1.20	30	1.40	1.50	31	44	75
13	3	440	43	332	100%	43	332	0.21	0.04	500	1.25	1.20	30	1.40	1.50	16	24	40
14	1	902	31	329	100%	31	329	0.21	0.04	500	1.25	1.20	30	1.40	1.50	11	24	35
14	2	701	8	271	100%	8	271	0.21	0.04	500	1.25	1.20	30	1.40	1.50	3	19	23
14	3	538	143	136	100%	143	136	0.21	0.04	500	1.25	1.20	30	1.40	1.50	52	10	62
14	4	845	19	335	100%	19	335	0.21	0.04	500	1.25	1.20	30	1.40	1.50	7	24	31
15.01	1	349	22	172	100%	22	172	0.21	0.04	500	1.25	1.20	30	1.40	1.50	8	12	21
15.01	2	347	0	158	100%	0	158	0.21	0.04	500	1.25	1.20	30	1.40	1.50	0	11	11
15.01	3	1,498	42	498	100%	42	498	0.21	0.04	500	1.25	1.20	30	1.40	1.50	16	36	51
15.01	4	697	24	280	100%	24	280	0.21	0.04	500	1.25	1.20	30	1.40	1.50	9	20	29
15.01	5	795	29	333	100%	29	333	0.21	0.04	500	1.25	1.20	30	1.40	1.50	10	24	34
15.01	6	480	45	252	100%	45	252	0.21	0.04	500	1.25	1.20	30	1.40	1.50	17	18	35
15.02	1	778	68	365	100%	68	365	0.21	0.04	500	1.25	1.20	30	1.40	1.50	25	26	51
15.02	2	1,506	109	606	100%	109	606	0.21	0.04	500	1.25	1.20	30	1.40	1.50	40	44	84
15.02	3	494	69	226	100%	69	226	0.21	0.04	500	1.25	1.20	30	1.40	1.50	25	16	42
16.01	2	1,574	39	509	100%	39	509	0.21	0.04	500	1.25	1.20	30	1.40	1.50	14	37	51
18.05	1	996	10	266	100%	10	266	0.21	0.04	500	1.25	1.20	30	1.40	1.50	3	19	23
18.05	2	713	17	252	100%	17	252	0.21	0.04	500	1.25	1.20	30	1.40	1.50	6	18	24
Subtotal		42,007	3,177	16,604		3,177	16,604						Estimated Weekday Ridership					2,363

Source: LSC, 2006.

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ADA DEMAND ESTIMATION MODEL

LSC prepared demand estimates for the demand-response ridership based on a methodology developed by the Federal Transit Administration (FTA). Factors used in this methodology include demographics, eligibility criteria, service area, availability of other services, socioeconomic characteristics, service characteristics, and fares. The methodology does not include program-related trips, which were discussed previously.

Paratransit trips are frequently designated as:

- Program-related: Program-related trips occur only to support specific programs, and the demand is directly related to the number of participants in the program.
- Non-program-related trips: Non-program trips are represented most by those individuals traveling for work, school, or other personal reasons.

Low and high demand estimates are produced with this methodology and are shown in Table IX-4. The demand estimates have been calculated by Census Block Group and show the current demand for paratransit services in the urban portions of Boone County. The annual trips for Boone County's estimated certified paratransit population ranges from approximately 12,766 to 56,170 annual trips. Currently, Columbia Area Transit's Paratransit service serves approximately 24,000 annual rides.

Table IX-4
2005 Estimated Paratransit Demand - Columbia Transit Paratransit

Census Tract	Census Block Group	Total 2005 Population	% of Mobility Limited Population 2005 Est.	2005 Mobility Limited Population	ADA Eligibility Factor	Estimate of ADA Eligible Population	Certification Factor	Estimate of Certified Population	Trip Rates (1) per Eligible Person Per Month		Eligible Population Annual Trips		Certified Population Annual Trips	
									Low	High	Low	High	Low	High
1	1	867	4.4%	38	60.0%	23	20%	8	1.0	4.4	274	1,206	91	402
2	1	670	6.2%	41	60.0%	25	20%	8	1.0	4.4	297	1,307	99	436
2	3	636	7.2%	45	60.0%	27	20%	9	1.0	4.4	327	1,441	109	480
2	4	473	6.5%	31	60.0%	18	20%	6	1.0	4.4	221	972	74	324
3	1	756	8.5%	65	60.0%	39	20%	13	1.0	4.4	464	2,044	155	681
3	2	1,134	4.0%	45	60.0%	27	20%	9	1.0	4.4	327	1,441	109	480
3	3	1,262	3.7%	47	60.0%	28	20%	9	1.0	4.4	335	1,474	112	491
4.01	1	1,035	2.0%	21	60.0%	13	20%	4	1.0	4.4	152	670	51	223
4.01	2	1,846	16.1%	297	60.0%	178	20%	59	1.0	4.4	2,140	9,414	713	3,138
4.02	1	2,156	5.2%	112	60.0%	67	20%	22	1.0	4.4	807	3,551	269	1,184
4.02	2	1,706	1.9%	32	60.0%	19	20%	6	1.0	4.4	228	1,005	76	335
5	1	1,341	6.0%	80	60.0%	48	20%	16	1.0	4.4	579	2,546	193	849
5	2	1,246	3.4%	42	60.0%	25	20%	8	1.0	4.4	305	1,340	102	447
6	1	1,240	4.2%	52	60.0%	31	20%	10	1.0	4.4	373	1,642	124	547
6	2	972	7.3%	71	60.0%	43	20%	14	1.0	4.4	510	2,245	170	748
6	3	764	6.6%	51	60.0%	30	20%	10	1.0	4.4	365	1,608	122	536
6	4	632	6.2%	39	60.0%	23	20%	8	1.0	4.4	282	1,240	94	413
6	5	626	1.2%	7	60.0%	4	20%	1	1.0	4.4	53	235	18	78
6	6	897	1.7%	15	60.0%	9	20%	3	1.0	4.4	107	469	36	156
7	1	856	3.6%	31	60.0%	18	20%	6	1.0	4.4	221	972	74	324
7	2	1,575	7.3%	115	60.0%	69	20%	23	1.0	4.4	830	3,652	277	1,217
7	3	1,489	3.2%	48	60.0%	29	20%	10	1.0	4.4	343	1,508	114	503
8	1	701	18.6%	130	60.0%	78	20%	26	1.0	4.4	937	4,121	312	1,374
8	3	900	15.2%	136	60.0%	82	20%	27	1.0	4.4	982	4,322	327	1,441
8	4	881	5.6%	50	60.0%	30	20%	10	1.0	4.4	358	1,575	119	525
9	1	1,035	8.5%	88	60.0%	53	20%	18	1.0	4.4	632	2,781	211	927
9	2	870	5.1%	44	60.0%	27	20%	9	1.0	4.4	320	1,407	107	469
10.01	2	974	3.3%	32	60.0%	19	20%	6	1.0	4.4	228	1,005	76	335
10.01	3	2,583	4.6%	118	60.0%	71	20%	24	1.0	4.4	853	3,752	284	1,251
10.02	1	2,130	2.4%	51	60.0%	30	20%	10	1.0	4.4	365	1,608	122	536
10.02	4	3,122	7.6%	236	60.0%	141	20%	47	1.0	4.4	1,698	7,471	566	2,490
11.01	1	4,803	6.6%	318	60.0%	191	20%	64	1.0	4.4	2,292	10,084	764	3,361
11.01	2	2,230	5.4%	121	60.0%	72	20%	24	1.0	4.4	868	3,819	289	1,273
11.03	1	2,898	3.1%	89	60.0%	53	20%	18	1.0	4.4	640	2,814	213	938
11.03	2	2,610	3.0%	79	60.0%	48	20%	16	1.0	4.4	571	2,513	190	838
11.03	3	1,391	6.8%	94	60.0%	56	20%	19	1.0	4.4	678	2,982	226	994
11.04	1	5,852	3.7%	215	60.0%	129	20%	43	1.0	4.4	1,546	6,801	515	2,267
11.04	2	1,713	2.0%	34	60.0%	20	20%	7	1.0	4.4	244	1,072	81	357

Table IX-4, continued

2005 Estimated Paratransit Demand - Columbia Transit Paratransit

Census Tract	Census Block Group	Total 2005 Population	% of Mobility Limited Population 2005 Est.	2005 Mobility Limited Population	ADA Eligibility Factor	Estimate of ADA Eligible Population	Certification Factor	Estimate of Certified Population	Trip Rates (1) per Eligible Person Per Month		Eligible Population Annual Trips		Certified Population Annual Trips	
									Low	High	Low	High	Low	High
12	1	1,216	3.8%	47	60.0%	28	20%	9	1.0	4.4	335	1,474	112	491
12	2	6,241	3.6%	222	60.0%	133	20%	44	1.0	4.4	1,599	7,035	533	2,345
12	3	1,268	1.3%	16	60.0%	10	20%	3	1.0	4.4	114	503	38	168
12	4	2,486	2.8%	71	60.0%	43	20%	14	1.0	4.4	510	2,245	170	748
13	1	707	7.6%	54	60.0%	32	20%	11	1.0	4.4	388	1,709	129	570
13	2	1,728	6.4%	111	60.0%	67	20%	22	1.0	4.4	799	3,518	266	1,173
13	3	596	10.8%	65	60.0%	39	20%	13	1.0	4.4	464	2,044	155	681
14	1	2,249	4.2%	95	60.0%	57	20%	19	1.0	4.4	685	3,015	228	1,005
14	2	1,716	2.7%	47	60.0%	28	20%	9	1.0	4.4	335	1,474	112	491
14	3	1,299	5.7%	74	60.0%	44	20%	15	1.0	4.4	533	2,345	178	782
14	4	2,167	3.9%	85	60.0%	51	20%	17	1.0	4.4	609	2,680	203	893
15.01	1	901	4.9%	44	60.0%	27	20%	9	1.0	4.4	320	1,407	107	469
15.01	2	893	4.6%	41	60.0%	25	20%	8	1.0	4.4	297	1,307	99	436
15.01	3	4,324	4.2%	182	60.0%	109	20%	36	1.0	4.4	1,310	5,762	437	1,921
15.01	4	1,605	5.6%	90	60.0%	54	20%	18	1.0	4.4	647	2,848	216	949
15.01	5	1,927	6.6%	127	60.0%	76	20%	25	1.0	4.4	914	4,020	305	1,340
15.01	6	1,161	3.5%	40	60.0%	24	20%	8	1.0	4.4	289	1,273	96	424
15.02	1	1,763	5.1%	90	60.0%	54	20%	18	1.0	4.4	647	2,848	216	949
15.02	2	3,342	6.7%	223	60.0%	134	20%	45	1.0	4.4	1,607	7,069	536	2,356
15.02	3	989	3.5%	35	60.0%	21	20%	7	1.0	4.4	251	1,106	84	369
16.01	2	3,876	5.2%	202	60.0%	121	20%	40	1.0	4.4	1,454	6,399	485	2,133
18.05	1	2,791	4.3%	121	60.0%	72	20%	24	1.0	4.4	868	3,819	289	1,273
18.05	2	1,852	4.3%	79	60.0%	48	20%	16	1.0	4.4	571	2,513	190	838
Total		**105,967**	**5%**	**5,319**		**3,191**		**1,064**			**38,298**	**168,511**	**12,766**	**56,170**

(1) Source: Survey of 7 "exemplary" paratransit operators. Crain, Et al. "Working Paper 6: Service Needs Analysis, San Francisco Bay Area Regional Paratransit Plan," Jan. 1990.

MOBILITY GAP METHODOLOGY

The mobility gap methodology identifies the amount of service required in order to provide equal mobility to persons in households without a vehicle as for those in households with a vehicle. The trip rates for households with vehicles serves as the target for those households without vehicles.

NHTS Trip Generation Rates

Household daily trip rates are taken from the 2001 National Household Travel Survey (NHTS) data and are generated for households with and without automobiles. The NHTS data set provides information used to define relationships and rates describing travel behavior in urban, suburban, and rural settings for the general public, transit-dependent, and other demographic cohorts. The 2001 NHTS data set is used to produce trip rate goals for transit-dependent services. The categories are broken out by rural and urban areas. The following text discusses the mobility gap calculations in more detail.

Mobility Gap Calculations

Recognizing that transit-dependent trip rates are less than those for persons in households with vehicles, the goal for each area is to provide a level of transit service sufficient to fill the mobility gap between trip rates for persons in households with automobiles and those in households without.

The 2001 NHTS provides a wealth of data that can be used to define relationships and rates describing actual travel behavior in urban, suburban, and rural settings for the general public, transit-dependent, and various demographic cohorts. Trip rates were derived from all the NHTS regions. It would be preferable to use only those trip rates which were calculated for the West North Central Census District; however, this region contained an insufficient number of records to be statistically reliable. Therefore, national trip rates were used and extrapolated to the Boone County area.

It must be noted that upon further investigation of readily available Census data, the most appropriate data for use in generating goal trip rates are age of house-

holder by vehicle availability in rural and non-rural (which includes urban and suburban) areas. Without getting into Public Use Micro Sample data—which is not available generally except through a State Data Center—the available data for planners to use in making these estimates are the Census STF3 files. These files report age of householder by vehicle availability in terms of age 15-64 and age 65 and over and vehicles available in terms of zero and one or more. The target trip rates generated for Boone County are reflective of these limitations.

In particular, the mobility gap methodology is intended to be used by officials from local agencies and jurisdictions using readily available data sources. Projecting future demand, level of service (LOS), and operational requirements are the goals of the mobility gap methodology. To do so requires, as discussed above, making projections of demographic conditions with readily available data. The data used within this study are readily available and permit estimates of trip rates by urban or rural setting for households headed by persons 15-64 or 65 and over in households with zero or one or more vehicles.

The LSC Team has previously observed that the household sizes are different for households with vehicles and households without vehicles. Therefore, the LSC Team developed an approach which adjusts for the difference in household sizes. This approach starts with the person-trip rate from the NHTS for those living in zero-vehicle households and those living in households with vehicles. These rates are shown in Table IX-5. The weighted household size is calculated from the available data by dividing the expanded total number of people represented in the survey by the expanded number of households represented in the survey. Table IX-6 shows the household sizes which have been calculated using data from all Census Districts.

Table IX-5 Person-Trip Rates		
Category	**Zero-Vehicle Households**	**Households with Vehicles**
Age 65 +		
Non-rural	1.71	3.67
Rural	1.18	3.38
Age 15-64		
Non-rural	3.27	4.49
Rural	2.74	4.19
Source: 2001 NHTS, LSC 2006.		

Table IX-6 Weighted Household Size		
Category	**Zero-Vehicle Households**	**Households with Vehicles**
Age 65 +		
Non-rural	0.85	0.98
Rural	0.88	0.97
Age 15-64		
Non-rural	1.08	1.15
Rural	0.98	1.14
Source: 2001 NHTS, LSC 2006.		

Household trip rates are calculated by multiplying the person-trip rate in Table IX-5 by the household size (data in Table IX-6). To adjust for the difference in household sizes, the person-trip rates for both households with and without vehicles are multiplied by the household size of households without vehicles. The difference in household size is shown for comparison, but the household size of households with vehicles is not included in the calculations. This provides a household rate for zero-vehicle households as if they had vehicles, but with the same household size. Table IX-7 shows the calculated weighted household rates used for Boone County.

Table IX-7 Weighted Household Trip Rates		
Category	**Zero-Vehicle Households**	**Households with Vehicles**
Age 65 +		
Non-rural	1.45	3.11
Rural	1.04	2.98
Age 15-64		
Non-rural	3.52	4.83
Rural	2.69	4.12
Source: 2001 NHTS, LSC 2006.		

The trips rates have been weighted to adjust for the household sizes and to provide a more precise demand estimate. In summary, the trip generation rates range from 1.04 for rural, zero-vehicle households to 4.83 as the highest trip rate for non-rural households with vehicles. The NHTS data set recognizes that, in general, trip rates are higher for households with autos than those without autos. This data set also recognizes that, in general, trip rates are higher for age 15-64 households than for those households age 65 or older. If one thinks of the age of households with children, these trip rates are reasonable.

The trip rates used for the purposes of this study are the zero-vehicle household trip rates which range from 1.04 to 3.52. The trip rates illustrate a pattern that those households under age 65 in non-rural areas have the highest trip rate for zero-vehicle households. On the other hand, rural households with zero vehicles over age 65 make fewer trips.

In contrast to the age 65 and older households with zero vehicles, households between the ages of 15-64 in non-rural areas have the highest trip rate. The 2001 data set does not specifically state why this pattern exists. However, if one thinks of the lifestyle of an average rural household, then the trip rates may seem reasonable. One member of the household may work in the agricultural sector making many trips from one point to another, while another member may work

part-time in the nearest local town or may have to take children back and forth to school.

Mobility Gap Summary

After determining the trip rates for households with and without vehicles, the difference between the rates is defined as the ***mobility gap***. These rates are further broken down by age (age 15-64 or age 65+). The gap between the trip rates is the amount of transit service needed to allow equal mobility between households with zero vehicles and households with one or more vehicles.

Trip Rate (HH w/ Auto) - Trip Rate (HH w/out Auto) = **Mobility Gap**

Table IX-8 uses the above mobility gap equation to illustrate the actual mobility gap for the non-urban areas of Boone County.

Table IX-8
Mobility Gap Trip Rates

Category	Trip Generation Rates			Trip Generation Rates		
	HH 15-64 w/o Veh Rate	HH 15-64 w/1+ Veh Rate	Mobility Gap	HH 65+ w/o Veh Rate	HH 65+ w/1+ Veh Rate	Mobility Gap
Not Rural	3.52	4.83	**1.31**	1.45	3.11	**1.66**
Rural	2.69	4.12	**1.42**	1.04	2.98	**1.93**

LSC, 2006.

The next step includes the generated mobility gap number multiplied by the number of households without autos. This equation determines the trip need to be served by a transit agency for a particular area.

Mobility Gap * (# of HH w/out Auto) = **Trip Need to be Served by Transit**

By using the data from the above tables, the percent of mobility gap filled is calculated and presented in Table IX-9.

Table IX-9
Daily Transit Demand for General Public in Boone County

Areas	Total Households						Total Daily Demand	Total Annual Demand
	HH 15-64 No Veh	Mobility Gap	Transit Demand	HH 65+ No Veh	Mobility Gap	Transit Demand		
Urban	2,364	1.31	3,103	640	1.66	1,060	4,162	1,298,647
Rural	220	1.42	313	199	1.93	385	698	181,418
Total							**4,860**	**1,480,065**

Census 2000, LSC, 2006.

Based upon previous information from transportation providers, approximately 615,000 annual trips are being provided. Again, this discounts the number of contracted rides for the University. This indicates, based upon a Mobility Gap need of 1.48 million annual trips, that approximately 42 percent of the need is being met within Boone County. Table IX-10 summarizes this information.

Table IX-10
2005 Annual Transit Demand Summary

Methodology	Daily Demand	Annual Demand	Trips Provided	Unmet Demand
Mobility Gap	4,860	1,480,065	615,000	58%

LSC, 2006.

Percent of Mobility Gap Filled

The equation used to calculate the percent of mobility gap filled is:

Percent of Mobility Gap Filled = Actual Daily Transit Trips / Total Trip Demand

As mentioned, Table IX-10 shows the percent of mobility gap filled for Boone County. The existing trips provided are based on reports of trips provided by Columbia Area Transit and OATS. The table uses the existing transit demand and calculates the percent of trips meeting the need for Boone County. Again, the percentages of the mobility gap filled is 42 percent while approximately 58 percent of the total estimated need is not being met.

MODAL SPLIT DEMAND ESTIMATION

The modal split demand estimation technique is based upon 2000 Census employee modal split percentages, as presented in Table IX-11. The estimated transit demand based upon Census modal split percentages is provided in Table IX-12. The modal split method of demand estimation shows a 2005 transit need of approximately 1,805,320 annual one-way passenger-trips if a very high level of service could be provided. Of this need, approximately 81 percent is needed within the urban core of Boone County. This need is expected to increase to an estimated 1,930,000 one-way passenger-trips annually for the county by 2010.

Table IX-11
Boone County Travel-To-Work Mode Split

Travel Mode	Boone County		Columbia	
	#	%	#	%
Drove Alone	54,782	77.1%	33,767	75.2%
Carpooled	8,961	12.6%	5,240	11.7%
Public Transportation	518	0.7%	484	1.1%
Motorcycle	88	0.1%	87	0.2%
Bicycle/Walk	4,072	5.7%	3,821	8.5%
Other Means	301	0.4%	200	0.4%
Worked at Home	2,290	3.2%	1,320	2.9%
Total	**71,012**	**100.0%**	**44,919**	**100.0%**

Source: US Census Bureau, 2000.

Table IX-12

Modal Split Method of Demand Estimation

Census Area	Description	Population [1] 2005	Population [1] 2010	Demand [2] 2005	Demand [2] 2010	2010 Demand Density	% of 2010 Regional Demand
Urban Study Area							
	Columbia and Periphery	105,967	113,340	1,458,630	1,560,130	17,335	27.0%
	Total	**105,967**	**113,340**	**1,458,630**	**1,560,130**	**17,335**	**27%**
Rural Study Area							
16.01	NE of Columbia, North of I-70	1,371	1,466	12,750	13,630	990	1.5%
16.02	E of Columbia, St. Charles Rd to Fulton Gravel Rd	1,909	2,042	17,750	18,990	2,115	3.3%
16.02	E Boone County boundary	1,402	1,500	13,040	13,950	317	0.5%
17.01	NE of Ashland	1,231	1,317	11,450	12,250	350	0.5%
17.01	NW of Ashland	1,341	1,434	12,470	13,340	3,956	6.2%
17.01	Hartsburg	3,094	3,310	28,780	30,780	531	0.8%
17.02	McBaine	1,521	1,627	14,140	15,130	521	0.8%
17.02	SE Boone County boundary, West of S Hwy 63	2,582	2,762	24,020	25,690	520	0.8%
18.03	NW of Columbia, North of I-70	2,146	2,295	19,960	21,350	1,124	1.8%
18.03	North of Rocheport	953	1,019	8,860	9,480	326	0.5%
18.03	Rocheport, North to I-70	1,327	1,420	12,340	13,200	1,706	2.7%
18.05	W Boone County boundary, S to I-70	1,269	1,357	11,800	12,620	503	0.8%
19.01	North of Harrisburg	1,575	1,684	14,650	15,660	269	0.4%
19.01	W Boone County boundary, S to I-70	2,731	2,922	25,410	27,170	508	0.8%
19.02	North of Harrisburg	1,166	1,248	10,850	11,600	1,070	1.7%
19.02	South of Harrisburg	2,564	2,743	23,850	25,510	598	0.9%
19.02	Sturgeon	2,557	2,735	23,780	25,440	597	0.9%
19.02	Hallsville	1,593	1,703	14,810	15,840	395	0.6%
20	NE of Columbia, East to Hwy 63	1,052	1,125	9,790	10,470	1,012	1.6%
20	NE Boone County boundary, SE of Hallsville	1,445	1,545	13,440	14,370	19,084	29.7%
20	North of Centralia	721	771	6,710	7,170	9,409	14.7%
20	W Centralia	1,725	1,845	16,040	17,160	912	1.4%
	Subtotal Rural Boone County	**37,274**	**39,868**	**346,690**	**370,800**	**46,815**	**73%**
Study Area Total		**143,241**	**153,208**	**1,805,320**	**1,930,930**	**64,150**	**100%**

Note 1: 2000 data based on 2000 US Census population figures and 2025 based on LSC estimates using State of Missouri population growth projections.
Note 2: Demand estimates assume that the percentage of employees using transit is 1.08 percent in the urban area and 0.73 in the rural area.
Note 3: Demand density is measured in terms of one-way passenger-trips per square mile per year.

Source: LSC Transportation Consultants, Inc.

POTENTIAL EMPLOYEE TRANSIT DEMAND

Table IX-13 provides the estimated employee transit demand based upon the total number of employed persons in the urban core area. Demand estimates assume that the percentage of employees using transit as derived from mode split data from the Census. Total demand based upon employment for the urban core is approximately 245,830 annual transit trips in 2005. Estimated demand for 2010 is approximately 262,960 annual one-way passenger-trips. Estimated county demand in 2005 is approximately 348,350 annual one-way passenger-trips for employees. This is based upon an average mode split of 0.9 percent for both the urban and rural areas of Boone County.

Table IX-13
Employee Transit Use Method of Urban Demand Estimation

Census Area	Employment [1]		Estimated Transit Demand [2]		2010 Demand Density [3]	% of 2010 Regional Demand
	2005	2010	2000	2010		
Columbia	45,630	48,810	245,830	262,960	2,890	70.6%
Urban Core Total	**48,253**	**48,810**	**245,830**	**262,960**	**2,890**	**71%**
Boone County Total	**77,173**	**82,540**	**348,350**	**372,570**	**620**	**100%**

Note 1: 2000 data based on 2000 US Census population figures and 2010 based on LSC estimates using State of Missouri population growth projections.

Note 2: Demand estimates assume that the percentage of employees using transit as derived from mode split data from the Census.

Note 3: Demand density is measured in terms of one-way passenger-trips per square mile per year.

Source: LSC Transportation Consultants, Inc.

POTENTIAL COLLEGE DEMAND

College demand was estimated using trip rates from other universities across the nation. Using the highest observable trip rates from other universities, Columbia Transit could see potential student demand levels at nearly 1.3 million annual one-way rides. Currently, the student trip rate for the University of Missouri is approximately 28.8 rides per student annually. The highest observable rate for a university-based city is Green Bay, Wisconsin with a trip rate of nearly 46. Table IX-14 provides historical trip rates for other university systems for comparison. Columbia Transit is above the average trip rate of 18.8. However, this is based on reported contracted rides for the student population and may not include students

who would otherwise use the city route system and not be counted as a "student"—likely this would increase this trip rate. If a percentage of general public rides were, in fact, students not counted as contracted rides, this may increase this trip rate higher than the 28.8 which is based on reported contracted rides. A trip rate higher than 35 trips per student per year may be realistic and produce a demand over 1.0 million one-way trips per year.

Table IX-14
Comparable Student Trip Rates

Location	System	Annual Ridership	% College Riders	College Ridership	FTE Student Population	Student Trip Rate
Canton, OH	RTA	1,123,445	5.0%	56,170	2,000	28.09
Cedar Rapids, IA	Five Seasons	1,580,000	9.0%	142,200	12,800	11.11
Columbia, SC	Columbia Transit	2,941,000	5.0%	147,050	17,242	8.53
Durango, CO	The Lift	67,850	49.0%	33,250	3,000	11.08
Gainesville, FL	RTS	1,074,000	20.0%	214,800	40,000	5.37
Green Bay, WI	GBT	1,800,000	13.0%	234,000	5,100	45.88
Modesto, CA	MAX	2,100,000	5.0%	105,000	14,000	7.50
Logan, UT	LTD	1,100,000	28.0%	308,000	13,200	23.33
Columbia, MO	Columbia Transit	1,384,168	58%	807,730	27,985	28.86
					Highest Observed Rate	**45.88**

Note: Historical data on ridership provided by individual systems.
Data on student population provided by individual colleges. Trip rates are expressed in trips per FTE (full-time enrolled) per year.

Source: LSC, 2006.

TRANSIT DEMAND SUMMARY

Various transit demand estimation techniques were used to determine Boone County's current overall transit demand and future transit demand. The various methods for estimating current demand are summarized below. It should be noted that Boone County's total demand is not the sum of all these estimates; rather these techniques give a picture of the various demands and estimations in the region.

Table IX-15 provides a summary of Boone County transit demand using the Employee Transit Need Method, Modal Split Method, College demand method, and TCRP Model. This summary is based upon annualized ridership estimates for 2005. Transit demand using these methods estimates an approximate need of

3,280,000 annual one-way passenger-trips for Boone County. It is estimated, through the various methodologies, that in 2010 transit demand is likely to exceed 4.0 million annual one-way passenger-trips.

As indicated in Table IX-15, the Mobility Gap Methodology is not calculated as part of the total demand. The reason for this is that the "Other Non-Program" trips category is essentially a different way of calculating the Mobility Gap. In this case, "Other Non-Program" trips are calculated by subtracting total Modal Split demand from Employee Demand. This yields an "Other Non-Program" demand for the urban area of approximately 1,200,000 trips. Comparably, the Mobility Gap Methodology yields an annual urban trip demand of approximately 1,300,000. Substituting the Mobility Gap Methodology for the "Other Non-Program" demand estimates increases annual need by 100,000 annual trips.

Unmet Needs

Based upon the information presented in this chapter, a reasonable level of demand can be estimated for the area. Nearly 50 percent of the urban and rural demand remains unmet. This is not to say that transportation providers are not doing everything in their power to provide the highest levels of service possible. However, given the constraints of funding and other extraneous factors, it is impossible to meet all the demand that could possibly exist in any area. This chapter has presented estimates of transit need based upon quantitative methodologies. The results are not surprising or unrealistic given LSC's past work in similar areas. As stated, no area can meet 100 percent of the transit demand; however, every attempt should be made to meet as much of the demand as possible, in both a cost-effective and efficient manner.

Qualitative needs are addressed in other chapters of this report. A wide range of community input was sought to determine additional needs and to help validate quantitative estimates. These qualitative needs were compared with the quantitative needs presented in this chapter to determine the true needs of Boone County residents.

Table IX-15
Summary of Boone County Transit Demand

URBAN ESTIMATES	Type of Trip					
	Work[1]	College[2]	Other Non-Program[3]	Total Non-Program	Program	TOTAL
Existing Urban Demand Estimates						
Urban Core	245,830	1,284,018	1,212,800	2,742,648	406,160	3,148,808
Existing Urban Ridership						
Columbia Transit and Human Service Providers – Urban [6]	112,606	804,340	423,620	1,340,566	226,337	1,566,903
Existing Urban Unmet Demand						
Urban Core	133,224	479,678	789,180	1,402,082	179,823	1,581,905
Percent of Existing Urban Demand Met						
Urban Core	45.8%	62.6%	34.9%	48.9%	55.7%	49.8%

RURAL ESTIMATES	Type of Trip					
	Elderly	Mobility Limited	General Public	Total Non-Program	Program	TOTAL
Existing Rural Demand Estimates						
Rural Boone County	35,060	13,350	10,620	59,030	72,444	131,474
Existing Rural Ridership						
OATS and Human Service Providers	21,200	4,240	9,890	35,330	30,663	65,993
Existing Rural Unmet Demand						
Rural Boone County	13,860	9,110	730	23,700	41,781	65,481
Percent of Existing Rural Demand Met						
Rural Boone County	60.5%	31.8%	93.1%	59.9%	42.3%	50.2%
Current Boone County Total Demand						**3,280,282**

2010 TOTAL STUDY AREA ESTIMATES	Total Non-Program	Program	TOTAL
2010 Demand Estimates			
Urban Core	3,590,480	434,428	4,024,908
Rural Boone County	72,120	77,485	149,605
Subtotal	3,662,600	511,913	4,174,513
2010 Unmet Demand If Transit Service Are Unchanged from 2000			
Urban Core	2,249,914	208,091	2,458,005
Rural Boone County	36,790	46,822	83,612
Subtotal	2,286,704	254,913	2,541,617

Note 1: Based upon employee trip estimation methodology.
Note 2: Based upon survey of college student transit trip rates. Future college demand based on 2 percent annual growth in number of FT students.
Note 3: Mode split methodology minus employee trip methodology for urban core, TCRP methodology in rural areas.
Note 4: Based upon mobility gap methodology.
Note 5: Ridership is based on the estimated number of transit-dependent riders.
Note 6: Total ridership annualized based upon 2005 surveys from reporting agencies.

Source: LSC, 2006.

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GREATEST TRANSIT NEEDS

The "greatest transit need" is defined as those areas in Boone County with the highest percentage of zero-vehicle households and elderly, disabled, and below-poverty populations. This information will be used in the development of a coordinated plan for the area and the identification of appropriate service constraints.

Methodology

The data included in Chapter VIII were used to calculate the greatest transit need. The categories used for the calculation were zero-vehicle households, elderly population, disabled population, and below-poverty population. Using these categories, LSC developed a "transit need index" to determine the greatest transit need. The percentage of the population for each US Census block group within each category was calculated, placed in numerical order, and divided into six segments. Six segments were chosen in order to reflect a reasonable range. Each segment contained an approximately equal number of US Census Block Groups in order to provide equal representation.

The US Census Block Groups in the segment with the lowest percentages were given a score of 1. The block groups in the segment with the next lowest percentages were given a score of 2. This process continued for the remainder of the block groups. The block groups in the segment with the highest percentages were given a score of 6. This scoring was completed for each of the categories (zero-vehicle households, elderly population, disabled population, and below-poverty population). After each of the block groups was scored for the four categories, the four scores were added up to achieve an overall score. Table IX-16 presents the ranked scores for each US Census block group in Boone County. The scores range from seven (lowest need) to 23 (highest need).

Table IX-16

2005 Greatest Transit Need Scores by Census Block Group

Census Tract	Census Block Group	Land Area (sq.ml.)	Zero-Vehicle Hhlds #	Zero-Vehicle Hhlds %	Zero-Vehicle Hhlds rank	Total # of Hhlds #	Total Number of Elderly 60 & over #	Total Number of Elderly 60 & over %	Total Number of Elderly 60 & over rank	Mobility-Limited Population #	Mobility-Limited Population %	Mobility-Limited Population rank	Below-Poverty Population #	Below-Poverty Population %	Below-Poverty Population rank	Overall Score (7-23)	Final (1-6)	Total Population (Persons) #
1	1	0.24	132	29.3%	5	450	58	6.7%	2	38	4.4%	3	330	38.0%	6	16	5	867
2	1	0.12	27	7.2%	4	380	38	5.7%	2	41	6.2%	5	182	27.1%	5	16	5	670
2	3	0.09	55	14.4%	5	383	52	8.2%	3	45	7.2%	5	129	20.3%	5	18	6	636
2	4	0.15	55	48.6%	5	113	7	1.6%	1	31	6.5%	5	87	18.3%	5	16	5	473
3	1	0.09	30	9.0%	4	328	8	1.1%	1	65	8.5%	6	382	50.5%	6	17	5	756
3	2	0.08	16	5.0%	4	317	43	3.8%	1	45	4.0%	3	452	39.8%	6	14	4	1,134
3	3	0.36	50	8.6%	4	575	210	16.7%	5	47	3.7%	2	350	27.7%	5	16	5	1,262
4.01	1	0.39	62	9.1%	4	682	15	1.4%	1	21	2.0%	1	498	48.1%	6	12	3	1,035
4.01	2	0.13	42	27.6%	5	153	24	1.3%	1	297	16.1%	6	305	16.5%	5	17	5	1,846
4.02	1	0.12	0	0.0%	1	4	0	0.0%	1	112	5.2%	4	0	0.0%	1	7	1	2,156
4.02	2	0.04	4	19.0%	5	22	17	1.0%	1	32	1.9%	1	23	1.4%	1	8	1	1,706
5	1	0.30	363	41.3%	5	878	81	6.1%	2	80	6.0%	5	777	58.0%	6	18	6	1,341
5	2	0.18	45	14.4%	5	316	21	1.7%	1	42	3.4%	2	228	18.3%	5	13	3	1,246
6	1	0.50	48	9.0%	4	529	197	15.9%	5	52	4.2%	3	79	6.4%	3	15	4	1,240
6	2	0.37	0	0.0%	1	441	233	23.9%	6	71	7.3%	5	10	1.0%	1	13	3	972
6	3	0.21	18	5.3%	4	341	187	24.5%	6	51	6.6%	5	65	8.4%	4	19	6	764
6	4	0.24	0	0.0%	1	256	164	25.9%	6	39	6.2%	5	22	3.5%	2	14	4	632
6	5	0.24	10	3.7%	3	260	132	21.1%	6	7	1.2%	1	18	2.9%	2	12	3	626
6	6	0.29	0	0.0%	1	366	153	17.1%	5	15	1.7%	1	0	0.0%	1	8	1	897
7	1	0.19	53	14.3%	5	370	157	18.3%	5	31	3.6%	2	112	13.1%	4	16	5	856
7	2	0.44	88	11.2%	5	784	330	21.0%	6	115	7.3%	5	228	14.5%	5	21	6	1,575
7	3	0.28	115	16.5%	5	697	177	11.9%	4	48	3.2%	2	365	24.5%	5	16	5	1,489
8	1	0.17	58	28.5%	5	204	33	4.7%	2	130	18.6%	6	246	35.1%	6	19	6	701
8	3	0.17	256	54.5%	5	470	225	25.0%	6	136	15.2%	6	499	55.5%	6	23	6	900
8	4	0.12	115	25.9%	5	445	131	14.9%	5	50	5.6%	4	364	41.3%	6	20	6	881
9	1	0.73	68	15.1%	5	449	65	6.2%	2	88	8.5%	6	447	43.2%	6	19	6	1,035
9	2	0.41	68	17.3%	5	390	80	9.2%	3	44	5.1%	4	260	29.9%	5	17	5	870
10.01	2	1.16	54	10.8%	5	501	130	13.4%	4	32	3.3%	2	173	17.8%	5	16	5	974
10.01	3	1.70	33	2.4%	2	1,380	473	18.3%	5	118	4.6%	3	190	7.4%	3	13	3	2,583
10.02	1	2.95	16	1.8%	2	900	151	7.1%	3	51	2.4%	1	316	14.8%	5	11	2	2,130
10.02	4	6.06	51	4.1%	3	1,236	619	19.8%	5	236	7.6%	5	185	5.9%	3	16	5	3,122
11.01	1	4.56	69	4.1%	3	1,676	205	4.3%	2	318	6.6%	5	1,556	32.4%	6	16	5	4,803
11.01	2	4.00	15	1.7%	2	890	102	4.6%	2	121	5.4%	4	1,029	46.1%	6	14	4	2,230
11.03	1	1.78	19	1.5%	2	1,229	247	8.5%	3	89	3.1%	2	551	19.0%	5	12	3	2,898
11.03	2	2.00	10	0.9%	1	1,066	413	15.8%	5	79	3.0%	2	82	3.2%	2	10	2	2,610
11.03	3	0.28	71	10.5%	5	675	142	10.2%	4	94	6.8%	5	271	19.5%	5	19	6	1,391
11.04	1	2.57	50	2.3%	2	2,129	552	9.4%	3	215	3.7%	2	732	12.5%	4	11	2	5,852
11.04	2	6.78	0	0.0%	1	591	130	7.6%	3	34	2.0%	1	76	4.4%	2	7	1	1,713
12	1	0.27	40	7.7%	4	520	308	25.3%	6	47	3.8%	2	94	7.7%	3	15	4	1,216
12	2	2.41	19	0.9%	1	2,149	646	10.4%	4	222	3.6%	2	191	3.1%	2	9	1	6,241
12	3	0.49	0	0.0%	1	528	429	33.9%	6	16	1.3%	1	0	0.0%	1	9	1	1,268
12	4	1.26	29	2.8%	3	1,032	161	6.5%	2	71	2.8%	1	325	13.1%	4	10	2	2,486

Table IX-16, continued

2005 Greatest Transit Need Scores by Census Block Group

Census Tract	Census Block Group	Land Area (sq.ml.)	Zero-Vehicle Hhlds #	Zero-Vehicle Hhlds %	Zero-Vehicle Hhlds rank	Total # of Hhlds #	Total Number of Elderly 60 & over #	Total Number of Elderly 60 & over %	Total Number of Elderly 60 & over rank	Mobility-Limited Population #	Mobility-Limited Population %	Mobility-Limited Population rank	Below-Poverty Population #	Below-Poverty Population %	Below-Poverty Population rank	Overall Score (7-23)	Final (1-6)	Total Population (Persons) #
13	1	0.20	122	46.0%	5	264	29	4.0%	2	54	7.6%	5	390	55.2%	6	18	6	707
13	2	1.65	86	8.7%	4	983	202	11.7%	4	111	6.4%	5	386	22.3%	5	18	6	1,728
13	3	0.24	43	9.9%	4	440	51	8.5%	3	65	10.8%	6	157	26.2%	5	18	6	596
14	1	7.15	31	3.4%	3	902	154	6.9%	2	95	4.2%	3	329	14.6%	5	13	3	2,249
14	2	0.84	8	1.2%	1	701	346	20.1%	6	47	2.7%	1	27	1.6%	1	9	1	1,716
14	3	1.59	143	26.5%	5	538	545	41.9%	6	74	5.7%	4	158	12.1%	4	19	6	1,299
14	4	2.30	19	2.3%	2	845	261	12.1%	4	85	3.9%	2	81	3.8%	2	10	2	2,167
15.01	1	0.88	22	6.4%	4	349	54	6.0%	2	44	4.9%	3	51	5.6%	3	12	3	901
15.01	2	2.24	0	0.0%	1	347	73	8.2%	3	41	4.6%	3	125	14.0%	5	12	3	893
15.01	3	4.31	42	2.8%	3	1,498	244	5.6%	2	182	4.2%	3	746	17.2%	5	13	3	4,324
15.01	4	0.89	24	3.5%	3	697	220	13.7%	4	90	5.6%	4	106	6.6%	3	14	4	1,605
15.01	5	0.76	29	3.6%	3	795	203	10.5%	4	127	6.6%	5	143	7.4%	3	15	4	1,927
15.01	6	0.64	45	9.5%	4	480	81	7.0%	3	40	3.5%	2	381	32.8%	6	15	4	1,161
15.02	1	5.29	68	8.7%	4	778	157	8.9%	3	90	5.1%	4	500	28.4%	5	16	5	1,763
15.02	2	2.62	109	7.2%	4	1,506	523	15.7%	5	223	6.7%	5	345	10.3%	4	18	6	3,342
16.01	1	13.77	37	7.1%	4	518	66	4.8%	2	49	3.5%	2	42	3.1%	2	10	2	1,371
16.02	1	8.98	26	3.5%	3	760	153	8.0%	3	106	5.5%	4	59	3.1%	2	12	3	1,909
16.02	2	44.03	6	1.2%	1	511	210	15.0%	5	55	3.9%	2	17	1.2%	1	9	1	1,402
17.01	1	34.96	7	1.6%	2	473	176	14.3%	5	119	9.7%	6	52	4.2%	2	15	4	1,231
17.01	2	3.37	36	6.5%	4	552	225	16.8%	5	79	5.9%	4	144	10.7%	4	17	5	1,341
17.01	3	57.93	15	1.3%	1	1,148	435	14.0%	4	169	5.5%	4	92	3.0%	2	11	2	3,094
17.02	1	29.03	7	1.3%	1	565	145	9.5%	3	90	5.9%	4	44	2.9%	2	10	2	1,521
17.02	2	49.36	20	2.1%	2	975	383	14.8%	5	146	5.7%	4	110	4.3%	2	13	3	2,582
18.03	1	18.99	21	2.7%	3	797	256	11.9%	4	137	6.4%	5	284	13.3%	4	16	5	2,146
18.03	2	29.09	14	4.0%	3	343	79	8.3%	3	87	9.1%	6	41	4.3%	2	14	4	953
18.03	3	7.74	23	4.6%	3	510	160	12.0%	4	32	2.4%	1	50	3.7%	2	10	2	1,327
18.05	3	25.10	7	1.5%	2	485	176	13.8%	4	73	5.8%	4	81	6.4%	3	13	3	1,269
19.01	1	58.15	13	2.2%	2	584	167	10.6%	4	158	10.0%	6	159	10.1%	4	16	5	1,575
19.01	2	53.49	16	1.6%	2	1,001	347	12.7%	4	256	9.4%	6	136	5.0%	3	15	4	2,731
19.02	1	10.84	48	10.2%	5	465	234	20.0%	6	79	6.8%	5	113	9.7%	4	20	6	1,166
19.02	2	42.68	44	4.6%	3	957	315	12.3%	4	172	6.7%	5	206	8.0%	4	16	5	2,564
19.02	3	42.59	12	1.2%	1	956	209	8.2%	3	234	9.1%	6	122	4.8%	2	12	3	2,557
19.02	4	40.09	19	3.2%	3	593	287	18.0%	5	153	9.6%	6	89	5.6%	3	17	5	1,593
20	1	10.34	45	9.8%	4	465	333	31.7%	6	82	7.8%	5	108	10.3%	4	19	6	1,052
20	2	0.75	57	10.4%	5	550	207	14.3%	5	110	7.6%	5	44	3.1%	2	17	5	1,445
20	3	0.76	8	3.0%	3	280	166	23.0%	6	78	10.9%	6	41	5.7%	3	18	6	721
20	4	18.82	13	2.0%	2	650	370	21.5%	6	137	8.0%	6	40	2.3%	2	16	5	1,725
BOONE COUNTY TOTAL:			***3,673***			***56,146***	***16,488***			***7,922***			***19,422***					***143,241***

Source: US Census Bureau & LSC, 2005.

Results

Figure IX-1 presents Boone County's US Census Block Groups with the greatest transit need, along with the transit need index. Seventeen block groups were determined to have the greatest transit needs based on the zero-vehicle households, elderly population, disabled population, and below-poverty population. Table IX-17 presents information on these 17 block groups. As shown in Figure IX-1, the greatest transit need is mainly in the City of Columbia. The other areas of greatest transit need are in the areas around Centralia and Sturgeon.

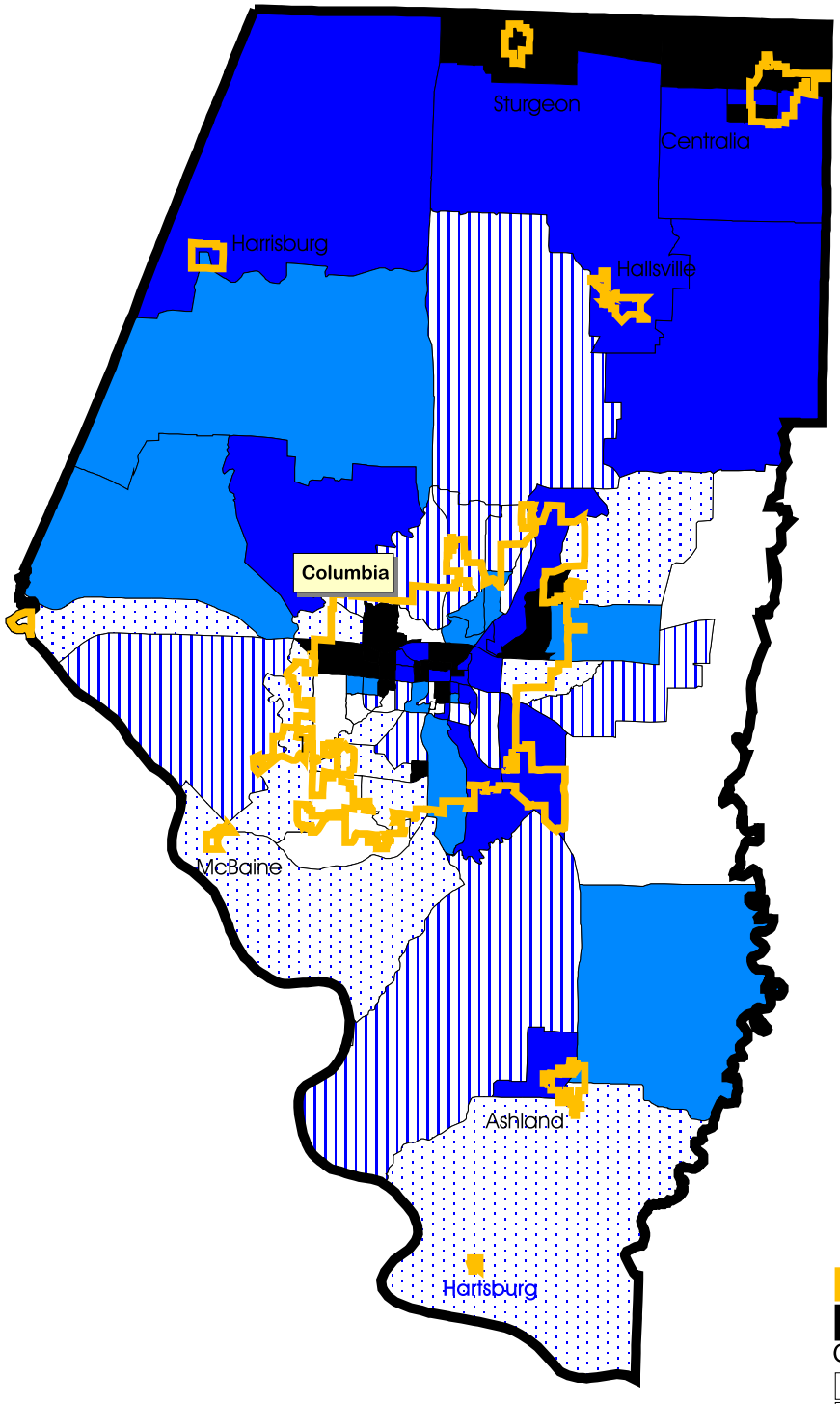
Table IX-17
Census Block Groups with Greatest Transit Need

Census Tract	Census Block Group	Description
2	3	City of Columbia; intersection of College Ave and Paris Rd
5	1	University of Missouri
6	3	North of Forum Shopping Center
7	2	Lutheran Family and Children
8	1	North of Columbia Millwork and Supply
8	3	North of Pet Healthcare International
8	4	South of Tribune Publishing Company
9	1	Senior Center; South of I-70
11.03	3	S Columbia; intersection of Providence Rd and Nifong Blvd
13	1	Columbia Public Library
13	2	W Columbia; South of I-70 and W Stadium Blvd
13	3	East of Crossroads Shopping Center
14	3	NW Columbia; North of I-70 and Stadium Blvd
15.02	2	NE Columbia; East of Hwy 63
19.02	1	Sturgeon
20	1	North of Centralia
20	3	S Centralia

LSC,2006.

By identifying those areas with a high need for public transportation, LSC was able to uncover a pattern for the areas with the highest propensity to utilize transit service. As LSC examines coordinated services, Figure IX-1 can be used in the analysis to ensure that areas with a high transit need would be adequately served. Those US Census Block Groups not scoring in the highest category, but still having a high score, could still be considered a high priority for transit service.

Figure IX-1
Greatest Transit Needs



Chapter X

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER X
University Input

OVERVIEW

This chapter presents a brief analysis of a survey program directed toward University of Missouri students and staff. Survey responses were solicited via an online questionnaire for both students and employees of the University. Hard copy responses were also received from some employees and entered into the appropriate database. Both survey forms are provided in Appendix H. The University employee survey is the same survey used for the community-wide survey.

UNIVERSITY STUDENT SURVEY RESPONSES

To ensure that the University student population was given the opportunity to provide input into the planning process, a web-based survey was provided to the entire student population. University representatives sent an e-mail explaining the purpose of the survey with instructions and a link to the online form. Students could access the survey form at their leisure. A total of 89 responses were received during a two-week time period in March. This does not represent a statistically valid sample size, and therefore results should be viewed with extreme caution. Detailed analysis was not performed—i.e., responses were not cross-tabulated—due to the low response rate. What follows is a brief review of the available responses.

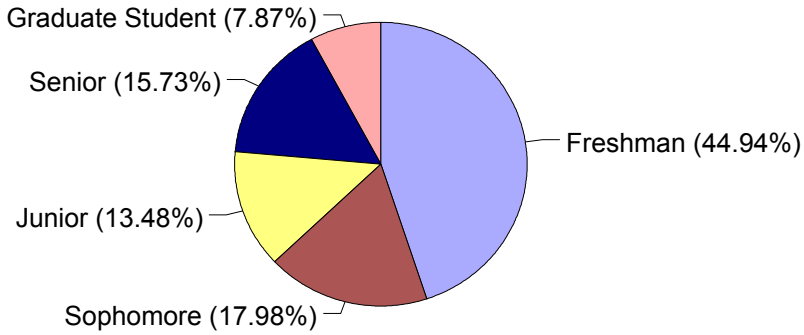
Demographic Characteristics

General demographics were sought from each respondent regarding year in school, where respondents live, whether they have a driver's license, and if they had a personal vehicle available. Responses to these questions are provided in the following.

Year in School

Students were asked to indicate their current year in school. By far, the greatest number of respondents indicated that they were in their freshman year of school. Approximately 45 percent of the respondents indicated they were freshmen. Figure X-1 provides the respondents by year in school. As shown, graduate students made up approximately eight percent of the respondents, or seven responses.

Figure X-1
Student Year



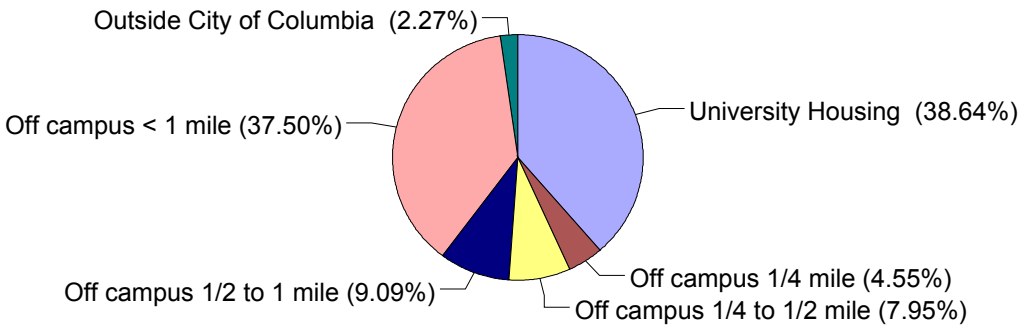
Residence and Living Arrangements

Students were then asked to indicate where they reside while attending school. Figure X-2 provides the responses according to approximate areas, such as on campus or indicating a distance from campus. Over 60 percent of the respondents to the survey reported that they reside off-campus. Of the on-campus housing units, most reported Mark Twain residence hall, followed by Hudson Hall.

Students were asked about specific living arrangements regarding how many people they currently reside with. On average, students have about one person living with them. Of those who have roommates, approximately 70 percent of those roommates have personal vehicles.

Figure X-2

Where Do You Live While Attending MU?



Availability of Driver's License and Personal Vehicle

Respondents were asked to indicated if they currently have a driver's license and whether they have a personal vehicle available. These two indicators are important in determining a need for transportation. These two indicators can help determine truly transit-dependent individuals. However, as with many colleges or universities across the nation, many students have both a driver's license and a personal vehicle. In this case, nearly 96 percent of the respondents hold a valid driver's license, while 83 percent own a personal vehicle. Figures X-3 and X-4 illustrate these percentages. Cross-tabulation was performed on this set of questions. Cross-tabulation allows analysts to determine, for example, of the percentage of respondents who have a driver's license, what percentage then own a personal vehicle. Table X-1 provides this information. As shown, intuitively, all those who own a vehicle (83 percent) also have a driver's license. However, of the 16 percent who reported they do not own a car, the majority do have a driver's license. Four percent of the respondents reported they both do not have a drivers' license and do not own a car. A cross-tabulation was performed to determine those who do not own a personal vehicle and whether they live with someone who does. Nine percent

of respondents responded that they do not own a car, but live with someone who does. Respondents also indicated where they currently park their vehicles. This is provided in Appendix I: MU Student Survey Comments.

To follow up on whether students drove to campus, respondents were asked to indicate how much, on average, they pay per month to park. The average cost to park per month was $28.00.

Figure X-3
Driver's License

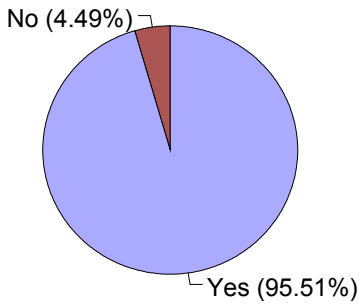


Figure X-4
Personal Vehicle Available

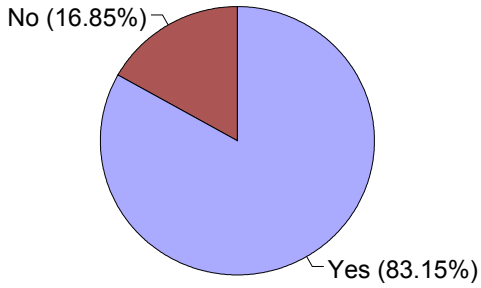


Table X-1
Number of Respondents who use a Personal Vehicle by Driver's License

Personal Vehicle	Drivers License	
	No	Yes
No	4%	12%
Yes	0%	83%

Note: LSC MSU Transportation Survey, 2006.

Trip Characteristics and Needs

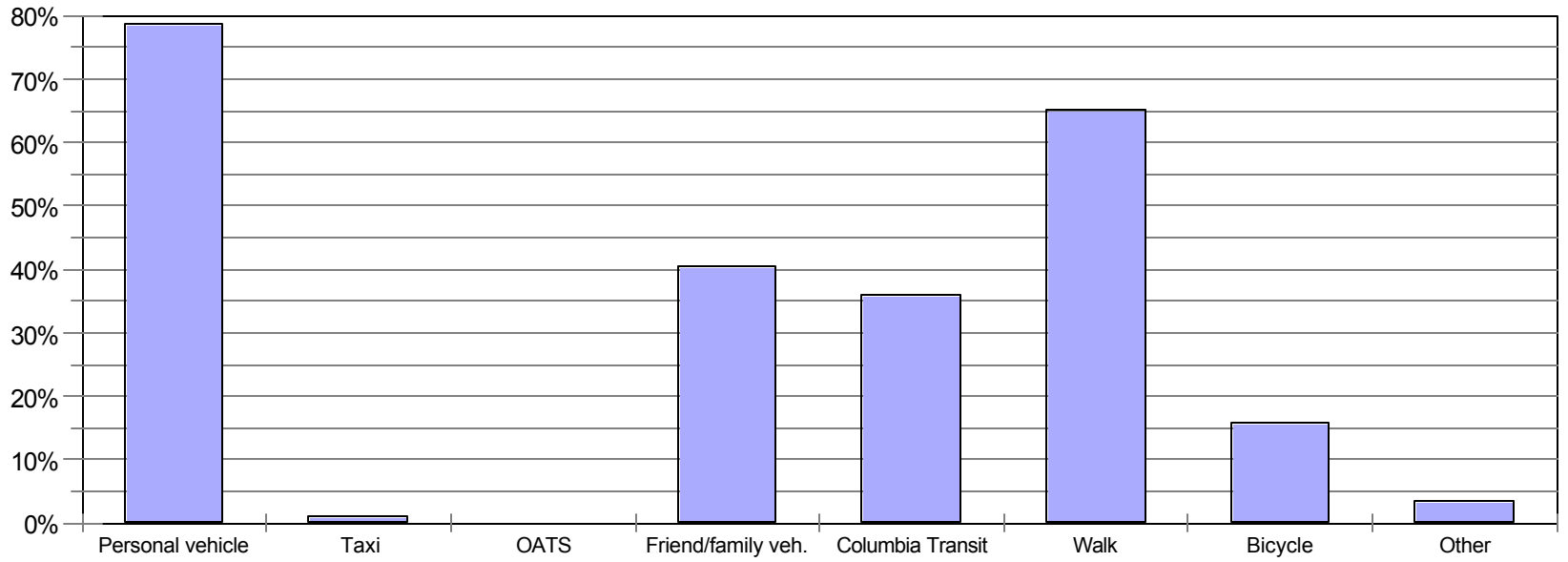
The assessment of needs, presented quantitatively in Chapter IX, is again assessed at a qualitative level. This qualitative data (survey responses), however, can then be quantitatively analyzed. Questions to assess transportation need include asking what types of transportation students currently use, how often they might use public transportation, when they need service, and what their destinations might be.

Means of Transportation

Respondents were asked to indicate all means of transportation currently used—taxi, OATS, Columbia Transit, walking, riding a bike, driving a private auto, using a friend or a family vehicle, or other means. Figure X-5 illustrates the responses. It must be noted that since respondents could indicate more than one response, these percentages will not sum to 100 percent. As shown, personal vehicle makes up a large percentage of travel, while walking, not surprisingly for college students, makes up the next highest means of transportation.

Figure X-5

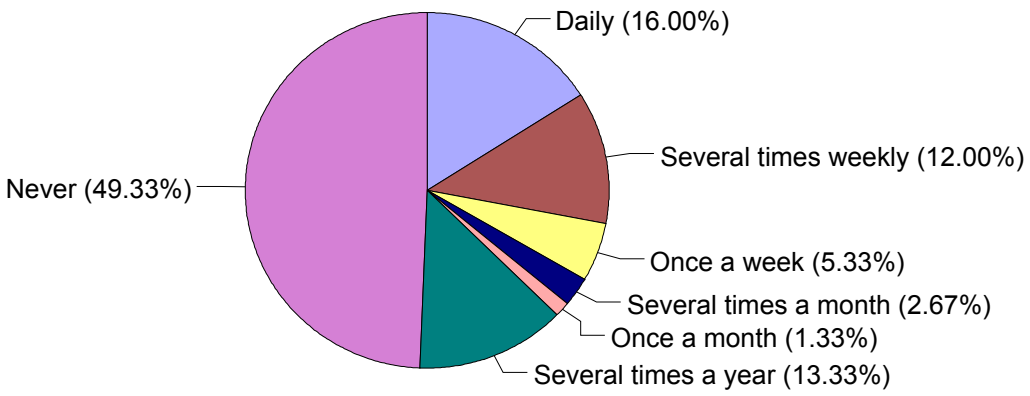
Means of Transportation



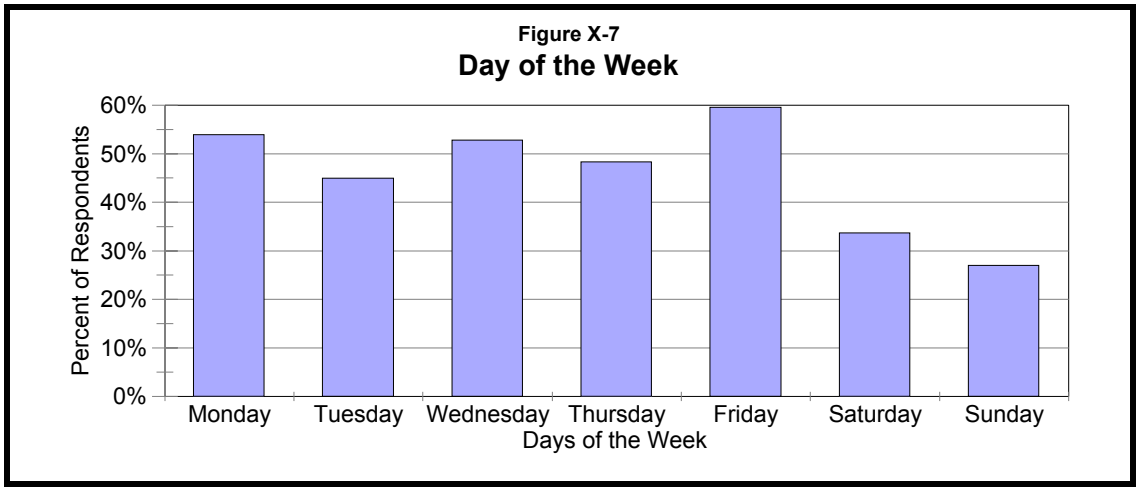
Frequency of Public Transportation Use

Students were asked to indicate how often they use public transportation, if they currently use service. Figure X-6 provides responses, with nearly 50 percent reporting they never use public transportation. Sixteen (16) percent use service daily, while 12 percent use the service several times weekly.

Figure X-6
Ridership Frequency



Students then were asked what days they need transportation services. Responses were fairly constant throughout the week. However, as shown in Figure X-7, 60 percent of the respondents reported needing service on Fridays. Weekends were lower than weekdays.



Hours of service is an important characteristic for providing service. Knowing when your market segments need service helps service providers plan operational parameters. This question was used to determine when students most need transportation services. Students indicated that they most need service from 4:00 to 6:00 p.m., with the 2:00 to 4:00 p.m. time period being the second most needed time period. None indicated needing service from 6:00 until 8:00 p.m. Figure X-8 shows these responses. Again, respondents could indicate more than one response for the question, and therefore percentages will not sum to 100 percent.

Off-Campus Travel

Students were asked how often they need to leave campus. Forty-nine (49) percent indicated they need to leave campus daily, 27 percent reported needing to leave several times daily, while 24 percent need to leave once per week.

Common Trip Destinations

Respondents were asked to indicate the most common trip destinations they make during an average week. Students could indicate more than one response, so percentages will not sum to 100 percent. Figure X-9 illustrates the responses showing that the most common destination made was to restaurants. This was followed by shopping destinations and trips to the bank. The least reported was for child care destinations.

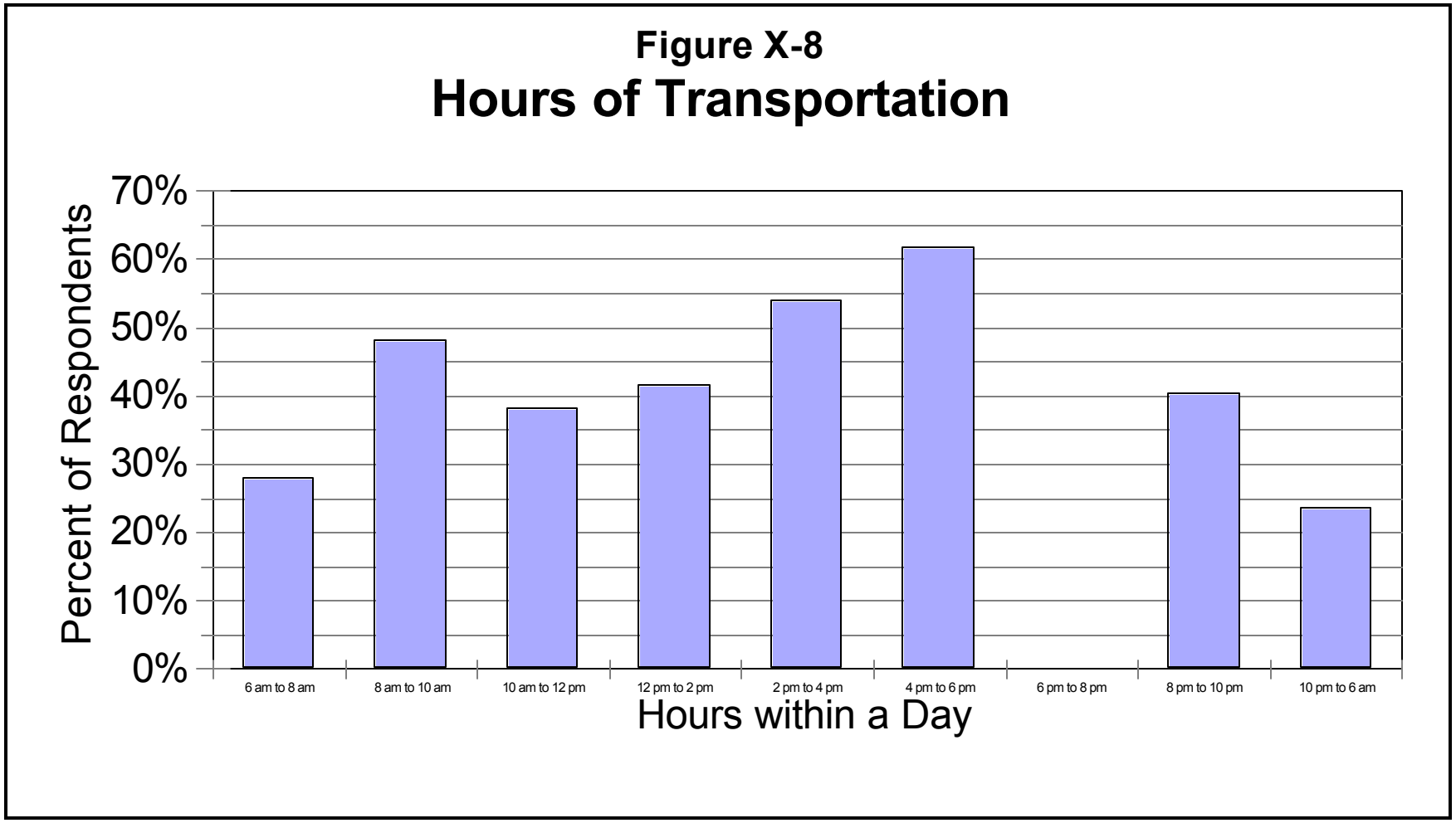
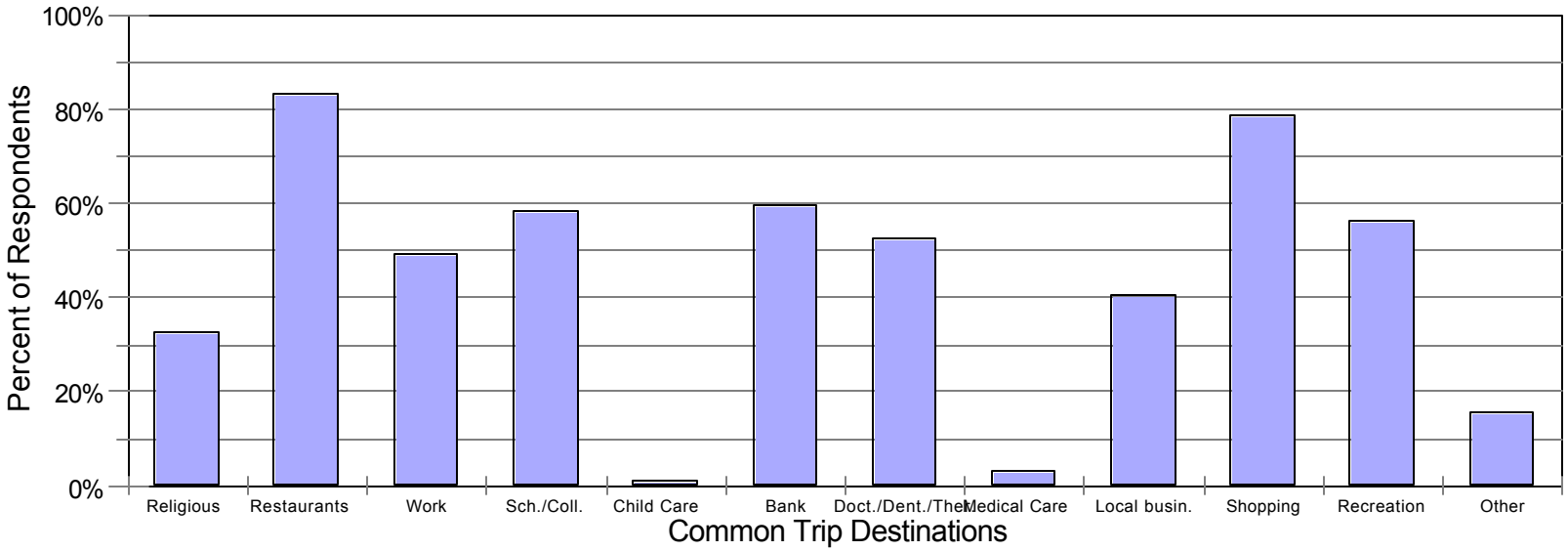


Figure X-8
Hours of Transportation
Percent of Respondents
70%
60%
50%
40%
30%
20%
10%
0%
6 am to 8 am
8 am to 10 am
10 am to 12 pm
12 pm to 2 pm
2 pm to 4 pm
4 pm to 6 pm
6 pm to 8 pm
8 pm to 10 pm
10 pm to 6 am
Hours within a Day

Figure X-9

Common Trip Destinations

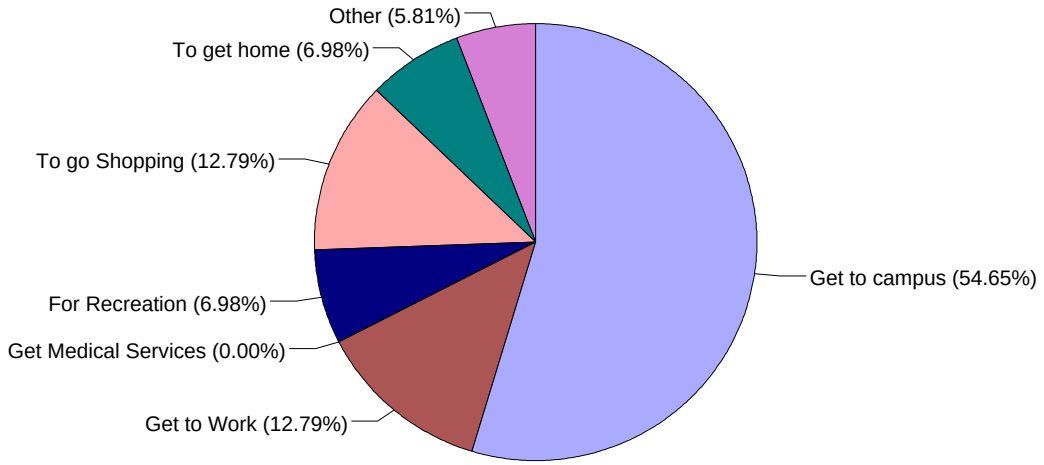


Primary Trip Purpose

To follow up on trip destinations, students were asked to indicate the primary purpose for using public transportation. Figure X-10 indicates that the primary purpose of trips would be to get to campus, with 55 percent of all respondents indicating this as the primary purpose. The second most reported purposes were to get to work and to go shopping, both 12 percent.

Figure X-10

Primary Trip Purpose



Increasing Use

To determine future use of public transportation, two questions were posed to respondents to determine what would motivate them use public transportation to a greater extent and what characteristics were important in a transportation service. Appendix I provides these comments. For the most part, respondents indicated they did not know how to use the system and complained of frequency, lack of convenience, and high fares.

Important Service Characteristics

Students were then asked to rank the characteristics which influenced their decision to use public transportation. Characteristics were ranked on a scale of 1 to 4, with 1 being not important and 4 being very important. Again, the middle

point of responses would be 2.5, so an average score of 3.0 or higher would indicate service characteristics important in the decision to use public transportation. Table X-2 presents these characteristics and their respective scores. As shown, the characteristic of having service close to one's home was ranked the highest, with an average score of 3.59, representing important to very important. The lowest score was given to the characteristic which represents service frequency. An average score of 2.15 was given to service every few hours, as this is shown to be a desirable characteristic, but one which may hinder whether a student uses services or not. Comparably, the characteristic of whether service was offered every half-hour was ranked relatively high.

Table X-2
Characteristics That Influence Public Transportation
(ranked in descending order)

Attributes	Average Score
Service close to my home	3.59
Service every half-hour	3.48
Guaranteed ride home	3.44
Clean buses	3.26
Service must be flexible in scheduling rides	3.18
Weekend service	3.11
Evening service	3.05
Accept different forms of payment	3.00
Express service (very few stops)	2.95
Service every hour	2.80
Service from home to campus /work	2.69
Employer pays part of the cost	2.60
Attractive buses	2.44
Service from a park-and-ride lot to campus/work	2.36
Service twice a day	2.23
Service every few hours	2.15

Note: LSC MSU Transportation Survey, 2006.

Fare Payment

Finally, students were asked if they would be willing to pay for public transportation, and if so, what they would be willing to pay for a one-way trip. Fifty-eight percent indicated they would be willing to pay for public transportation. Seventy-seven percent of the respondents would be willing to pay up to $2.00 per trip, while

13 percent would pay from $2.00 to $3.00 per trip, with the remaining 10 percent willing to pay $3.00 or more per trip.

Transportation Demand

Transportation Need Beyond City/County

Finally, to determine needs and use, students were asked to indicate if they needed transportation beyond their home county and/or city. Only a few respondents indicated they needed transportation beyond either county or city. Of those, many reported needing service to Kansas City, Jefferson City, St. Louis, and major airports in the two larger cities. City/county transportation needs are presented in Appendix J. Additional comments are provided in Appendix K.

UNIVERSITY EMPLOYEE SURVEY RESPONSES

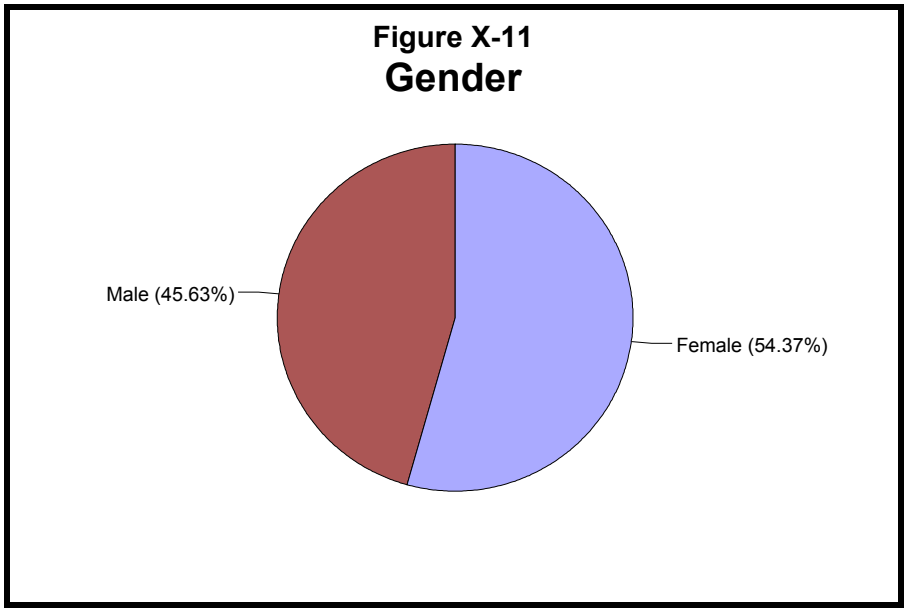
This survey was also not based on a representative sample of the University employee population. The results should be interpreted as information about those who completed the questionnaire. The results should be used with care and should not be considered as representative of all employees. A total of 109 surveys were received and entered into a database for analysis.

Demographic Characteristics

There were a number of questions asked to determine demographic characteristics of the employees. These include characteristics such as age and gender and whether they have a driver's license and vehicle available. The responses are presented in the following.

Age and Gender

The average age of the respondents was 45 years, ranging from 19 to 65 years. Age 50 was the most frequent age of the respondents. Fifty-four (54) percent of the respondents were females and 46 percent were males, as illustrated in Figure X-11.



Vehicle Availability and Licensed Drivers

As stated, the lack of a private vehicle or the inability to drive influence people to use public transportation. Potential choice riders refer to those respondents that have a personal vehicle and a driver's license and may choose to use transit.

Figure X-12 shows the proportion of respondents who are licensed drivers. Licensed drivers made up a higher percentage of respondents, with 94 percent having a license to operate a car.

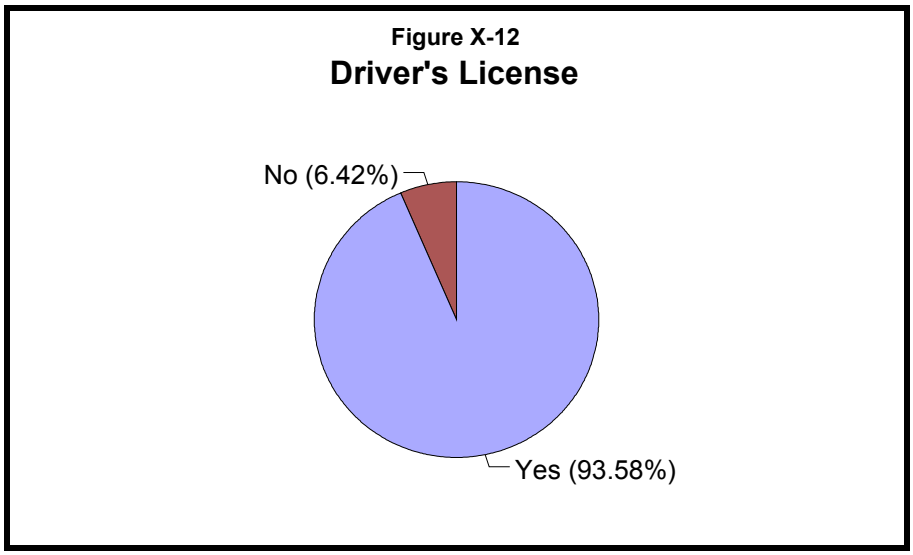
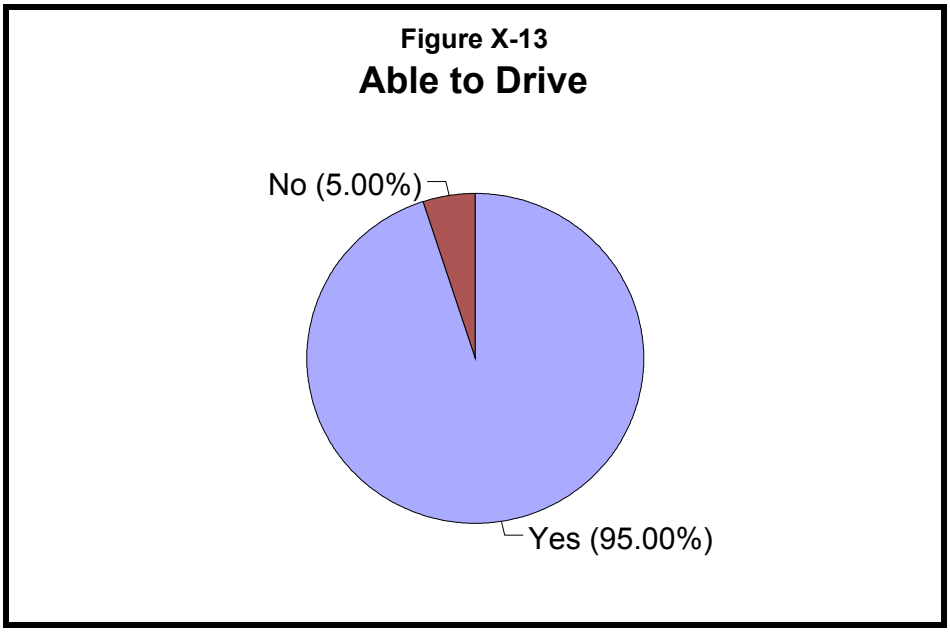


Figure X-13 shows the proportion of respondents who are able to drive. Ninety-five percent of the respondents are able to drive.

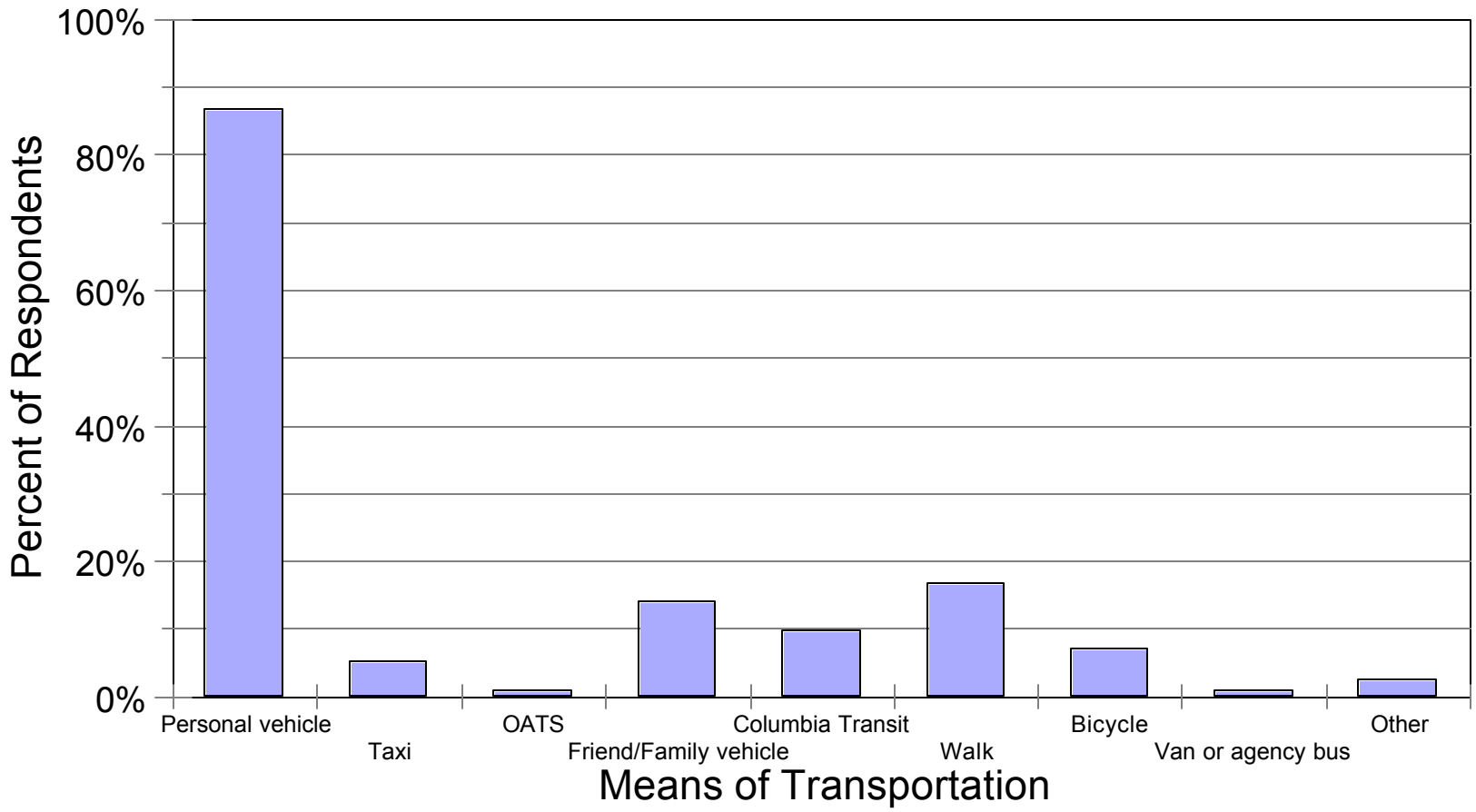


Approximately six percent of the respondents do not have a license and are not able to drive.

Means of Transportation

Again, respondents were asked the means of transportation they used—taxi, OATS, Columbia Transit, van or bus provided by an agency, walking, riding a bike, driving a private auto, using a friend or a family vehicle, or other means. The means of transportation used are shown in Figure X-14. Respondents were allowed to provide multiple responses. Approximately 87 percent responded that they used a private auto, which indicates the number who are potential *choice riders,* followed by 17 percent who said they walk. Fourteen percent reported that they use a friend or family vehicle.

Figure X-14
Means of Transportation



As mentioned, another approach to determine the percentage of transit-dependent patrons was a cross-tabulation on the question regarding whether they had a driver's license and the general means of transportation used was a personal vehicle. Table X-3 shows the comparison. Six percent of respondents did not have a personal vehicle or a driver's license. In addition, another one percent have a license, but do not use a personal vehicle and may be transit-dependent for some of their transportation needs. On the other hand, 88 percent of the respondents are *potential choice riders* as they have a driver's license, they use a personal vehicle as their general mode of transportation, and may choose to use transit.

Table X-3
Number of Respondents who use a Personal Vehicle by Driver's License

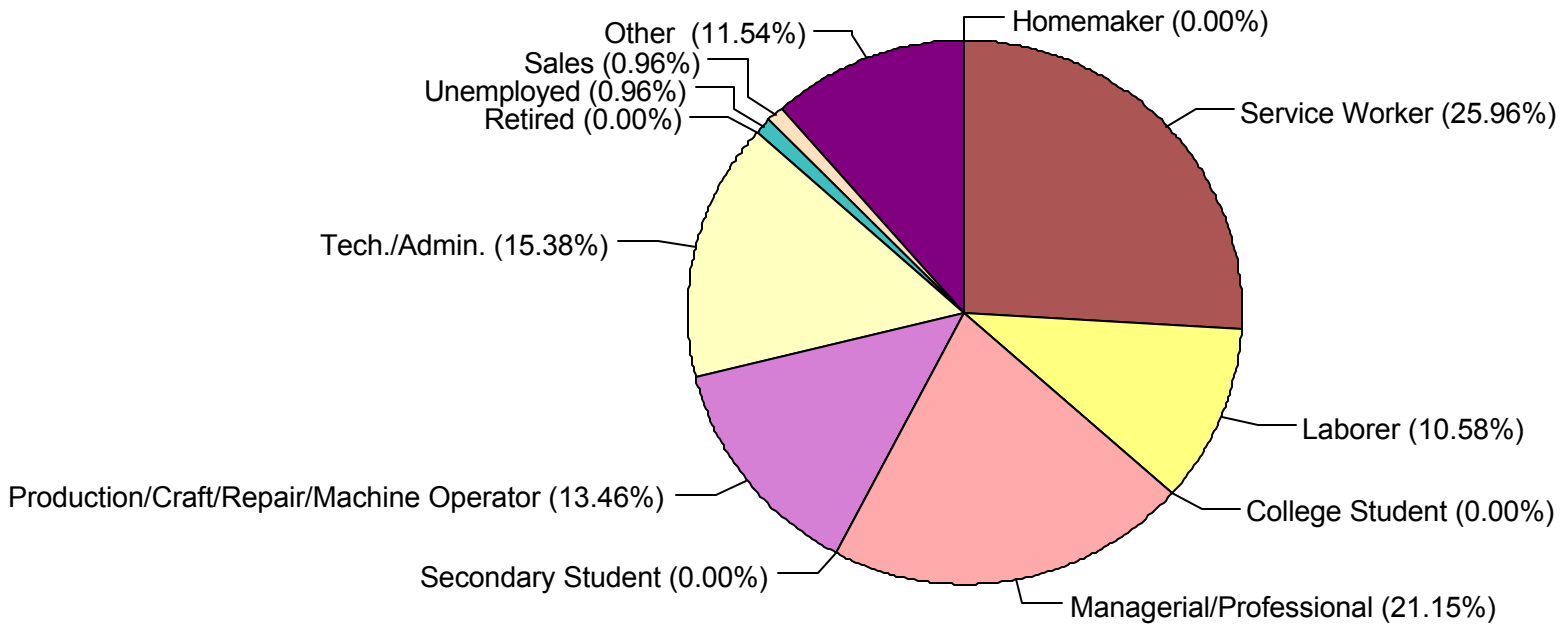
Personal Vehicle	Driver's License	
	Yes	No
Yes	88%	6%
No	1%	6%

Source: LSC University Employee Survey, 2006.

Occupation

The survey asked respondents to indicate their occupation. The results are shown in Figure X-15. Respondents represent a broad spectrum of occupations. The highest responses were from those who indicated "Service Worker" as their occupation, with 26 percent of the responses. The next highest responses were from those who indicated being "Managerial/Professional" (21 percent) followed by occupations such as technical or administration, representing approximately 15 percent of the respondents. One percent of respondents reported being unemployed.

Figure X-15
Occupation



Commute Patterns

The survey asked respondents to indicate the city where they lived and worked, along with their zip codes, so commute patterns might be assessed. As an indication of travel demand patterns, the city of residence was cross-tabulated with the city of employment. Table X-4 shows the commute matrix of where people live and work. Most of the commute patterns (76 responses) are within the City of Columbia while some respondents live in towns such as Centralia, Harrisburg, Ashland, Hallsville, Clark, Boonville, and Sturgeon—all of whom work in Columbia.

Table X-4
Commute Matrix

City of Residence	City of Work	
	Columbia	Rocheport
Ashland	3	
Auxvasse	1	
Boone County	2	
Boonville	2	
Centralia	2	
Clark	2	
Columbia	76	1
County	1	
Fulton	3	
Glasgow	1	
Hallsville	3	
Hartsburg	1	
Keytesville	1	
Mexico	1	
Moberly	1	
New Florence	1	
Paris	1	
Portland	1	
Prairie Home	1	
Rocheport	1	
Sturgeon	2	
Tipton	1	

Source: LSC MSU Employee Survey, 2006.

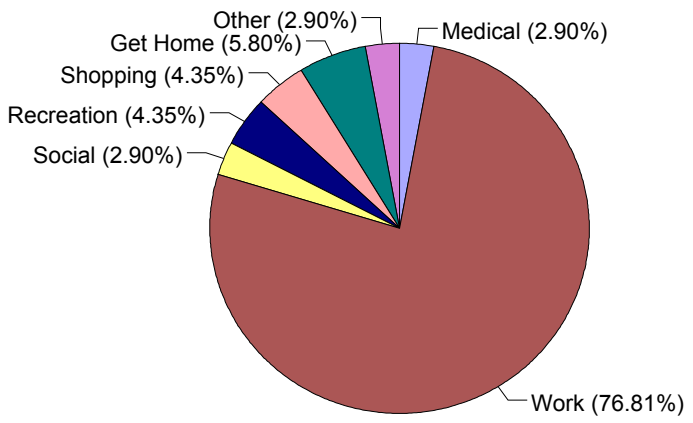
Trip Characteristics

Primary Trip Purpose

Respondents were also asked to indicate the primary purpose for most often riding the bus. Primary trip purposes are shown in Figure X-16. The primary trip purpose (77 percent) was to and from work. Other trip purposes were about even.

Figure X-16

Primary Purpose

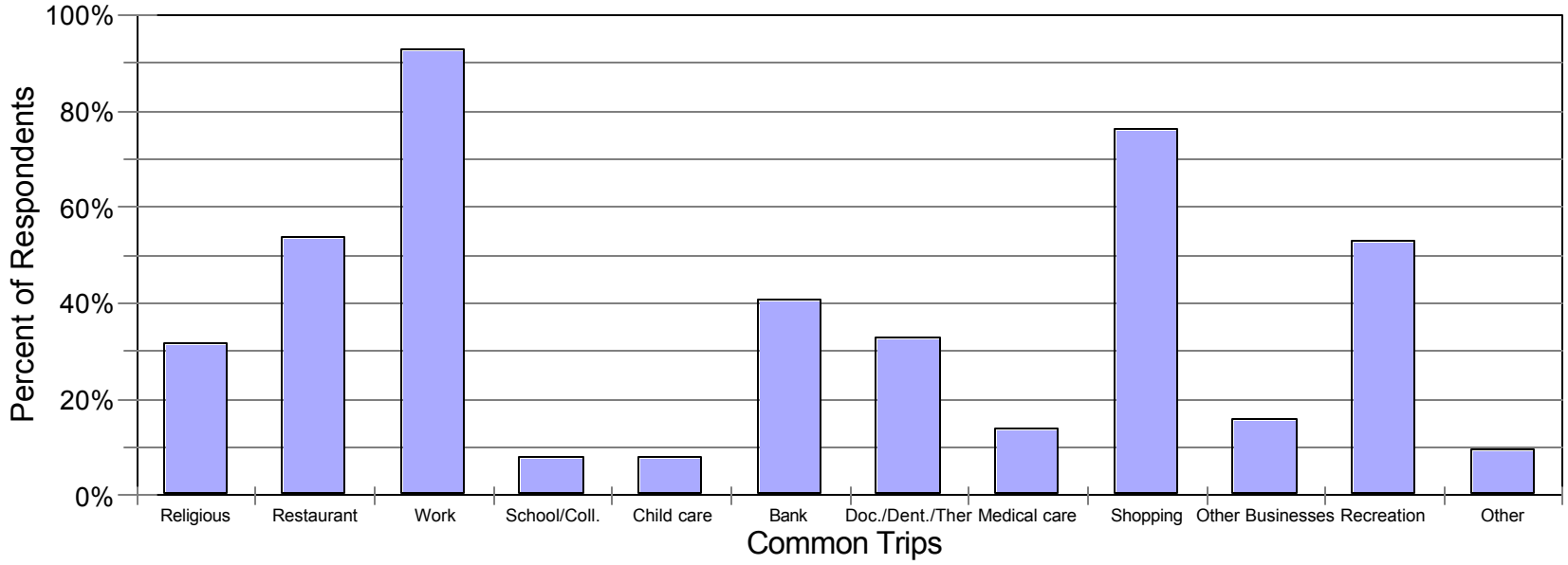


Common Trip Destinations

The survey asked the type of common trip destinations made during an average week. There was a wide range of trip purposes reported, as shown in Figure X-17. Work as a destination was reported by 93 percent of the respondents, followed by trips for shopping (76 percent).

Figure X-17

Common Trip Destinations

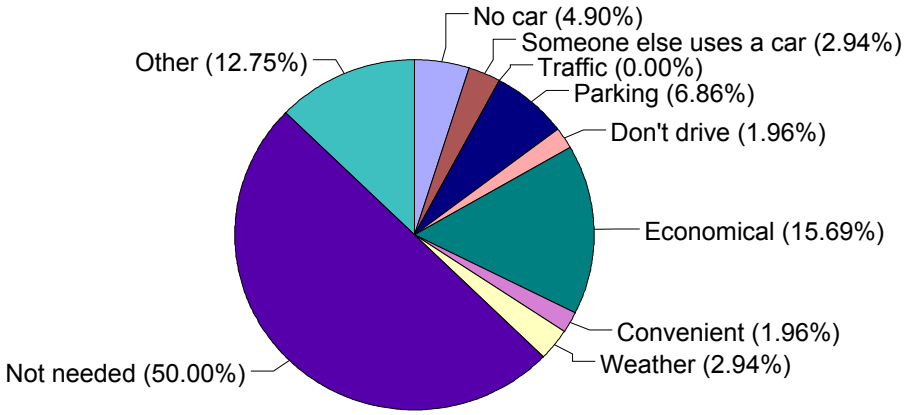


Reason for Public Transportation

The survey asked respondents the most important reason they needed public transportation. Fifty percent of respondents reported that they did not need transportation. The primary reason (16 percent) for requiring public transportation was economical. The major reason of those respondents who selected "Other" was that they needed transportation because of something such as unexpected car breakdowns. Figure X-18 presents this information.

Figure X-18

Reason You Need Transportation



Important Service Characteristics

The survey asked respondents to rate each characteristic that influenced their decision to use public transportation. Again, the middle point of responses would be 2.5, so an average score of 3.0 or higher would indicate service characteristics important in the decision to use public transportation. The responses are shown in Table X-5. Service to and from work was the highest rated service characteristic.

Table X-5
Characteristics That Influence Public Transportation
(ranked in descending order)

Attributes	Average Score
Service from home to work	3.34
Service close to my home	3.14
Clean buses	3.11
Guaranteed ride home	3.10
Service must be flexible in scheduling rides	2.77
Weekend service	2.66
Evening service	2.66
Express service (very few stops)	2.60
Accept different forms of payment	2.44
Service every half-hour	2.42
Service every hour	2.37
Attractive buses	2.33
Service twice a day	2.31
Service from a park-and-ride lot to work	2.25
Employer pays part of the cost	2.14
Service every few hours	1.86

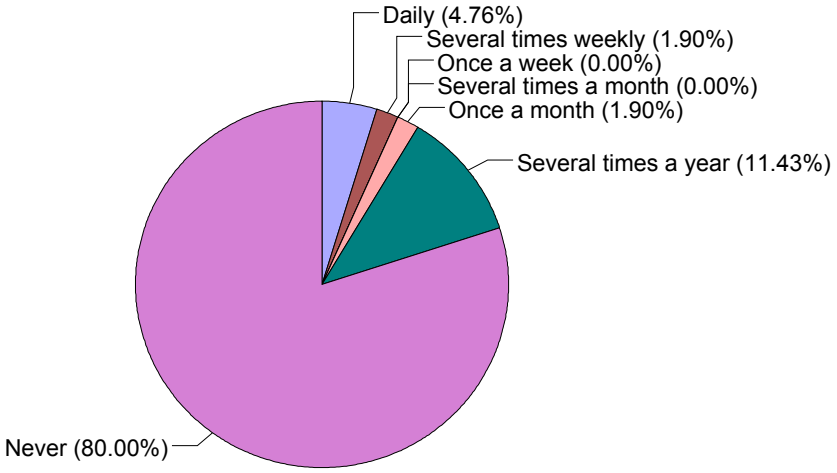
Note: MSU Employee Survey, 2006.

Ridership Frequency

The survey asked respondents how often they used public transportation. Figure X-19 shows the responses. Approximately 80 percent of the respondents reported that they never used public transportation, while six percent use the service daily. Respondents were asked to select the hours that they most needed transportation. Results are shown in Figure X-20. As shown in the figure, the hours of transportation most needed ranged from 6:00 to 8:00 a.m., and from 4:00 to 6:00 p.m., unsurprisingly given the work hours of most employees.

Figure X-19

Ridership Frequency



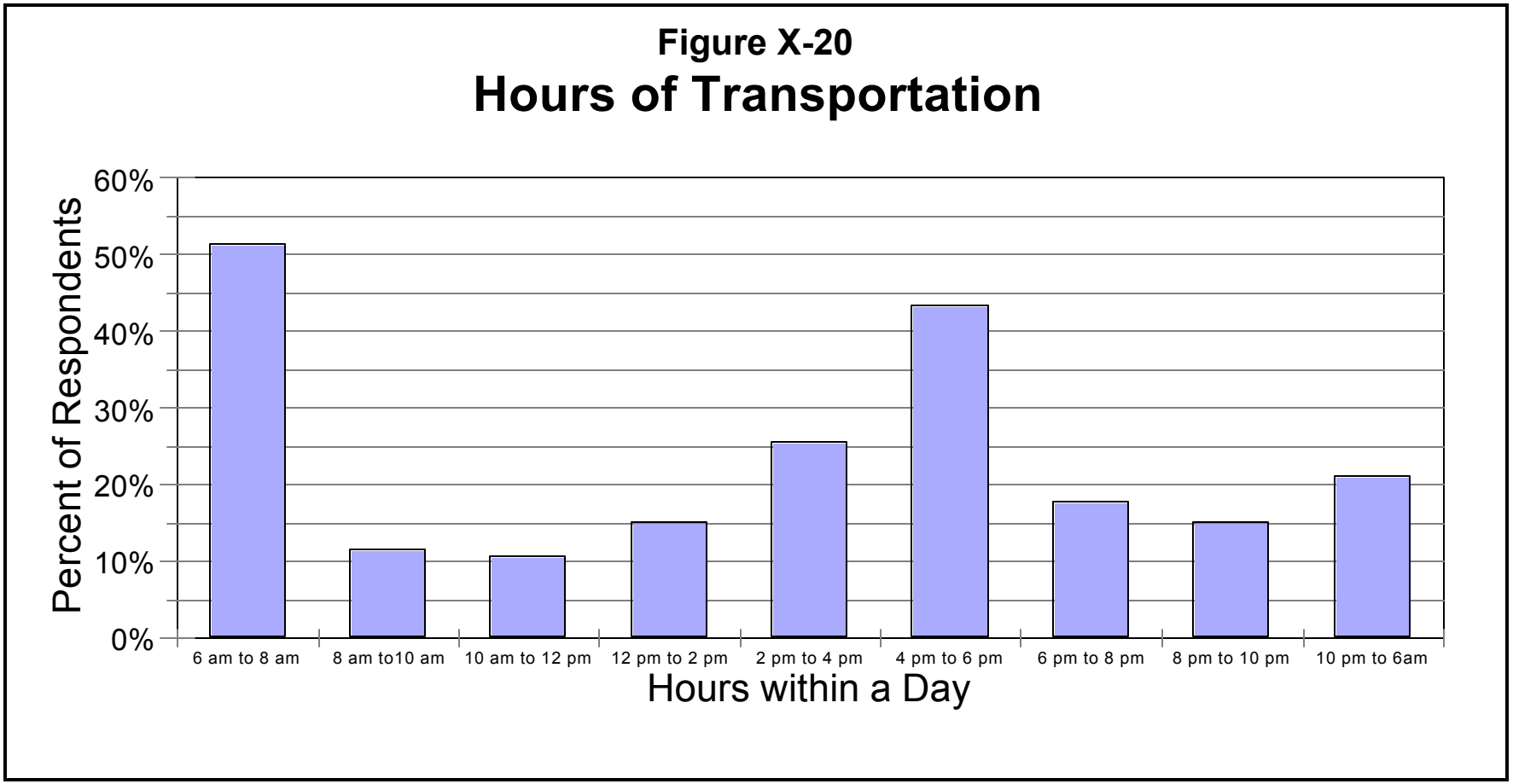
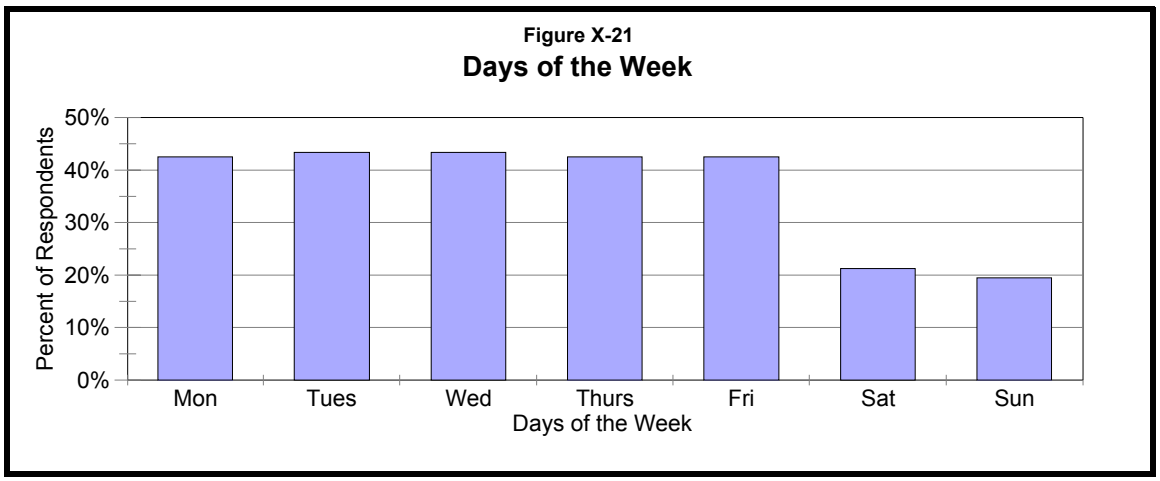


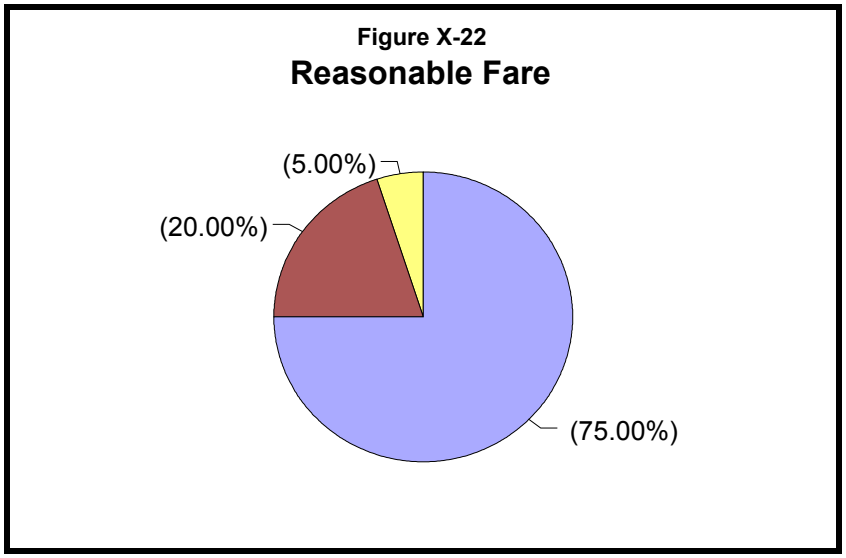
Figure X-20
Hours of Transportation
Percent of Respondents
60%
50%
40%
30%
20%
10%
0%
6 am to 8 am
8 am to10 am
10 am to 12 pm
12 pm to 2 pm
2 pm to 4 pm
4 pm to 6 pm
6 pm to 8 pm
8 pm to 10 pm
10 pm to 6am
Hours within a Day

Passengers were also asked the days of the week that they needed public transportation. The responses were fairly evenly distributed among weekdays. Figure X-21 shows the responses. As shown in the figure, Sundays showed the lowest need for transportation (19 percent) closely followed by Saturdays (21 percent).



Fare Information

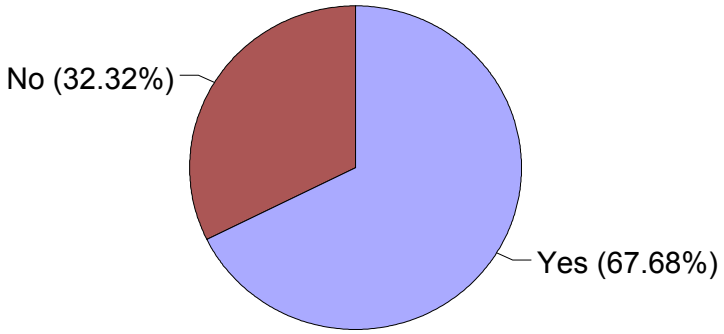
The survey asked respondents to indicate their willingness to ride if a fare was charged and what would be a reasonable fare for a one-way trip. Approximately 61 percent said they would ride if a fare was charged. The responses to the amount of a reasonable fare are shown in Figure X-22. Seventy-five (75) percent of the responses indicated that an amount up to $2.00 was a reasonable fare.



Community Support

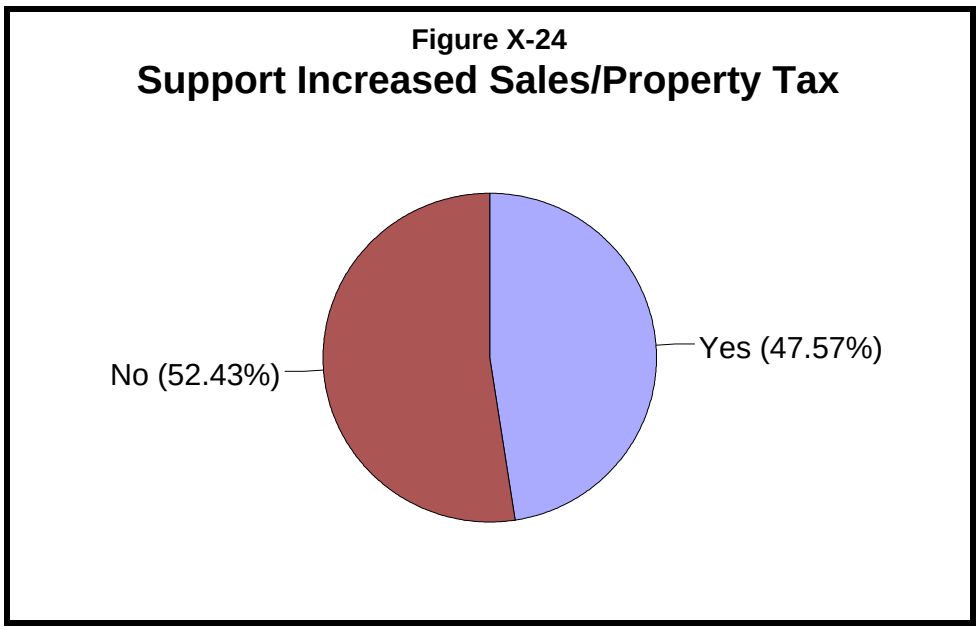
The survey asked respondents if they believed there was community support for public transportation. The responses are shown in Figure X-23. Sixty-eight percent of the respondents believed that there was community support for public transportation.

Figure X-23
Community Support for Transportation



Support for Increase in Sales Tax or Property Tax

The survey asked if respondents were willing to support an increase in sales or property tax for a coordinated public transportation system. The results are shown in Figure X-24. Forty-eight percent of respondents reported that they would support an increase in taxes for public transportation.



Transportation Demand

Identifying transportation needs within a community is an important factor for coordinating and creating an efficient public transportation. The need to travel exists whether or not passenger transportation is available.

Transportation Need Beyond County/City

The survey asked whether transportation was needed beyond the county and, if so, which county. Similarly, the survey asked whether transportation was needed beyond a city and for a list of the cities that needed transportation. Seventy-three percent of the respondents indicated that they did not need transportation beyond the county, while 67 percent reported the same for outside the city.

The list of counties and cities that respondents needed transportation to and from are provided in Appendix J. The most common counties listed were Audrain, Boone, Cole, and Howard. Among the cities listed, the most common were Ashland, Boonville, Columbia, Jefferson City, Kansas City, and St. Louis.

Additional Unmet Needs and Comments

Respondents were given the opportunity to include comments on additional unmet transportation needs. The actual responses to the unmet needs and comments are included in Appendix K. The major comments relate to:

- Frequency of service inhibits use.
- Lack of signs and information on system.
- Lack of local tax funding.
- Lack of community support for public transportation.
- Missed runs cause patrons to be late.
- The need for increased pedestrian paths/walkways, particularly providing access to bus stops.
- More convenient and safe.

Chapter XI

CHAPTER XI
Agency Client Survey Results

INTRODUCTION

This chapter provides the analysis of data collected through surveys from various social service agency clients within Boone County. Surveys were distributed to social service agencies who then distributed surveys to their clients. The questionnaire was provided in English and is provided in Appendix L. A total of 35 identified agencies responded—with a total of 1,021 responses from their clients. Information is provided about demographics, trip characteristics, travel patterns, needs, and service characteristics that influence social service agency clients to use public transportation. Survey data in the planning and coordination process help to gauge the effectiveness of the current system and identify how the public perceives the system. Responses from the usable questionnaires were entered into a database, and an analysis was performed in a spreadsheet program. The responses are summarized in the following sections.

This survey was administered by the various agencies. The respondents do not make up a representative sample of all agency clients. However, the responses do reflect the input of many clients and may be used to reflect the transportation needs of those clients. The results should not be used to represent all agency clients.

DEMOGRAPHIC CHARACTERISTICS

There were a number of questions asked to determine demographic characteristics of agency clients. The surveys received from the various agencies are shown in Table XI-1. Please note that some respondents did not identify the agency or organization they belonged to and thus were listed under “unidentified agencies.”

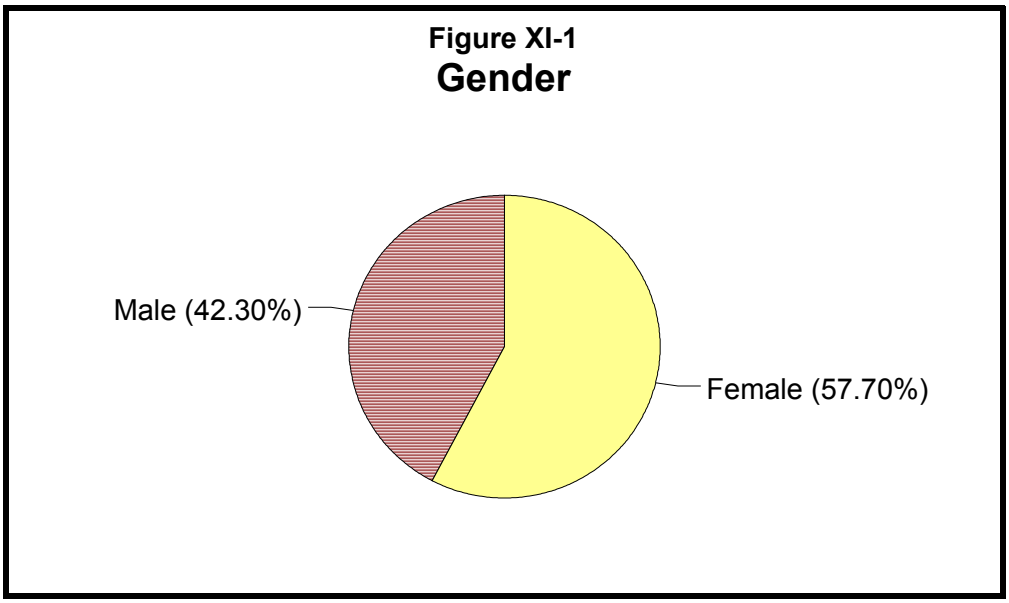
Table XI-1
Number of Respondents by Agency

Name of Social Service Agency	No. of Responses	Percent of Responses
Boone County Family Resources (BCFR)	125	12%
Phoenix Program	89	9%
Green Mountain Clinic	74	7%
Meals on Wheels	69	7%
Central Missouri Area Agency on Aging (CMAAA)	56	5%
Family Health Center	51	5%
Family Support Division (FSD)	49	5%
Reality House	47	5%
McCambridge Center Family Program	39	4%
Harbor House	34	3%
Stork's Nest	23	2%
Voluntary Action Center (VAC)	23	2%
Missouri Probation and Parole	22	2%
Human Development Corporation (CHCHDC)	20	2%
Job Point Central - Wilkes Center	19	2%
Medicaid D Seminar/ Signup	16	2%
Home Care of Mid-Missouri	15	1%
Columbia Senior Center	15	1%
Flu Shot Clinic (Health Department)	14	1%
Flu Shot Clinic (Healthcare Connection)	11	1%
Centralia Senior Center	11	1%
Help at Home, Inc.	10	1%
Ashland Senior Center	10	1%
Boone County Public Administrator	10	1%
Ashland Health Care	9	1%
Division Workforce Development (DWD)	9	1%
Oak Towers	8	1%
Columbia Housing Authority (CHA)	7	1%
Central Missouri Food Bank	6	1%
Brain Injury Support Group	5	<1%
Alzheimers Association	5	<1%
Comprehensive Human Services (CHS) - The Shelter	3	<1%
Healthcare Connection	3	<1%
Boone Hospital Center	2	<1%
Columbia Health Department	1	<1%
Unidentified Agencies**	112	11%
Total	**1,022**	

***Note: Clients that did not identify with a specific agency or organization were listed under the category "Unidentified Agencies."*

Age and Gender

The average age of the respondents was 48 years, ranging from 13 to 96 years. Age 27 was the most frequent age of the respondents. Fifty-eight (58) percent of the respondents were females and 42 percent were males, as illustrated in Figure XI-1.



Vehicle Availability and Licensed Driver

Lack of a private vehicle or the inability to drive influence people to use public transportation. This comparison provides an indication of the number of *potential choice riders* compared to those who are *transit-dependent.* Potential choice riders refer to those respondents that have a personal vehicle and a driver's license and may choose to use transit.

Figure XI-2 shows the proportion of respondents who are licensed drivers. Licensed drivers made up a higher percentage of respondents, with 64 percent having a license to operate a car.

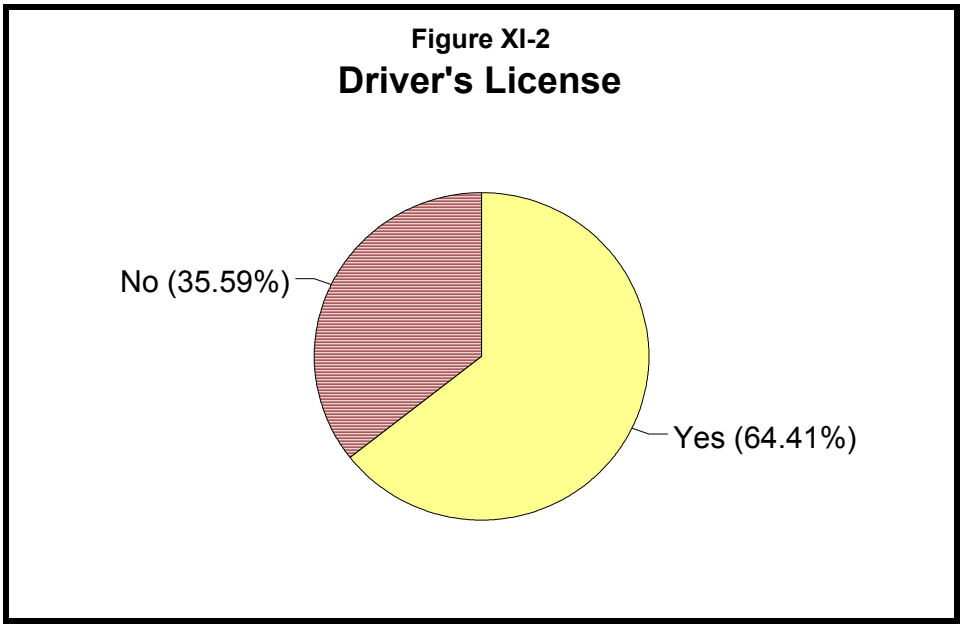
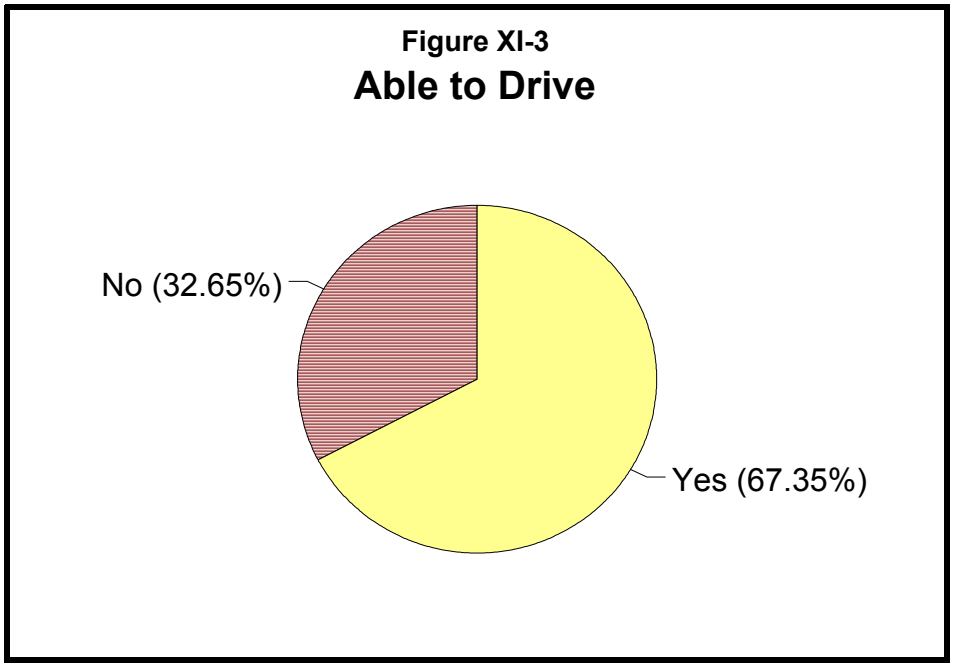


Figure XI-3 shows the proportion of respondents who are able to drive. Sixty-seven (67) percent of the respondents are able to drive.

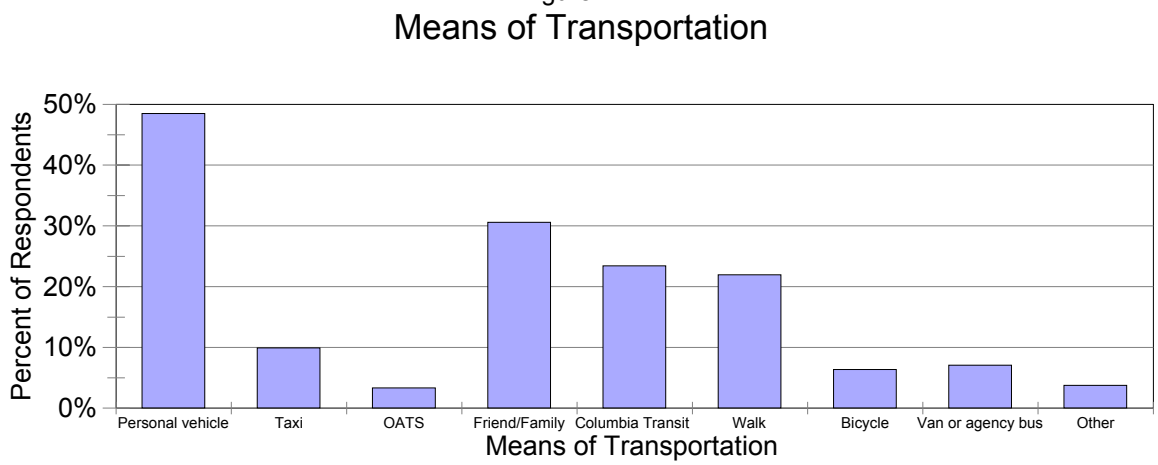


Approximately 27 percent of the respondents do not have a license and are not able to drive.

Means of Transportation

Social service agency clients were asked the means of transportation they used—Taxi, OATS, Columbia Transit, van or bus provided by an agency, walking, riding a bike, driving a private auto, using a friend or a family vehicle, or other means. The means of transportation used are shown in Figure XI-4. Approximately 48 percent of the respondents reported that they used a private auto, which indicates the number of respondents who are potential *choice riders,* followed by 31 percent who said they use a friend or a family vehicle and 23 percent who reported that they use Columbia Transit.

Figure XI-4



Another approach to determine the percentage of those who may be transit-dependent is a cross-tabulation on the question regarding whether they had a driver's license and the general means of transportation used was a personal vehicle. Table XI-2 shows the comparison. Thirty-three percent of respondents (323 respondents) did not have a personal vehicle or a driver's license. Thus, this percentage represents respondents who are *truly transit-dependent.* In addition, another 18 percent have a license, but do not use a personal vehicle and may be transit-dependent for some of their transportation needs. On the other hand, 46 percent of the respondents (453 respondents) are *potential choice riders* as they have a driver's license, they use a personal vehicle as their general mode of transportation, and may choose to use transit.

Table XI-2
Number of Respondents who use a Personal Vehicle by Driver's License

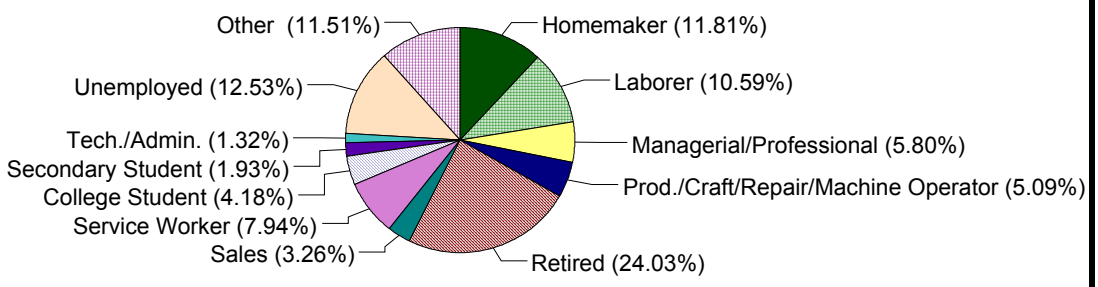
Personal Vehicle	Driver's License	
	Yes	No
Yes	46%	2%
No	18%	33%

Note: LSC Social Service Agency Survey, 2006.

Occupation

The survey asked respondents to indicate their occupation. The results are shown in Figure XI-5. Respondents represent a broad spectrum of occupations. The highest responses were from those who indicated "Retired" as their occupation, with 24 percent of the responses. The next highest responses were from those who indicated being unemployed (13 percent) followed by occupations such as homemaker and "Other"—which did not fall into any of the predefined categories—each representing approximately 12 percent of the respondents. A closer look at respondents who reported that they belonged in the "Other" occupational category wrote in that they were disabled. Many of these should be considered as unemployed.

Figure XI-5
Occupation



COMMUTE PATTERNS

The survey asked respondents to indicate the city in which they lived and worked, along with their zip codes so commute patterns might be assessed. As an indication of travel demand patterns, the city of residence was cross-tabulated with the city of employment. Table XI-3 shows the commute matrix of where people live and work. Most of the commute patterns are within the City of Columbia (314 responses) with a few respondents who live in Hallsville and work in Columbia (6 responses).

Appendix Y

Agency Client Survey Results

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Table XI-3
Commute Matrix

	City of Work																
City of Residence	**Ashland**	**Boonville**	**Brookfield**	**Cairo**	**Centralia**	**Clark**	**Columbia**	**Fulton**	**Hermann**	**Jefferson**	**Maberly**	**Madison**	**Moberly**	**Mt. Grove**	**Prathersville**	**Unionville**	**Whiteman AFB**
Adrian																	
Ashland	2						3										
Atlanta, MO																	
Auxvasse																	
Boonville		3					2										
Cairo				1													
Centralia					1		2										
Clark						1											
Columbia	1		1				314	1		4	1	1	3		1		
Crystal City																	
Elsberry																	
Fayette		1					1										
Franklin																	
Freeburg																	
Fulton							1	1									
Hallsville							6										
Harrisburg							2										
Hartsburg							1										
Hermann									1								
Higginsville							1										
Holts Summit																	
Jefferson City							3			1							
Kansas City																	
Knob Noster																	1
Marshall							1										
Meta																	
Mexico																	
Moberly							1						1				
Mt. Grove														1			
New Bloomfield																	
New Franklin		1															
Plato																	
Pollock																1	
Prairie Home																	
Rocheport																	
Rural Hallsville							2										
Shelbina																	
St. Louis							1										
Sturgeon																	
Sturgess																	
Windsor																	

Note: LSC Social Service Agency Client Survey, 2006

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TRIP CHARACTERISTICS

Trip Purpose of Using Transit

Respondents were also asked to indicate the most frequent trip purpose for riding transit. Trip purposes are shown in Table XI-4. The most common trip purpose was medical (reported by 34 percent of the respondents). The second most common purpose was to and from work (32 percent) followed by shopping (29 percent).

Table XI-4
Trip Purpose of Using Transit

Trip Purpose of Using Transit	Responses	Percent of Respondents
Medical	349	34%
Work	323	32%
Social	160	16%
Recreation	152	15%
Shopping	297	29%
Get Home	0	0%
Other	94	9%

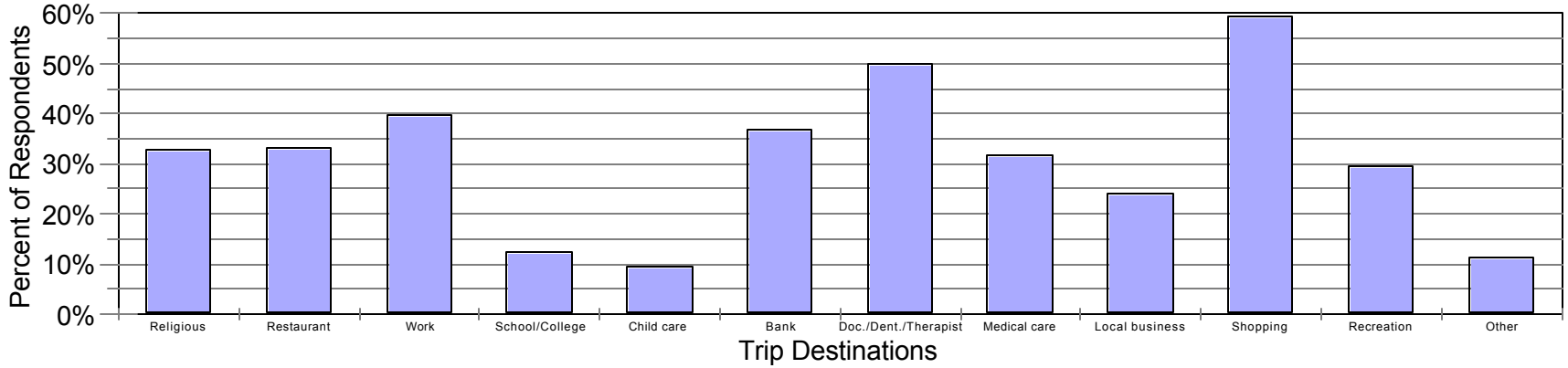
Source: LSC Social Service Agency Client Survey, 2006.

Common Trip Destinations

The survey asked the type of common trip destinations made during an average week. There was a wide range of trip purposes reported as shown in Figure XI-6. "Shopping trips" was reported by 60 percent of the respondents followed by trips taken to a doctor, dentist or therapist (50 percent). Work trips accounted for 40 percent of the total responses.

Figure XI-6

Common Trip Destinations

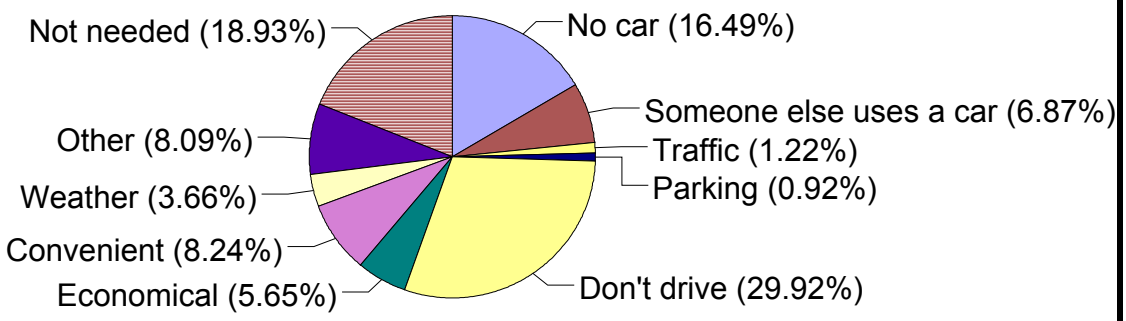


Reason for Public Transportation

The survey asked respondents the most important reason they needed public transportation. The top reasons for requiring public transportation were respondents who did not drive (30 percent), did not need transportation (19 percent), and that did not have a car (16 percent). Figure XI-7 shows the information. Twenty percent of responses (129 responses) were possible choice riders who chose public transportation because of convenience, economical reasons, traffic, weather, or parking reasons. On the other hand, 53 percent of the respondents (349 responses) may be possible transit-dependent riders who use transit because of reasons such as the family does not own a car, someone else uses the car, or they do not drive.

Figure XI-7

Reason You Need Public Transportation



Important Service Characteristics

The survey asked respondents to rate each characteristic that influenced their decision to use public transportation. The categories separated into four rankings —not important, desirable, important, and very important. The average response was then calculated for each attribute. The middle point of responses would be 2.5, so an average score of 3.0 or higher would indicate service characteristics important in the decision to use public transportation. The responses are shown in Table XI-5.

All characteristics were scored positively and were ranked higher than average, except service from a park-and-ride lot to work, employers pay part of the cost, and service every few hours. Guaranteed ride home and service close to home were ranked the highest by respondents followed by flexibility in scheduling trips, clean buses, and service from home to work. Passengers were asked to list other characteristics that they thought would be important in their decision to use public transportation. These include handicap accessibility and assistance, nice drivers, safety using transportation, and weather-friendly bus stops.

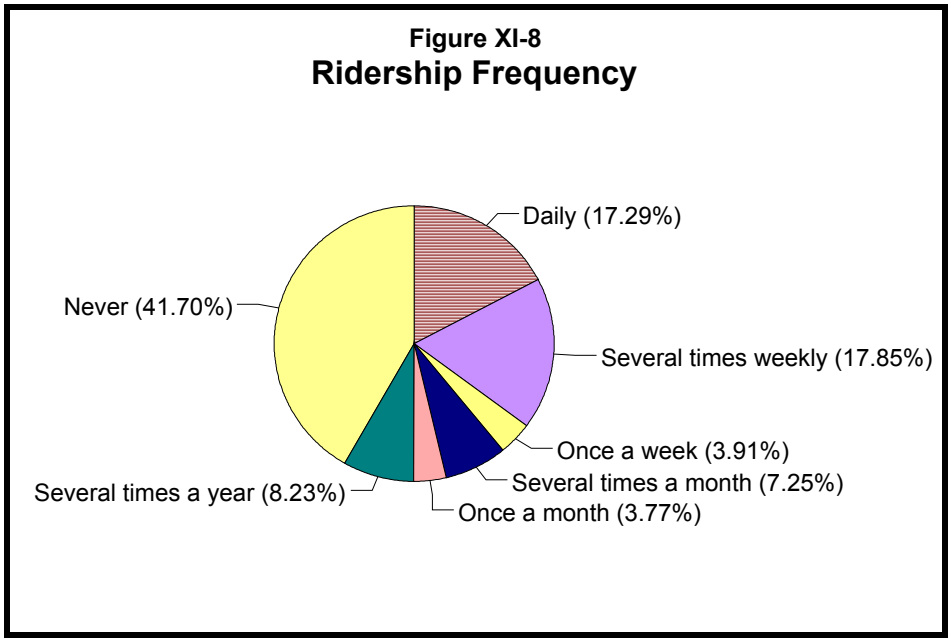
Table XI-5
Characteristics That Influence Public Transportation
(ranked in descending order)

Attributes	Average Score
Guaranteed ride home	3.4
Service close to home	3.3
Flexibility in scheduling trips	3.2
Clean buses	3.1
Service from home to work	3.0
Weekend service	3.0
Evening service	2.9
Service twice a day	2.7
Service every half-hour	2.7
Service every hour	2.7
Accept different forms of payment	2.6
Attractive buses	2.5
Express service	2.5
Service every few hours	2.4
Employer pays part of the cost	2.3
Service from park-and-ride lot to work	2.1

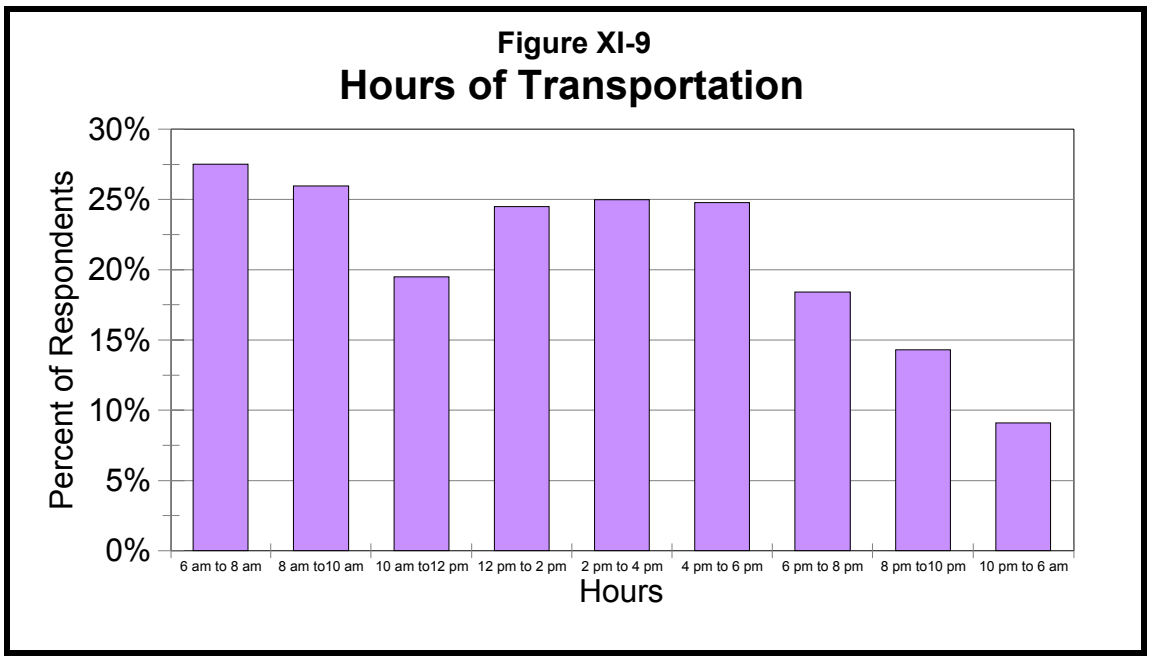
Source: LSC Social Service Agency Client Survey, 2006.

Ridership Frequency

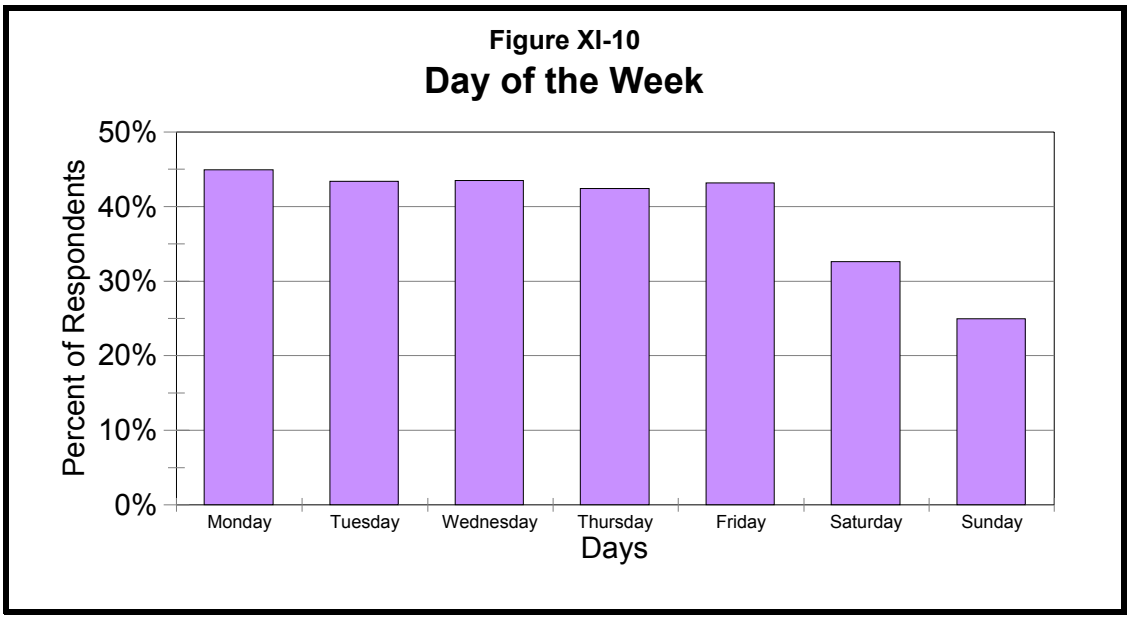
The survey asked respondents how often they used public transportation. Figure XI-8 shows the responses. Approximately 42 percent of the respondents (299 responses) reported that they never used public transportation, while 18 percent (128 responses) use the service several times weekly and 17 percent (124 responses) use the service daily.



Respondents were asked to select the hours that they most needed transportation. The responses were fairly split among the various hours listed. Results are shown in Figure XI-9. As shown in the figure, the hours of transportation most needed ranged from 6:00 to 10:00 a.m., slightly decreased from 10:00 a.m to 12 noon, and then increased from 12 noon to 6:00 p.m. The need for transportation after 6:00 p.m. onward to 6:00 a.m. decreases from 10 percent to 5 percent.

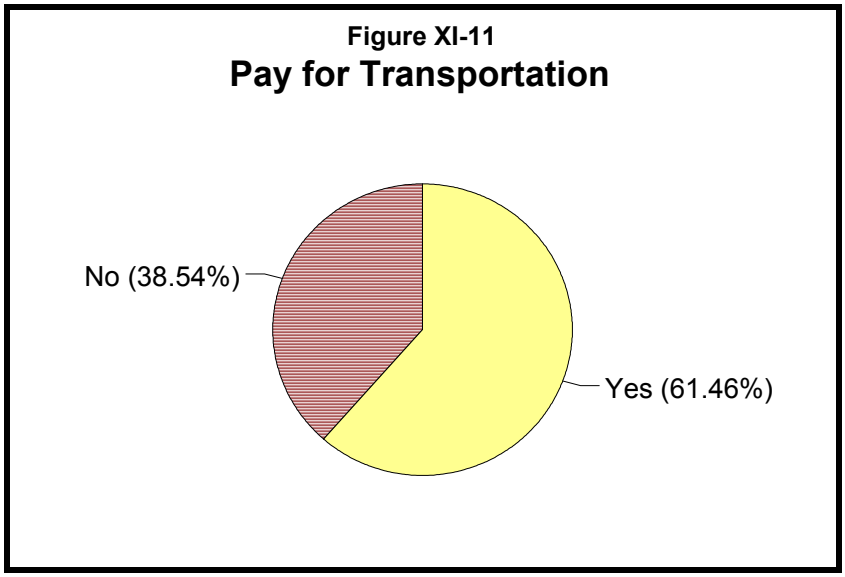


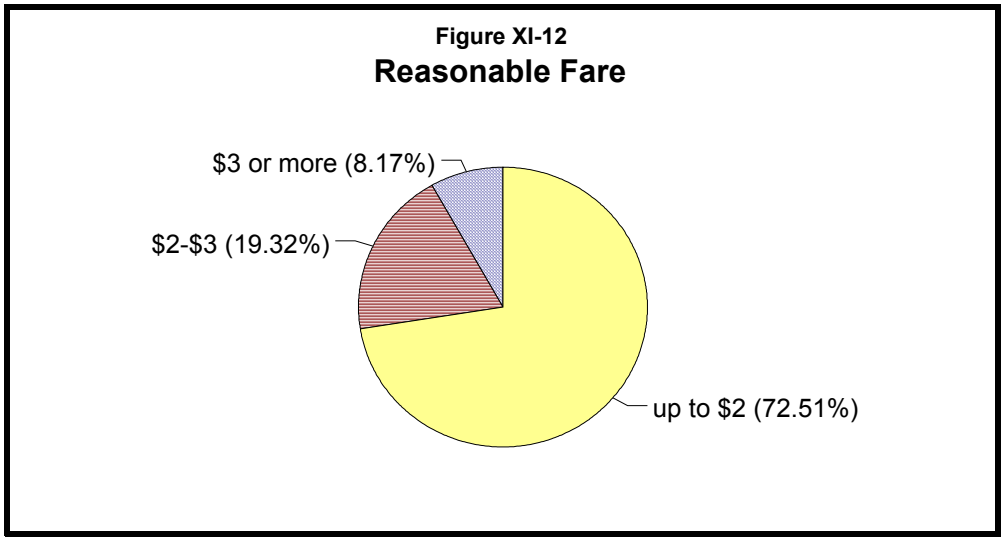
Respondents were also asked the days of the week that they needed public transportation. The responses were fairly evenly distributed among the various days of the week listed. Figure XI-10 shows the responses. As shown in the figure, Sundays showed the lowest need for transportation (25 percent) followed by Saturdays (33 percent).



FARE INFORMATION

The survey asked respondents to indicate their willingness to ride if a fare was charged and what would be a reasonable fare for a one-way trip. Figure XI-11 shows the willingness of passengers to ride if a fare was charged. Approximately 61 percent said they would ride if a fare was charged. The responses to the amount of a reasonable fare are shown in Figure XI-12. Seventy-three (73) percent of the responses indicated that an amount up to $2 was a reasonable fare.





TRANSPORTATION DEMAND

Identifying transportation needs within a community is an important factor for coordinating and creating an efficient public transportation. The need to travel exists whether or not passenger transportation is available. This information was identified based on the surveys received from the clients of the various social service agencies.

Use Public Transportation If Available

Respondents were asked whether they would use public transportation more often if it was widely available. Respondents were also asked to give an explanation to their response. Results are shown in Figure XI-13. Sixty-seven (67) percent of respondents indicated that they would use public transportation if it was more widely available. The most common explanation of the respondents who said they would use public transportation were:

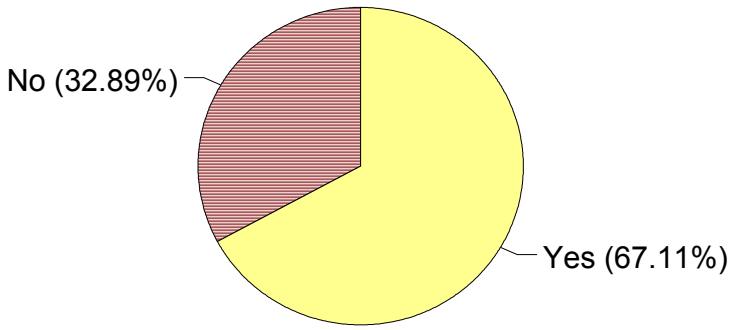
- The bus currently did not serve them.
- The existing service needed to go more places.
- Frequent service.
- Less time on bus to reach destinations.
- Extended service and Sunday service.

Other reasons that would make them use public transportation were the high gas prices and reducing dependency on family or friends for rides.

The people who reported that they would not use public transportation were mostly because of age or medical-related problems, disabled, difficulty in using transit with kids, or they had their own vehicle or transportation to get around.

Figure XI-13

Use Public Transportation If Available



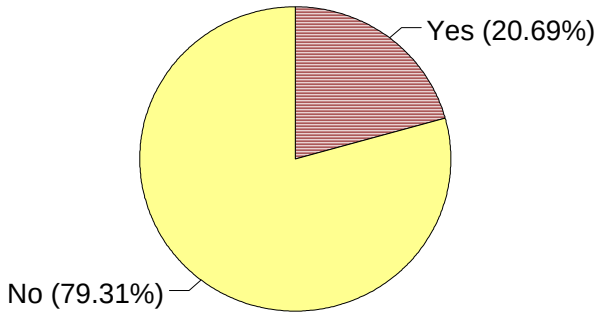
Lost a Job Due to Transportation

Respondents were asked whether in the last two years they lost a job or had problems finding a job due to lack of transportation. Responses are shown in Figure XI-14. Twenty-one percent of the respondents said that they had lost a job due to lack of transportation. The written comments from those individuals were reviewed, and the most common comments were:

- Car breakdowns.
- Difficulty coordinating bus hours with work hours.
- No late night service.
- No weekend service.
- Did not own a car.
- Long wait times.
- Dependency on other people for rides.
- No driver's license.
- Unable to afford a car.
- Some employers did not hire people without transportation.

Figure XI-14

Lost a Job Due to Transportation



Transportation Need Beyond County/City

The survey asked whether transportation was needed beyond Boone County, and if so, which county. Similarly, the survey asked whether transportation was needed beyond a city and for a list of the cities that needed transportation. Figures XI-15 and XI-16 show the responses of whether transportation is needed beyond the county and city, respectively. The list of counties and cities that respondents indi-

cated needed transportation to and from is provided in Appendix M. The most common counties listed were Cole, Callaway, and Cooper (adjoining counties), and St. Louis County. Among the cities listed, the most common were Boonville, Fulton, Jefferson City, St. Louis, Kansas City, and Columbia.

Figure XI-15
Transportation Needed Beyond County

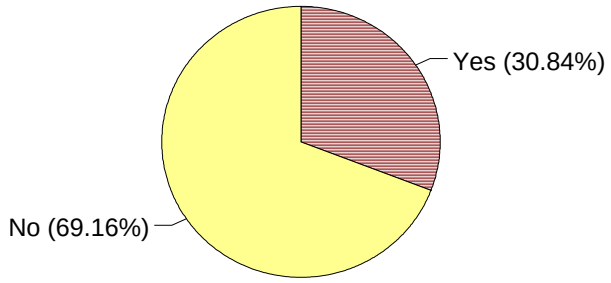
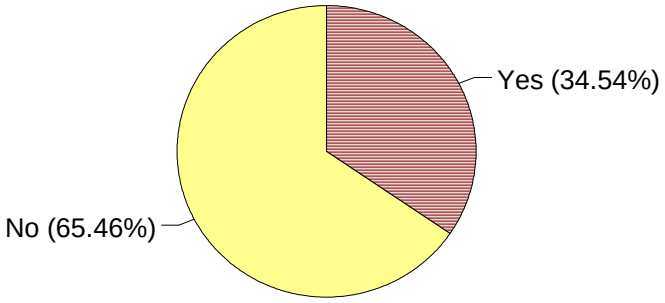


Figure XI-16
Transportation Needed Beyond City



Additional Unmet Needs and Comments

Respondents were given the opportunity to include additional unmet transportation needs and comments. The actual responses to the unmet needs and comments are included in Appendix N. The major comments relate to Sunday and

evening service, adding sidewalks and bike paths, handicap accessibility, transportation out-of- town, transportation connecting Columbia to Jefferson City and St. Louis, emergency transportation, transportation for elderly, medical and health-related transportation, transportation to jobs, for shopping, more service outside city limits, affordable and timely transportation, transportation when unable to drive a car, and transportation for special needs.

Chapter XII

CHAPTER XII

Community Survey Results

INTRODUCTION

This chapter provides the analysis of data collected through a survey of residents in Boone County. Surveys were distributed by communities and agencies, both in paper and electronic formats. The questionnaire was available to anyone on the Internet as part of the project website. The questionnaire was provided in English and is included in Appendix O. A total of 59 identified agencies responded—with a total of 1,520 responses. Information is provided about demographics, trip characteristics, travel patterns, needs, and service characteristics that influence the community at large to use public transportation. These survey efforts from the community, along with surveys from social service agency clients, were targeted to represent different population segments in identifying the needs of the community. Responses from the usable questionnaires were entered into a database and an analysis was performed in a spreadsheet program. The responses are summarized in the following sections.

This survey was not based on a representative sample of the Boone County population. The results should be interpreted as information about those who completed the questionnaire. The results should be used with care and should not be considered as representative of all residents of Boone County.

DEMOGRAPHIC CHARACTERISTICS

There were a number of questions asked to determine demographic characteristics of the community. The surveys received from the various agencies are shown in Table XII-1. Please note that some respondents did not identify the agency or organization they belonged to and thus were listed under “unidentified agencies.”

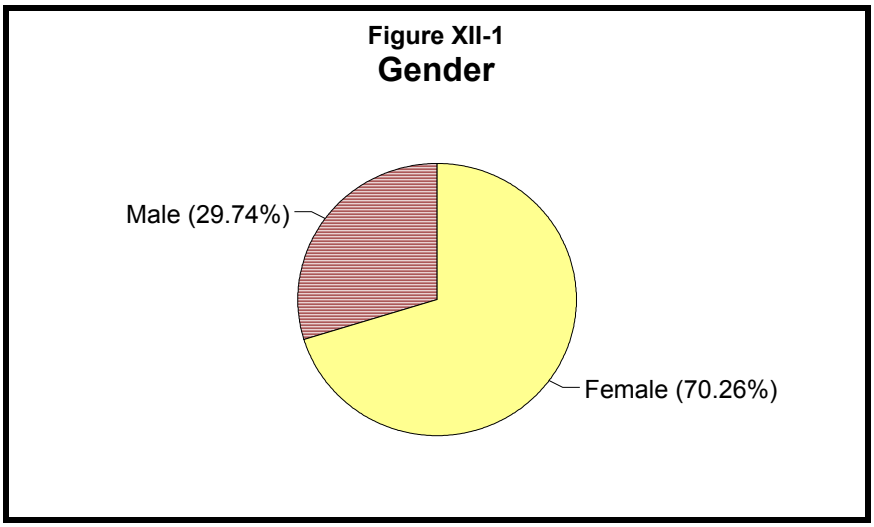
Table XII-1
Number of Respondents by Agency

Name of the Agency	No. of Responses	Percent of Responses
Boone Hospital	328	22%
Boone Hospital Lifeline	234	15%
MBS Textbook Exchange, Inc.	197	13%
Centralia	91	6%
Centralia School District	73	5%
Flu Shot Clinic (Health Department)	72	5%
Harrisburg Elementary Schools	60	4%
University Behavioral Health (UBH)	54	4%
St. Luke United Methodist Church	51	3%
Columbia Senior Center	39	3%
University Hospital Staff	33	2%
Columbia Schools	30	2%
ParaTransit	26	2%
Master Gardening Class	21	1%
Paquin Towers	21	1%
Loaves and Fishes Program	19	1%
Harrisburg Community Betterment Association	15	1%
New Horizons	13	1%
Oak Towers	11	1%
OATS Transportation	10	1%
Health Department	10	1%
National Federation of the Blind	9	1%
Moniteau Senior Housing	9	1%
City of Sturgeon	8	1%
Ashland Elementary	4	<1%
Healthcare Connection	3	<1%
Grass Roots Organization (GRO)	1	<1%
Central Missouri Area Agency on Aging (CMAAA)	1	<1%
Unidentified Agencies**	77	5%
Total	**1,520**	

***Note: Respondents who did not identify with a specific agency or organization were listed under the category "Unidentified Agencies."*

Age and Gender

The average age of the respondents was 51 years, ranging from 7 to 99 years. Age 39 was the most frequent age of the respondents. Figure XII-1 illustrates the gender of the respondents. Seventy (70) percent of the respondents were females and 30 percent were males, as illustrated in Figure XII-1.



Vehicle Availability and Licensed Drivers

Lack of a private vehicle or the inability to drive influence people to use public transportation. This comparison provides an indication of the number of *potential choice riders* compared to those who are *transit-dependent*. Potential choice riders refer to those respondents that have a personal vehicle and a driver's license and may choose to use transit.

Figure XII-2 shows the proportion of respondents who are licensed drivers. Licensed drivers made up a higher percentage of respondents, with 85 percent having a license to operate a car.

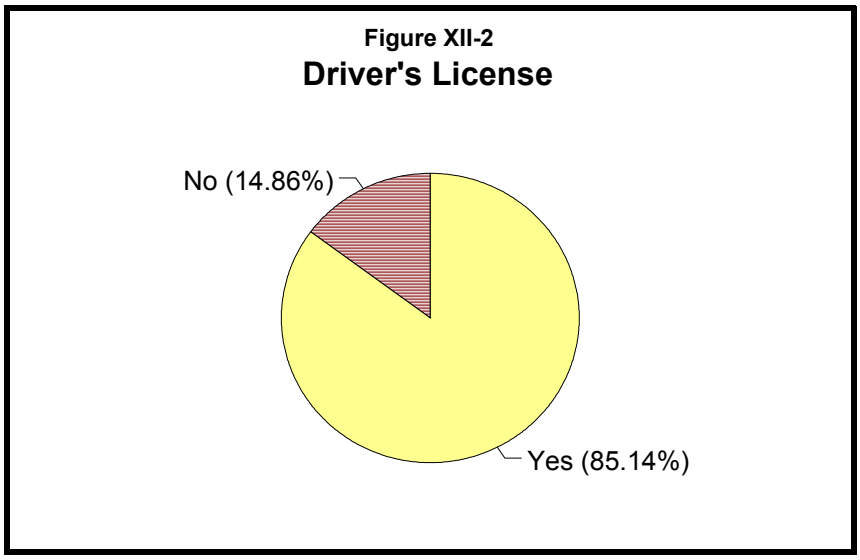
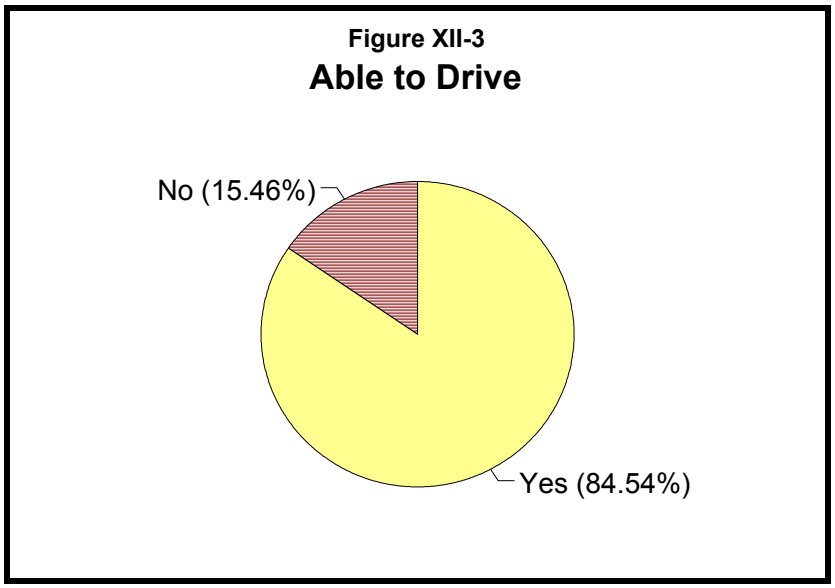


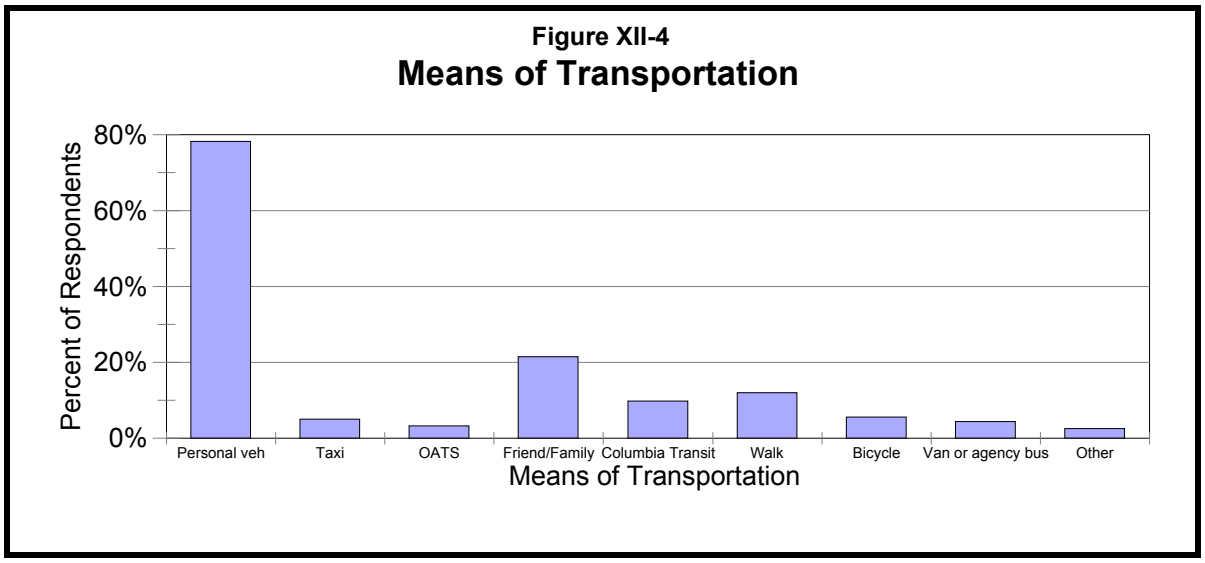
Figure XII-3 shows the proportion of respondents who are able to drive. Eighty-five (85) percent of the respondents are able to drive.

Approximately 12 percent of the respondents do not have a license and are not able to drive.



Means of Transportation

Respondents were asked the means of transportation they used—taxi, OATS, Columbia Transit, van or bus provided by an agency, walking, riding a bike, driving a private auto, using a friend or a family vehicle, or other means. The means of transportation used are shown in Figure XII-4. Approximately 78 percent responded that they used a private auto, which indicates the number who are potential *choice riders,* followed by 22 percent who said they use a friend or a family vehicle. Twelve percent reported that walking was their means of transportation.



Another approach to determine the percentage of transit-dependent patrons was a cross-tabulation on the question regarding whether they had a driver's license and the general means of transportation used was a personal vehicle. Table XII-2 shows the comparison. Fourteen percent of respondents (200 respondents) did not have a personal vehicle or a driver's license. Thus, this percentage represents respondents that are *truly transit-dependent* in Boone County. In addition, another seven percent have a license, but do not use a personal vehicle and may be transit-dependent for some of their transportation needs. On the other hand, 78 percent of the respondents (1,133 responses) are *potential choice riders* as they have a driver's license, they use a personal vehicle as their general mode of transportation, and may choose to use transit.

Table XII-2
Number of Respondents who use a Personal Vehicle by Driver's License

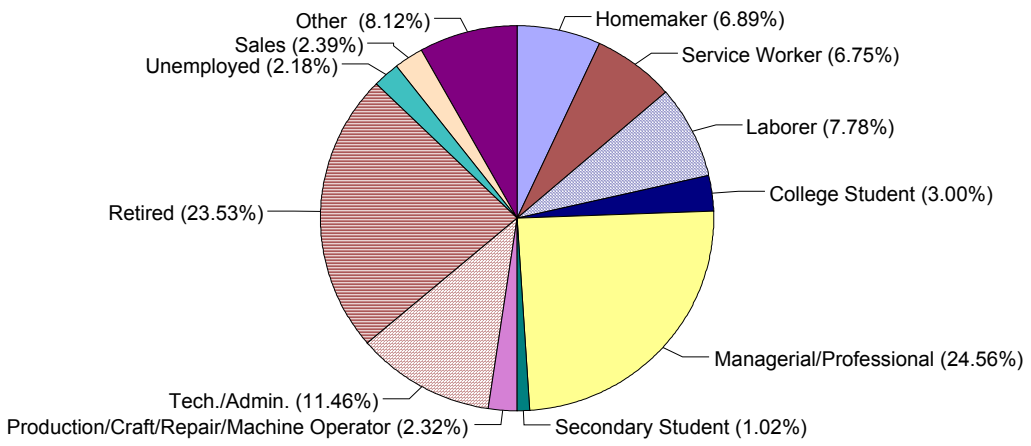
Personal Vehicle	Driver's License	
	Yes	No
Yes	78%	1%
No	7%	14%

Note: LSC Community Survey, 2006.

Occupation

The survey asked respondents to indicate their occupation. The results are shown in Figure XII-5. Respondents represent a broad spectrum of occupations. The highest responses were from those who indicated "Managerial or Professional" as their occupation, with 25 percent of the responses. The next highest responses were from those who indicated being retired (24 percent) followed by occupations such as technical or administration, representing approximately 11 percent of the respondents. Two percent of respondents reported being unemployed.

Figure XII-5
Occupation



Commute Patterns

The survey asked respondents to indicate the city where they lived and worked, along with their zip codes, so commute patterns might be assessed. As an indication of travel demand patterns, the city of residence was cross-tabulated with the city of employment. Table XII-3 shows the commute matrix of where people live and work. Most of the commute patterns (621 responses) are within the City of Columbia while some respondents live in towns such as Centralia (48 responses), Harrisburg (22 responses), Ashland (19 responses), Hallsville (17 responses), Clark (17 responses), Boonville (12 responses), and Sturgeon (12 responses)—all of whom work in Columbia. Intrazonal person-trips within a city or a town were observed

in Centralia (38 person-trips) and Harrisburg (16 person-trips). The only major reverse commute observed was people who live in Columbia and work in Jefferson City (13 responses).

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Table XII-3
Commute Matrix
City of Work

City of Residence	Ashland	Boone	Boonville	Centralia	Columbia	Eldon	Fayette	Fulton	Hallsville	Harrisburg	Jefferson City	Madison	McBaine	Mexico	Moberly	Sturgeon
Ashland	1	1			19						1					
Auxvasse					5											
Belle					1											
Boone County					2					1						
Boonville					12											
Bunceton					2											
California					1											
Centralia			1	38	48				1			1		6	2	2
Clarence																
Clark					17					1					1	1
Clinton																
Columbia	4	2			621			2			13		1			
Crocker																
Eldon						1										
Fayette					3											
Fulton					7						1					
Glasbow							1									
Glasgow					2					1						
Hallsville				1	17				2							
Harrisburg					22					16						
Hartsburg					6											
Holts Summit					2											
Huntsville					1											
Iberia																
Jacksonville																
Jamestown					1						1					
Jefferson					3						1					
Lentner					1											
Martinsburg					1											
Mexico					4											
Midway					1											
Millersburg					1											
Moberly					5										1	
Montgomery City					1									1		
New Bloomfield					1											
New Franklin					4											
Paris					1											
Pilot Grove					2											
Prathersville					2											
Rocheport					8											
Rolla																
Springfield																
Stover					1											
Sturgeon				3	12									1	1	1
Tebbetts					1											
Thompson				1												
Tipton																
Williamsburg																

Note: LSC Community Survey, 2006.

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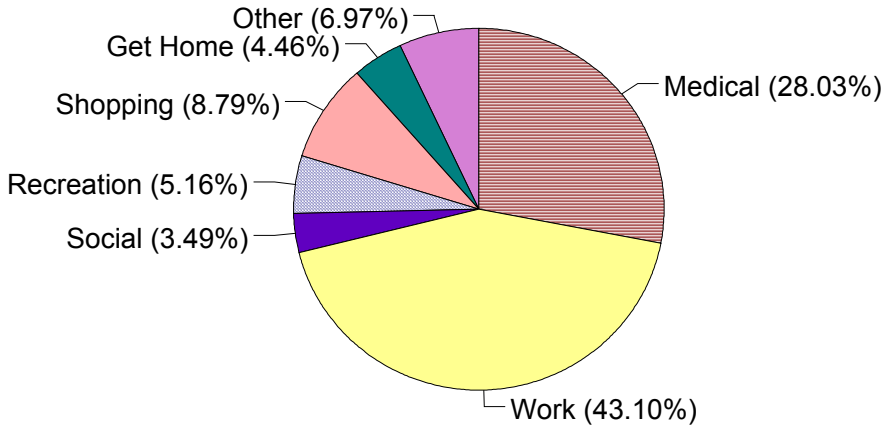
TRIP CHARACTERISTICS

Primary Trip Purpose

Respondents were also asked to indicate the primary purpose for most often riding the bus. Primary trip purposes are shown in Figure XII-6. The primary trip purpose (43 percent) was to and from work. The second most common purpose (28 percent) was for medical purposes.

Figure XII-6

Primary Purpose

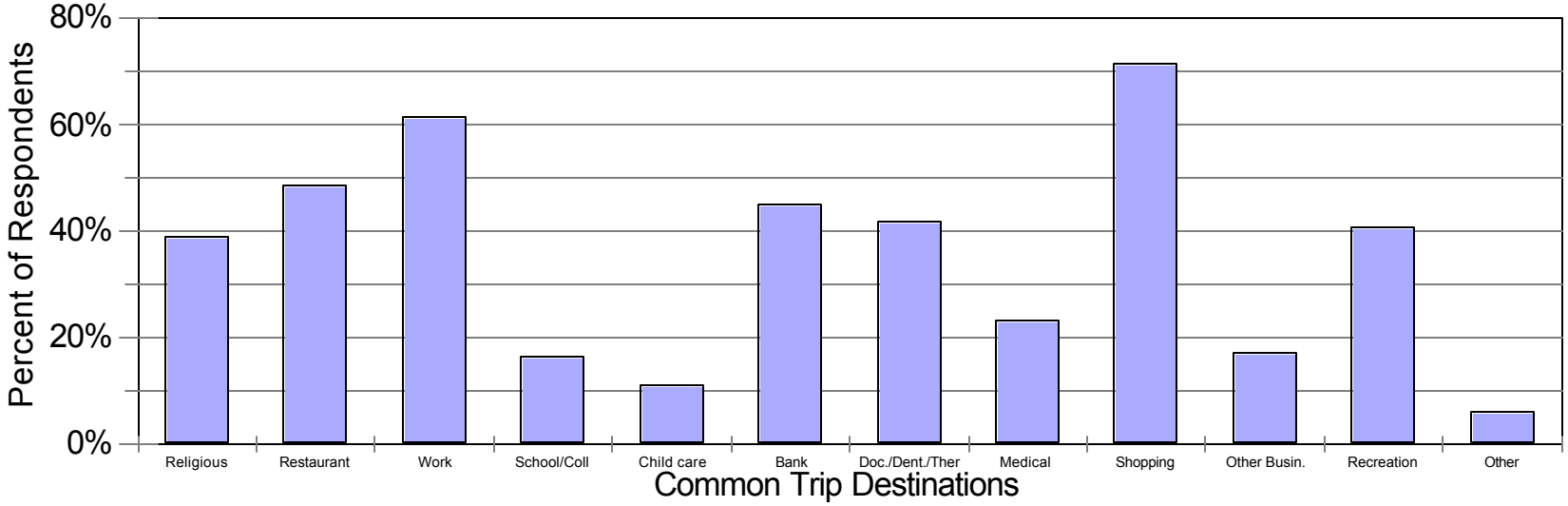


Common Trip Destinations

The survey asked the type of common trip destinations made during an average week. There was a wide range of trip purposes reported, as shown in Figure XII-7. "Shopping trips" was reported by 71 percent of the respondents, followed by trips taken to and from work (61 percent) and trips to a restaurant (49 percent).This section accounts for trips made most commonly by respondents during a week and thus had a wider range of trip purposes in comparison to the previous section which reports primary trip purposes of using transit.

Figure XII-7

Common Trip Destinations

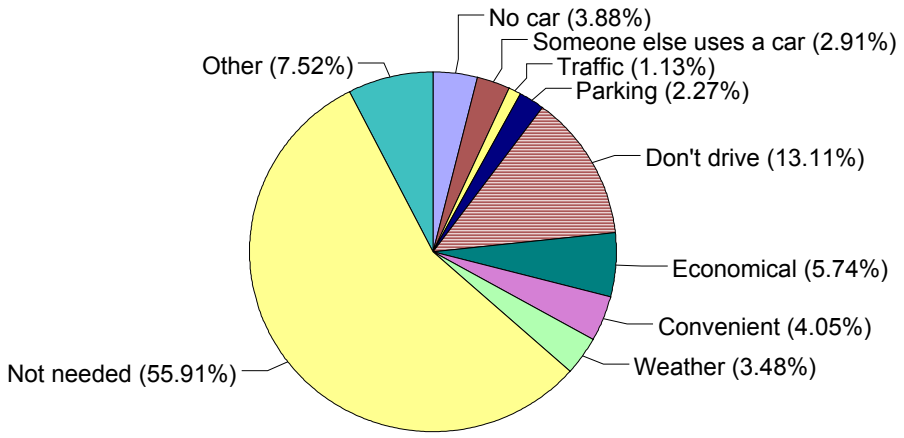


Reason for Public Transportation

The survey asked respondents the most important reason they needed public transportation. Fifty-six (56) percent of respondents reported that they did not need transportation. The reasons for requiring public transportation are respondents who did not drive (13 percent) and other reasons (8 percent). The major reasons of those respondents who selected "Other" were that they needed transportation because of unexpected cars breakdowns, are blind, or are disabled. Figure XII-8 presents this information. Seventeen percent of responses (206 responses) were possible choice riders who choose public transportation because of convenience, economical reasons, traffic, weather, or parking reasons. On the other hand, 20 percent of the respondents (246 responses) may be possible transit-dependent riders who use transit because of reasons such as the family does not own a car, someone else uses the car, or they do not drive.

Figure XII-8

Reason You Need Public Transportation



Important Service Characteristics

The survey asked respondents to rate each characteristic that influenced their decision to use public transportation. The categories separated into four rankings —not important, desirable, important, and very important. The average response was then calculated for each attribute. The middle point of responses would be 2.5, so an average score of 3.0 or higher would indicate service characteristics

important in the decision to use public transportation. The responses are shown in Table XII-4.

All characteristics were scored positively and were ranked higher than average, except service every few hours, employers pay part of the cost, and service from a park-and-ride lot to work. Guaranteed ride home and service close to home were ranked the highest by respondents, followed by clean buses and flexibility in scheduling trips.

Table XII-4
Characteristics That Influence Public Transportation
(ranked in descending order)

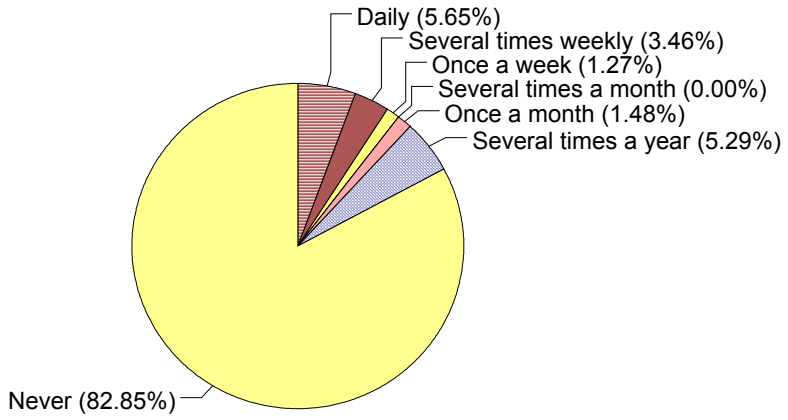
Attributes	Average Score
Guaranteed ride home	3.18
Close to home	3.18
Clean buses	3.14
Flexibility in scheduling trips	3.05
Service from home to work	2.91
Weekend service	2.70
Evening service	2.60
Accept different payment options	2.57
Attractive buses	2.51
Express service (with few stops)	2.47
Service every half-hour	2.42
Service twice a day	2.40
Service every hour	2.40
Service from a park-and-ride lot to work	2.19
Employer pays part of the cost	2.14
Service every few hours	2.05

Note: LSC Community Survey, 2006.

Ridership Frequency

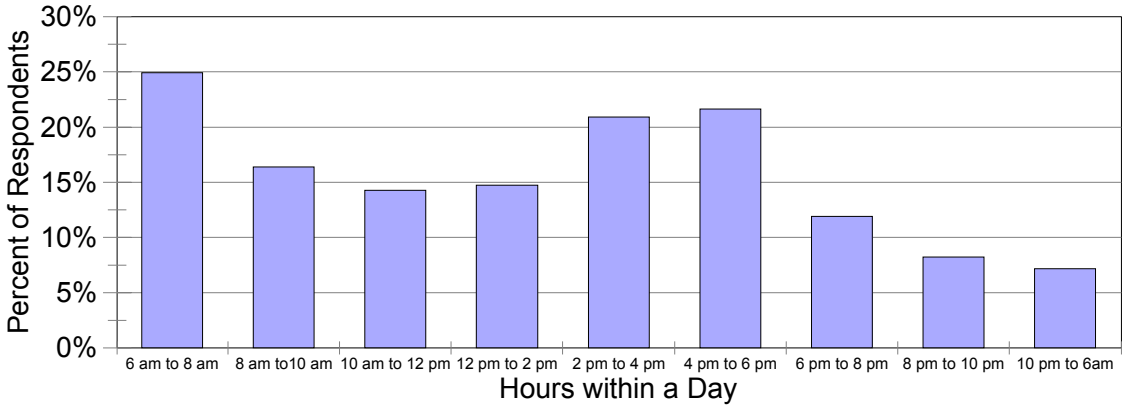
The survey asked respondents how often they used public transportation. Figure XII-9 shows the responses. Approximately 83 percent of the respondents (1,174 responses) reported that they never used public transportation, while 6 percent (80 responses) use the service daily.

Figure XII-9
Ridership Frequency

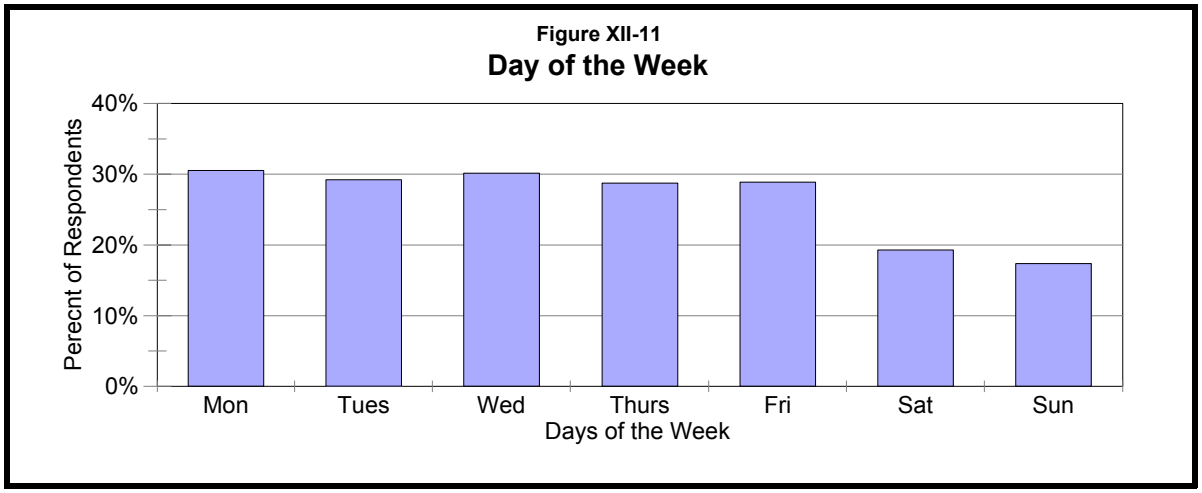


Respondents were asked to select the hours that they most needed transportation. The responses were fairly split among the various hours listed. Results are shown in Figure XII-10. As shown in the figure, the hours of transportation most needed ranged from 6:00 to 10:00 a.m., slightly decreased from 10:00 a.m to 12 noon, and then increased from 12 noon to 6:00 p.m. The need for transportation after 6:00 p.m. onward to 6:00 a.m. decreases from 8 percent to 5 percent.

Figure XII-10
Hours of Transportation

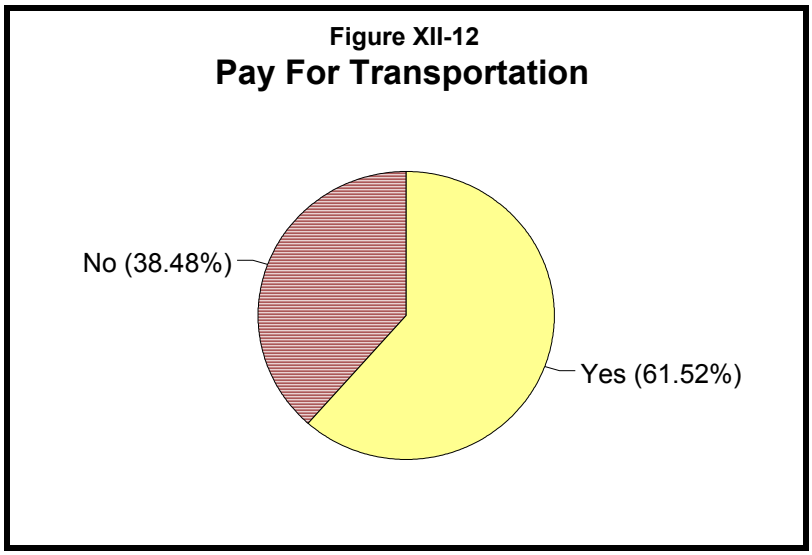


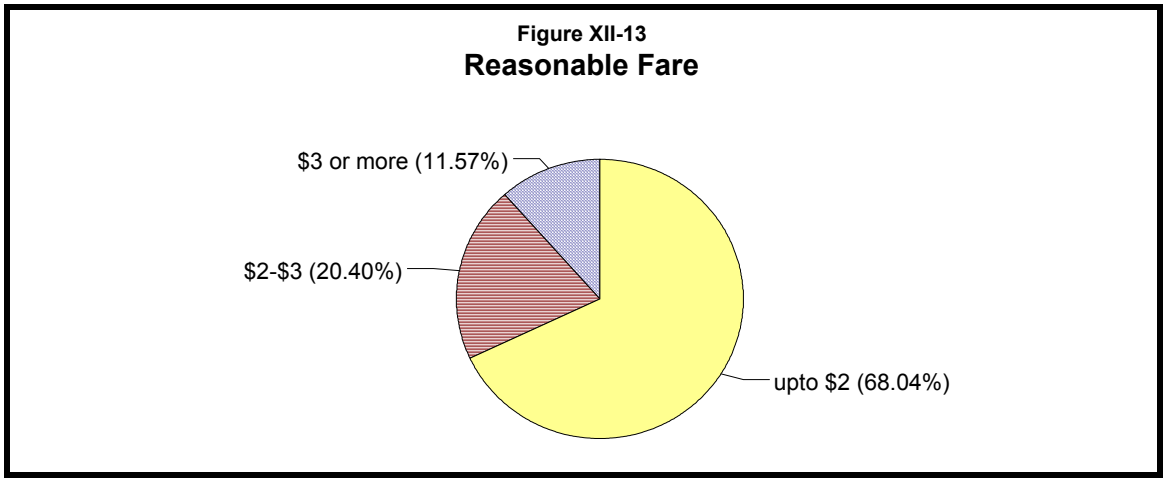
Passengers were also asked the days of the week that they needed public transportation. The responses were fairly evenly distributed among the various days of the week listed. Figure XII-11 shows the responses. As shown in the figure, Sundays showed the lowest need for transportation (17 percent) closely followed by Saturdays (19 percent).



FARE INFORMATION

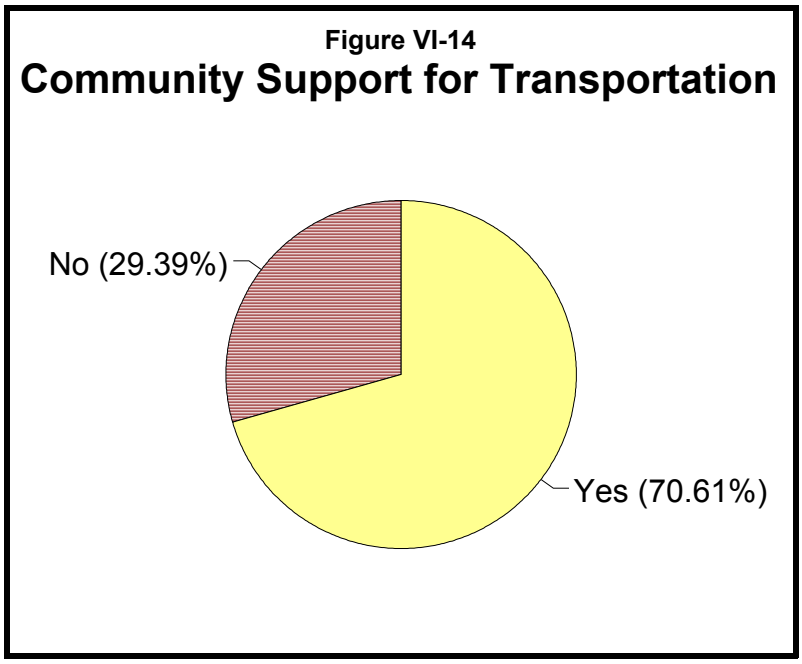
The survey asked respondents to indicate their willingness to ride if a fare was charged and what would be a reasonable fare for a one-way trip. Figure XII-12 shows the willingness of passengers to ride if a fare was charged. Approximately 62 percent said they would ride if a fare was charged. The responses to the amount of a reasonable fare are shown in Figure XII-13. Sixty-eight (68) percent of the responses indicated that an amount up to $2.00 was a reasonable fare.





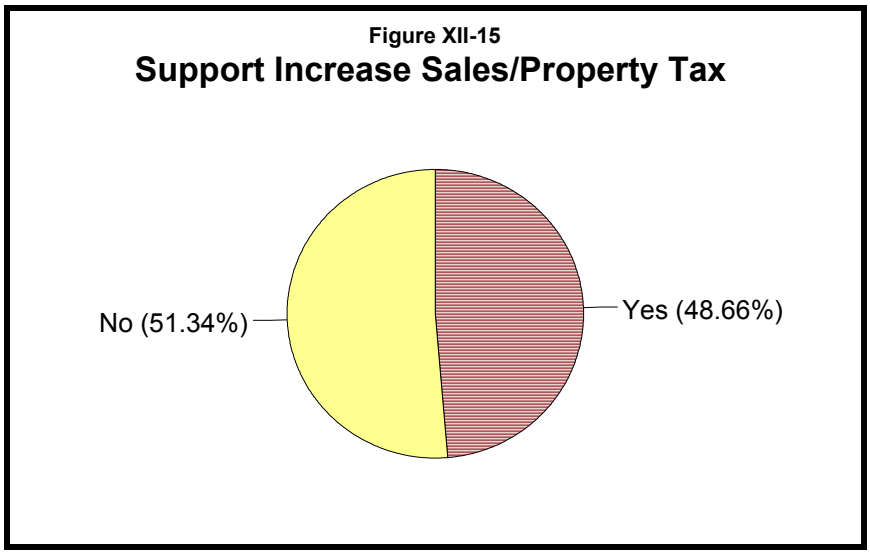
COMMUNITY SUPPORT

The survey asked respondents if they believed there was community support for public transportation. The responses are shown in Figure XII-14. Seventy- one (71) percent of the respondents believed that there was community support for public transportation.



Support for Increase in Sales Tax or Property Tax

The survey asked if respondents were willing to support an increase in sales or property tax for a coordinated public transportation system. The results are shown in Figure XII-15. Forty-nine (49) percent of respondents reported that they would support an increase in taxes for public transportation which was slightly lower than respondents who did not support an increase in taxes. As this survey is not a representative sample of the community, the results should not be interpreted as representative of the population.



TRANSPORTATION DEMAND

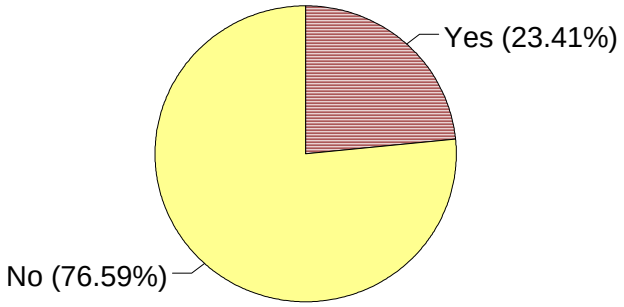
Identifying transportation needs within a community is an important factor for coordinating and creating an efficient public transportation. The need to travel exists whether or not passenger transportation is available. This information was identified based on the surveys received from the community at large within Boone County.

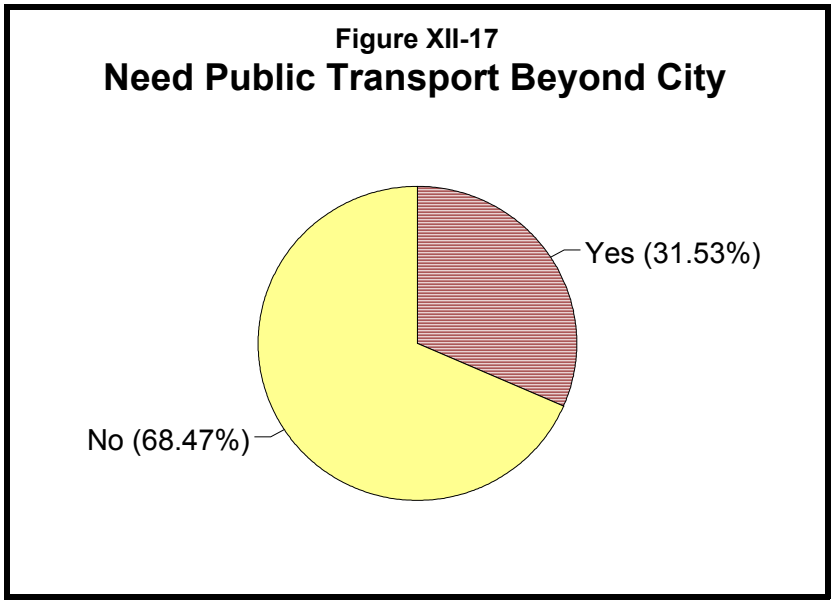
Transportation Need Beyond County/City

The survey asked whether transportation was needed beyond the county and, if so, which county. Similarly, the survey asked whether transportation was needed beyond a city and for a list of the cities that needed transportation. Figures XII-16 and XII-17 show the responses of whether transportation is needed beyond the county and city, respectively. The list of counties and cities that respondents needed transportation to and from are provided in Appendix P. The most common counties listed were Audrain, Boone, Callaway, Cole, Cooper, and St. Louis Counties. Among the cities listed, the most common were Ashland, Boonville, Columbia, Jefferson City, Kansas City, Mexico, St. Louis, and Kansas City.

Figure XII-16

Need Public Transport Beyond County





Additional Unmet Needs and Comments

Respondents were given the opportunity to include comments on additional unmet transportation needs. The actual responses to the unmet needs and comments are included in Appendix Q. The major comments relate to:

- Cost-effective transportation to work.
- Transportation to major employers.
- Commuter service from Columbia to Jefferson City.
- Sunday and evening service.
- Service to towns such as Hallsville, Centralia, and Ashland.
- Adding sidewalks and bike paths.
- Reducing the walking distances to bus stops.
- Making public transportation handicapped-accessible.
- Inability to use public transportation due to age, medical, or health-related reasons.

Other transportation needs included transportation for shopping, medical, church activities, and transportation for persons with special needs such as the blind and disabled. Some of the respondents believed that they did not need transportation at the present time, but others believed that they may need transportation in the future when they are unable to drive.

Chapter XIII

CHAPTER XIII

Potential Funding Sources

FUNDING SOURCES

Successful coordinated transit systems are strategic about funding. They try to develop funding bases that enable them to operate reliably and efficiently within a set of clear goals and objectives, and according to both long- and short-range plans. Potential strategies for funding transit in Boone County are described below.

Capital Funding

A coordinated transit system for this region will continue to require capital funding for bus fleet procurement and for bus stops and shelters. The following strategies for funding capital development should be considered:

- Federal funding (along with any state match funds) should be maximized— within the existing 5310 and 5311 program, and through pursuit of Section 5309 discretionary grants (both through FTA channels and through direct Congressional earmark). Small transit systems often underachieve their potential for federal grant assistance because they assume they cannot compete in that arena. Close coordination with the Missouri Department of Transportation will help the transit systems be aware of opportunities and compete for funding.

- Planning for capital facilities should take into account long-range system development needs. Many transit systems outgrow their facilities quickly and face costly relocation and expansion needs because of inadequate space or other constraints.

- The transit financial management system should include specific provision for recapitalization of the fleet and of certain other capital investments. A sinking fund for capital replacement should be established and some amount of money from local funding sources should be set aside annually based on a recapitalization plan. Note that buses and certain other capital facilities purchased with federal cost participation (80 percent under SAFETEA-LU) are eligible for federal participation in the cost of replacement once they reach maturity (as defined in FTA rules based on vehicle mileage and age).

Operations and Maintenance Funding

Over time, the primary financial requirement of a local or regional transit system will be funding routine operations and maintenance, including daily transit service, vehicle maintenance, and system administration. Labor represents about 75 percent of the costs of running a transit system with much of that going to drivers' salaries. The following strategies for funding operations and maintenance should be considered:

- Transit agencies, like highway agencies, require that most or all of their operations and maintenance funding come from dedicated sources so that they can undertake responsible planning and offer reliable, consistent service. Reliance on general fund appropriations from local governments should be avoided if possible. It is common for local and regional transit agencies in many states, including Missouri, to be dependent on annual appropriations from their constituent towns, cities, and/or counties. As a practical matter, this means it will not be possible to forecast future funding levels, given the exigencies of local government funding. Such a transit agency will be unable to undertake capital planning and will continually face potential service cutbacks. This, in turn, makes it difficult or impossible for the transit agency to enter into partnership arrangements with other agencies or with private entities.

- It may be necessary to collect fares as part of system funding, but this is not an ideal source of revenue. Due to realities of our transportation system cost and financing structure, it is generally not possible to recoup more than 10 to 20 percent of operations and maintenance costs at the farebox in rural areas. Fare collection incurs costs for farebox maintenance, cash management, and auditing. Fare collection slows down vehicle boarding and increases operating costs by increasing the time required to run each route. Finally, fare collection deters ridership.

- Operations and maintenance funding mechanisms should be designed explicitly to anticipate transit system growth. Successful rural and small urban transit systems around the United States are experiencing annual growth in ridership. It is important to be able to respond to such growth by increasing service levels to meet demand. This means that the ideal funding sources for operations and maintenance are those that have the flexibility to be increased or expanded as demand grows. Such flexibility will, in most cases, require voter approval, but the important consideration is that the need for growth has been anticipated and the potential for larger budgets is not precluded by the choice of a source of funding.

Overall Service Considerations

There are also a few overarching considerations in developing a coherent transit system funding strategy including:

- Issues of funding and service equity are of paramount importance in designing funding systems. Informal systems based on annual appropriations and systems without specific accounting for the distribution of costs and benefits struggle with local elected bodies to find acceptable allocations of cost responsibility. This can become a significant barrier to transit system establishment and, later, to system growth.

- The strongest regional transit systems are those that make extensive use of partnerships. Examples include partnerships with private companies, partnerships with national parks or other major public facilities, and partnerships with adjacent jurisdictions. Partnership arrangements enable a transit system to broaden its base of beneficiaries, expand its funding source alternatives, achieve better governance, and improve public support.

Potential Local and Regional Funding Sources

In Missouri, statutory municipalities and counties have the ability to fund transit though dedicated sales tax that is approved by the voters. The principal funding sources for local and regional transit systems in Missouri are described below.

- ***General Fund Appropriations:*** Counties and municipalities may appropriate funds for transit operations and maintenance and for transit capital needs. Funds to be appropriated come generally from local property taxes and sales taxes. Competition for such funding is tough and local governments generally do not have the capacity to undertake major new annual funding responsibilities for transit. Of the two major transit providers in Boone County, Columbia Transit currently receives no general fund appropriations from the city or county while OATS receives $8,000 from the county and $21,000 annually from the City of Columbia.

- ***Advertising:*** One modest but important source of funding for many transit services is on-vehicle advertising. The largest portion of this potential is for exterior advertising, rather than interior "bus card" advertising. The potential funds generated by advertising placed within the vehicles is comparatively low. Advertising on bus shelters has been used to pay for the cost of providing the shelter.

- ***Voluntary Assessments:*** This alternative requires each participating governmental entity (the cities and counties) and private businesses to contribute to

funding of the system on a year-to-year basis. This alternative is common for areas which provide regional service rather than service limited to a single jurisdiction. Advantages of this type of funding are that it does not require voter approval. However, the funding is not steady and may be cut off at any time.

- ***Private Support:*** Financial support from private industry can be a revenue source in providing adequate transportation services in Boone County. The major employers in Boone County are potential sources of revenue. These firms may be willing to help support alternative fuel vehicles or operating costs for employee transportation. Private industry is also a viable source of advertising revenue. OATS is an example of a provider which receives significant private support for capital purchases.

- ***University of Missouri:*** The University of Missouri currently helps support public transit in Columbia. The University funds campus shuttles operated by Columbia Transit. The University may be interested in supporting transit to the university from rural areas of Boone County. A student activity fee for transit allowing students to have unlimited rides is an excellent source of revenue. Open access provides a benefit to students. The University and Columbia Transit have begun discussions regarding University passes.

- ***Transportation Impact Fees:*** Traditional methods of funding the transportation improvements required by new development raise questions of equity. Sales and property taxes are applied to both existing residents and to new residents attracted by development. However, existing residents then inadvertently pay for public services required by the new residents. As a means of correcting this inequity, many communities nationwide, faced with strong growth pressures, have implemented development impact fee programs that place a fee on new development equal to the costs imposed on the community.

  Previous work by LSC indicates that the levy of impact fees on real estate development has become a commonplace tool in many areas to ensure that the costs associated with a development do not fall entirely on existing residents. Impact fees have been used primarily for highways and roads, followed by water and sewer projects. A program specifically for mass transit has been established in San Francisco.

  A number of administrative and long-term considerations must be addressed:

  - It is necessary to legally ensure that the use on which the fees are computed would not change in the future to a new use with a high impact by placing a note restricting the use on the face of the plat recorded in public records.

  - The fee program should be reviewed annually.

  - The validity of the program, and its acceptability to the community, is increased if a time limit is placed on the spending of collected funds.

- Impact fee funds need to be strictly segregated from other funds.

- The imposition of a transportation impact fee program could constrain capital funding sources developed in the future, as a new source may result in a double payment.

- Impact fees should be collected at the time that a building permit is issued.

- ***Lodging Tax:*** The appropriate use of lodging taxes (occupancy taxes) has long been the subject of debate. Historically, the bulk of these taxes have been used for marketing and promotion efforts for conferences and general tourism. In other areas, such as resorts, the lodging tax is an important element of the local transit funding formula. A lodging tax can be considered as a specialized sales tax, placed only on lodging bills. As such, it shares many of the advantages and disadvantages of a sales tax. Taxation of this type has been used successfully in Park City, Utah; Sun Valley, Idaho; and Telluride and Durango, Colorado. A lodging tax creates inequities between different classes of visitors, as it is only paid by overnight visitors. Day visitors (particularly prevalent in the summer) and condominium/second home owners, who may use transit as much as lodging guests, do not contribute to transit. Chapter 67 Section 67.619 of the Missouri Revised Statutes discusses lodging taxes (Appendix R).

- ***Sales Tax:*** A sales tax currently exists for Columbia Transit. Sales tax is the financial base for many transit services in the western United States. The required level of sales tax would depend upon the service alternatives chosen. One advantage is that sales tax revenues are relatively stable and can be forecast with some degree of confidence although they do fluctuate with the economy. In addition, sales tax can be collected efficiently, and it allows the community to generate revenues from visitors in the area. This source, of course, would require legislative approval and a vote of the people to implement or increase the existing sales tax for transit. In addition, a sales tax increase could be seen as inequitable to residents not served by transit. This disadvantage could be offset by the fact that sales taxes could be rebated to incorporated areas not served by transit. Transit services, moreover, would face competition from other services which may seek to gain financial support through sales taxes.

The best and most versatile of the above long-range funding sources for local and regional transit services will most likely be a dedicated sales tax imposed by Boone County. This funding source offers a stable flow of revenue to operate the coordinated transit system. It will provide revenue for operations and local match for federal and state grants. Appendix R provides information on the use of sales tax for transit from the Missouri Revised Statutes.

Federal Transit Funding Sources

On August 10, 2005 President Bush signed the Safe, Accountable, Flexible, and Efficient Transportation Equity Act-A Legacy for Users (SAFETEA-LU), providing $286.4 billion in guaranteed funding for federal surface transportation programs over six years through FY 2009, including $52.6 billion for federal transit programs—a 46 percent increase over transit funding guaranteed in the Transportation Efficiency Act for the 21st Century (TEA-21).

SAFETEA-LU builds on many of the strengths of rural transit's favorable treatment in TEA-21 and the Intermodal Surface Transportation Efficiency Act (ISTEA) (the two preceding highway and transit authorizations). Some of the desirable aspects of the rural transit program are brought into other elements of federal transit investment, and an increased share of the total federal transit program will be invested in rural areas under this new legislation.

Listed below are descriptions of federal funding programs which may be utilized in Boone County:

- ***FTA Section 5309 Capital Improvement Grants:*** These grants are split into three categories—New Starts, Fixed Guideway Modernization, and Bus and Bus Facilities. These funds were formerly apportioned directly by the FTA; however, Congress has earmarked these funds directly now for several years. There is no indication that this trend toward earmarking these funds will change. Columbia Transit and OATS are eligible for this program, and, in recent fiscal years, smaller urban and rural areas have received a greater share of these funds than in previous years.

  SAFETEA-LU continues the longstanding guarantee that at least 5.5 percent of these discretionary grants be aimed at rural areas. Traditionally, Congress earmarks a far greater share of these grants for rural and statewide bus and facilities grants. Transit systems need to work diligently with their congressional representatives to obtain this grant funding.

- ***FTA Section 5307 Public Transportation for Small Urbanized Areas:*** Federal transit funding is currently provided through Public Transportation for Urbanized Areas. In small urbanized areas (under 200,000 population such as Columbia), funds are used for operating and nonoperating expenses. In large urbanized areas, funds cannot be used for operating expenses. Small urbanized areas have a 20 percent local match required for capital programs and a 50 percent match for operating expenditures.

- ***FTA Section 5310 Capital for Elderly and Disabled Transportation:*** FTA funds are available through the Section 5310 program. These funds are largely for vehicles and may be used to replace vehicles operated by agencies serving seniors and persons with disabilities.

- ***FTA Section 5311 Public Transportation for Rural Areas:*** Federal transit funding for rural areas is currently provided through the Public Transportation for Rural Areas program for nonurbanized areas. A 20 percent local match is required for capital programs and a 50 percent match for operating expenditures. This program has historically been the source of FTA funds for many rural areas in Missouri and, with the new SAFETEA-LU authorization bill, has seen a dramatic increase in funding level. OATS currently receives funding through this program. Many states are realizing at least twice the amount of 5311 funding under SAFETEA-LU. For federal fiscal year 2006, it is estimated that the State of Missouri will receive $11,616,749 in FTA 5311 grant funding.

- ***FTA Section 5312 Research, Development, Demonstration, and Training Projects:*** The Secretary of Transportation may make grants or contracts that will help reduce urban transportation needs, improve mass transportation service, or help mass transportation service meet the total urban transportation needs at a minimum cost. The Secretary of Transportation may make grants to nonprofit institutions of higher learning:

  - To conduct research and investigation into the theoretical or practical problems of urban transportation.

  - To train individuals to conduct further research or obtain employment in an organization that plans, builds, operates, or manages an urban transportation system.

  The grants could be for state and local governmental authorities for projects that will use innovative techniques and methods in managing and providing mass transportation.

- ***FTA Section 5319 Bicycle Facilities:*** These funds are to provide access for bicycles to mass transportation facilities or to provide shelters and parking facilities for bicycles in or around mass transportation facilities. To install equipment for transporting bicycles on mass transportation vehicles is a capital project for assistance under Sections 5309 and 5311. A grant under 5319 is for 90 percent of the cost of the project, with some exceptions.

- ***Transit Benefit Program:*** The "Transit Benefit Program" is a provision in the Internal Revenue Code (IRC) that permits an employer to pay for an employee's cost to travel to work in other than a single-occupancy vehicle. The program is designed to improve air quality, reduce traffic congestion, and conserve energy by encouraging employees to commute by means other than single-occupancy motor vehicles.

Under Section 132 of the IRC, employers can provide up to $100 per month to those employees who commute to work by transit or vanpool. A vanpool vehicle must have seating capacity of at least six adults, not including the driver, to qualify under this rule. The employer can deduct these costs as business expenses, and employees do not report the subsidy as income for tax purposes. The subsidy is a qualified transportation fringe benefit.

- ***Job Access and Reverse Commute Program (JARC):*** This program, funded through SAFETEA-LU, has an emphasis on using funds to provide work-related transportation for low-income workers. The list of eligible applicants includes states, metropolitan planning organizations, counties, and public transit agencies, among others. It is estimated that the State of Missouri will receive $284,060 for small cities and $800,000 for rural areas in JARC funding in FY 2006. A 50 percent non-Department of Transportation match is required; however, other federal funds may be used as part of the match. FTA gives a high priority to applications that address the transportation needs of areas that are unserved or undeserved by public transportation.

- ***FTA Section 5308 Clean Fuels Grant Program:*** This program is made available to projects in the Bus and Bus Facilities program (Section 5309) and can be used in the procurement of equipment and facilities which use clean fuel technology such as bio-diesel and Compressed Natural Gas (CNG). This funding is only available to public transit operators in clean air nonattainment or maintenance areas in urban and rural areas.

- ***Rural Transit Assistance Program (RTAP):*** This program provides a source of funding to assist in the design and implementation of training and technical assistance projects and other support services tailored to meet the needs of transit operators in nonurbanized areas. RTAP has both state and national program components. The state program provides an annual allocation to each state to develop and implement training and technical assistance programs in conjunction with the state's administration of the Section 5311 program formula assistance program. The national program provides for the development of information and materials for use by local operators and state administering agencies and supports research and technical assistance projects of national interest.

- ***FTA Section 5317 New Freedom Program:*** This program is a new element of the SAFETEA-LU authorization with the purpose of encouraging services and facility improvements to address the transportation needs of persons with disabilities that go beyond those required by the Americans with Disabilities ACT (ADA). To encourage coordination with other federal programs that may provide transportation funding, New Freedom Grants will have flexible matching share requirements. The State of Missouri has a FY 2006 allocation of $157,112 in New Freedom Grant funding for the small urban areas and $422,493 for rural areas.

- ***Transportation and Community System Preservation Program:*** This program is funded by the Federal Highway Administration to provide discretionary grants to develop strategic transportation plans for local governments and

communities. The goal of the program is to promote livable neighborhoods. Grants may be used to improve the safety and efficiency of the transportation system; reduce adverse environmental impacts caused by transportation; and encourage economic development through access to jobs, services, and centers of trade.

- ***Other Federal Funds:*** The US Department of Transportation funds other programs including the Research and Special Programs Administration (RSPA), and the National Highway Traffic Safety Administration's State and Community Highway Grants Program funds transit projects that promote safety.

  A wide variety of other federal funding programs provide support for elderly and handicapped transportation programs. Some of these are currently being utilized in the region and others can be explored further, including the following:

  - Retired Senior Volunteer Program (RSVP)
  - Title IIIB of The Older Americans Act
  - Medicaid Title XIX
  - Veterans' Affairs
  - Job Training Partnership Act (JTPA)
  - Temporary Assistance for Needy Families (TANF)
  - Developmental Disabilities
  - Housing and Urban Development (Bridges to Work and Community Development Block Grants)
  - Head Start
  - Department of Energy
  - Vocational Rehabilitation
  - Health Resources and Services Administration
  - Senior Opportunity Services
  - Special Education Transportation
  - Weed and Seed Program, Justice Department
  - National Endowment for the Arts
  - Rural Enterprise Community Grants, Agriculture Department
  - Department of Commerce, Economic Development and Assistance Programs
  - Pollution Prevention Projects, Environmental Protection Agency

Funding Recommendations

LSC recommends that two major sources of funding be utilized to operate this service. These are:

Potential Funding Sources

1. ***Dedicated Tax:*** A dedicated tax approved by the voters provides the most stable funding available to operate a transit system. We suggest a countywide sales tax to be considered for transit services. Surveys conducted earlier in this study did not show strong support for additional sales tax to fund transit. This does not necessarily doom any effort to obtain additional tax support. Developing a coordinated transit system and effective marketing will be essential in convincing the public of the need to provide additional taxation.

2. ***Federal Funding:*** FTA Sections 5307, 5311, and 5310 funding will be especially useful for funding both operational costs and capital costs of a coordinated service. Boone County will be eligible for these funds. We also recommend working closely with state officials and the Missouri Congressional delegation to earmark Section 5309 funding for the purchase of new buses and bus facilities. LSC also recommends the use of Section 5317 New Freedom funds for the program for new services beyond those required by the ADA. Having a coordinated service to meet the needs of persons with disabilities should meet the criteria for this new grant program.

Chapter XIV

TRANSPORTATION
CONSULTANTS, INC.

CHAPTER XIV
Potential for Coordination

INTRODUCTION

Technical Memorandum #4 described opportunities to coordinate and enhance transit services in Boone County. The opportunities were presented to the Steering Committee for discussion and input. This chapter explores the potential for implementation of each coordination scenario and service improvement. Local feedback from the Steering Committee was used to help assess the potential for these coordination strategies.

All of the identified opportunities to increase coordination among transit services in the county have the ability to benefit both service providers (e.g., reduced operating costs) and service users (e.g., increased service area). Although coordination can provide benefits, it can be a complex and sensitive task for the agencies and service providers involved. Before agreeing to coordinate, agencies will grapple with, among other things, how entering into a coordination effort will affect their control over the provision of service, the use of their transportation resources, and the quality of the service to their users. Ultimately, agencies are concerned with the ability of a coordinated service to meet their transportation needs and the needs of their clients. Coordination promises to meet these needs in a more efficient and comprehensive manner than any single agency can do on its own, but agencies will naturally be cautious about coordination until it has proven to deliver such benefits within Boone County.

The survey of transportation service providers revealed that many of the social service and transit agencies in Boone County are at least interested in some form of coordinated activity. Coordination is a broad concept, which can refer to myriad activities, from basic information sharing among agencies to consolidation into a single countywide transit system. Therefore, it is possible to pursue coordination even if the relevant agencies have not expressed commitment to the most extensive forms of coordination. In Boone County, where there is little or no prior experience

of coordination among transportation providers, basic coordination efforts—such as inclusive planning discussions, information sharing, and minor service adjustments—are the most realistic starting point. Establishing basic coordination can be inexpensive and does not require major operational changes. Although the rewards are not as great with basic coordination activities, neither are the perceived risks. These efforts will provide agencies with the ability to build relationships and to identify common ground. Once agencies become accustomed to working together, it may be possible to build off success and pursue more extensive coordination.

Examining all of the identified coordination opportunities will reveal which opportunities have the greatest chance to gain immediate support and what it will take to achieve higher degrees of coordination in the future. In many cases, the coordination opportunities are related to one another; some basic coordination activities better set the stage for more extensive coordination opportunities than others. Understanding the full possibilities for coordination in Boone County will help service providers make decisions about the best ways to initiate working together. Achieving more extensive coordination may take considerable time in Boone County, but even the most basic forms of coordination stand to benefit the county's public transportation network.

This chapter categorizes the identified coordination and enhanced service opportunities into three categories:

Basic coordination – Basic coordination opportunities are the most obvious and easily attainable opportunities. These can usually be implemented without significant cost or administrative effort. Since these efforts are the easiest, they are also the loosest forms of coordination discussed in this chapter. The coordination opportunities presented in this section can serve as the foundation for more extensive forms of coordination in the future. These coordination efforts can help bring the different agencies together without forcing any of them to lose control over their operations or significantly alter the service they provide.

Extensive coordination – The extensive coordination scenarios discussed require a higher degree of commitment from participating agencies than basic coordination opportunities. Several of the extensive coordination scenarios presented have the ability to create a countywide transportation system that would significantly alter how transportation is provided in Boone County. While different scenarios are capable of achieving this end, they all require participating service providers to alter how they administer and deliver service to some degree. These scenarios include opportunities to both closely coordinate service and to consolidate service under a single transit operator.

Enhanced service – Enhanced services do not necessarily require coordination. Rather, these ideas for improving transit service represent potential solutions for better meeting transportation needs identified for Boone County. All of the identified enhanced services require additional resources, coordination may help free up existing transportation resources to meet these needs. Additionally, identifying service improvements that could better meet the county's transportation needs will provide a broader context for thinking about which types of coordination would be best for the county.

This chapter also presents an overview of federal support for local coordination efforts as emphasized in federal legislation and through the United We Ride program.

Many of the coordination activities and enhanced services presented in this chapter could be pursued individually or simultaneously. Although it is not necessary to start with basic coordination, doing so will help strengthen relationships among agencies and demonstrate how coordination can be successful. Once a basis for coordination has been established, it may be possible to initiate more extensive coordination activities. In large part, the ability for agencies to coordinate will depend on the willingness of each agency to participate, which is why it is advantageous to start small with broad participation and build support. Finding the optimal level of coordination for Boone County will take hard work and time, but has the potential to realize significant improvements for the county's public transportation system.

FEDERAL SUPPORT FOR COORDINATION

Federal support for coordination of transportation programs is primarily provided under the United We Ride (UWR) program. United We Ride is an interagency federal initiative that supports states and their localities in developing coordinated human service delivery systems. The UWR program and coordination of transportation services is supported at the highest levels of the federal government. Coordination efforts have been directed by Presidential Executive Order in February 2004 which formed the Transportation Coordinating Council on Access and Mobility.

The UWR program provides both technical support and funding through state coordination grants. These grants can be used to assist states in: conducting a comprehensive state assessment using the UWR Framework for Action; developing a comprehensive state action plan for coordinating human service transportation; or for those states with an existing comprehensive state action plan, grants can be used for implementing one or more of the elements identified within the Framework for Action.[1] Missouri has received funding which will be used for transportation coordination workshops.

SAFETEA-LU includes a requirement that any funding for projects under the Federal Transit Administration (FTA) Section 5310 program, the Job Access Reverse Commute (JARC) program, and the New Freedom program must be based on a local coordinated transportation plan. Some of the human services transportation providers in Boone County may be eligible for funding under the Section 5310 program while some of the enhanced services discussed in this chapter may be eligible for funding under the JARC or New Freedom program. Without support of a local coordinated transportation plan, these activities will not be eligible for funding under these specific federal programs.

EXISTING COORDINATION ACTIVITIES

There are a number of coordination activities which are currently taking place in Boone County. These have been identified in the description of each agency which

[1] Federal Transit Administration at \http://www.fta.dot.gov/legal/federal_register/2004/12174_15861_ENG_HTML.htm.

is involved in providing transportation service to the community and are summarized briefly in this chapter. One example of existing coordination is the Medicaid brokerage. LogistiCare serves as the statewide Medicaid broker. Several transportation providers are used in Boone County to provide the service including OATS, Advantage Medical Transportation, and local taxis. Columbia Transit operates the campus shuttles under a contract with the University of Missouri. Columbia Transit and the University are discussing the possibility of open access on Columbia Transit for University students. Several agencies purchase bus passes on Columbia Transit or have contracts with OATS to provide transportation to their clients. OATS is a consolidated rural transportation provider.

These examples of existing coordination activities illustrate many of the coordination efforts that have already been undertaken in Boone County. Recognizing that these coordination efforts are in place, the focus of this chapter is on additional coordination strategies that could be considered for implementation.

BASIC COORDINATION

The basic coordination strategies discussed in this section are based upon continuation of existing coordination efforts. Other agencies could participate in some of the existing coordination efforts to enhance the overall coordination of service in Boone County. For example, additional agencies could purchase transportation service from OATS or Columbia Transit. Smaller providers could join together for joint purchasing of fuel, maintenance, and supplies. These existing coordination efforts should be continued and expanded to other agencies as part of the basic coordination strategies.

There are two basic coordination activities identified as the most obvious steps available to Boone County transportation providers:

- joint public relations and marketing materials, and
- coordination with other modes of transportation.

At the most basic level, both of these efforts are designed to bring service providers together to work and share information. Teaming for public relations will facilitate public transportation service providers working together, while efforts to coordi-

nate with other modes of transportation will bring public transportation operators together with local governments and private transportation operators. The following discussion of these two opportunities addresses the requirements for implementation, associated costs, benefits, and the likelihood of implementation.

Even with these basic forms of coordination, there are activities capable of matching different levels of commitment. The opportunity to undertake a coordination effort at the lowest level of commitment creates a very low barrier to participation. Basing a coordination effort around a basic form of coordination will make it easier to gain broad support from transportation providers. Further, the participating agencies can continue to take steps toward improving their coordination without altering the nature of their efforts. This will enable coordination to develop as support grows.

Joint Public Relations and Marketing Materials

The Steering Committee expressed the greatest support for initiating Boone County's coordination activities with transportation providers joining together to conduct public relations and marketing activities. The Steering Committee, Columbia Transit and OATS, as well as 20 other agencies, stated that they were at least interested in participating in a countywide marketing program. Such a program would revolve around the collection and distribution of information on each of the participating services. Under all circumstances, this type of activity would be based on sharing information between agencies, but there are multiple means for distributing this information to the public. The distribution method will largely depend on the level of commitment from the participating agencies and their desire to coordinate. Since some agencies have shown apprehension about coordination in Boone County, the most basic form of this coordination may be the most manageable first step.

Inclusive Brochures

In its most basic form, a joint public relations effort and shared marketing materials would consist of the inclusion of essential information for services on one another's brochures. For example, Columbia Transit could include contact and

service information for OATS on its schedules. This would be relevant to riders since Columbia Transit only operates in the city. This sort of coordination can be accomplished generally cost free, since it is limited to agencies already printing service brochures. There is no need for any management or oversight of this effort, and agencies would have the freedom to choose which agencies to coordinate with. Participation of the larger transit agencies in the county—Columbia Transit or OATS—could potentially help raise public awareness of smaller agencies operating in the county.

Resource Manual

The next step would be to create a resource manual describing all of the services. Such a manual could be distributed to transit riders, transit agencies, and other human service agencies attracting transit-dependent clients. Producing a transportation resource manual for all services in Boone County would be the first time information on the broad services available would be available in one document. This would enable transit users to rely on a single resource to identify which services best meet their needs as well as how different services can be used in tandem. Further, transportation providers, especially smaller program-specific providers, could use such a resource to help their clients supplement their service.

Since nothing of the sort is currently produced, the creation of a resource manual would generate new work and responsibilities. The production of a resource manual will require one agency or a small group of representatives from different agencies to take responsibility for compiling the relevant information and overseeing the layout and printing of the manual. One of the larger transit operators in the county may have staff members who have experience producing informational materials capable of assuming this responsibility. Much of the information that would be included in a resource manual has already been collected and compiled as part of this study, which reduces the initial groundwork required to produce the document.

It is possible that the resource manual could take several different forms. A simplified version with basic information for users could be produced in a smaller brochure format as discussed in the next section. A more detailed desk reference

manual could be prepared with more information for use by the providers and agencies who have clients with transportation needs. The third format could be an interactive version hosted on a local website.

The primary costs associated with the production of a resource manual are related to the collection and maintenance of the data as well as the publication of the manual. As stated above, much of the information regarding each of the county's transportation services was collected as part of this study, which would reduce the time and cost of the initial data collection. The cost of the production of the manual would depend on the quality and quantity of the printing. Sharing this cost among all of the transportation providers in the county would keep down the amount of funding required by each individual agency. Annual costs to compile updated information is estimated to be $500 to $1,000.

Common Brochure

Once the county's transportation providers have collaborated on the creation of a resource manual, they may eventually take a additional step and create a shared brochure describing the different services available in the county. This common marketing material would distill the information presented in the resource manual into a brochure designed for broad distribution to potential users. Additionally, a common brochure may pave the way for other marketing opportunities. Although the creation of a common brochure is a sort of combination of the first two public relations coordination steps, creating a common brochure may require more agreement from participating agencies.

The creation of a common brochure will require making numerous decisions about what information will be included and how it will be presented. Many transportation providers, especially larger transit agencies, spend considerable time and resources in cultivating marketing strategies. It may be difficult to get multiple agencies with unique identities, especially agencies providing similar services and competing for the same market, to agree on common marketing materials.

An agency, or a small number of staff from different agencies, would need to take responsibility for the work of producing the brochure. The agency that is respon-

sible for the production of the resource manual would already have the information required to produce the brochure. Staff from one of the larger transit agencies may be most suitable for undertaking such a task since they likely have greater experience with marketing service. Additional meetings of agency representatives may be required to garner an agreement of the general purpose and design of the brochure.

The cost of a common brochure is variable based on decisions about the quality of printing and level of distribution. Since this brochure would be created for the express purpose of marketing county transportation services to potential riders, it would likely require higher quality printing than the resource manual and have a wider distribution. The design of a common brochure would require more time than the resource manual. Therefore, the common brochure may have greater costs associated with it than the production of a resource manual. Since the common brochure and the resource manual are based on the same information though, creating a common brochure once the resource manual has been produced will benefit from the completion of much of the data collection. And, once again, the cost of a common brochure distributed over all participating agencies would reduce the cost the individual cost for each agency.

Once a resource manual and common brochure have been created, it will be possible to create a common website to post this information. A website can serve both as a marketing tool and as a warehouse of information for potential riders. The design of the site could reflect the common brochure, but it could also provide access to all of the information available in the resource manual.

One example of a consolidated information brochure is Glenn Ride in Glenn County, California. The brochure describes Glenn Ride, subsidized taxis, volunteer medical transportation, and a Ride to Work program. Contact information is provided for those needing more detailed information. The brochure may be viewed online at www.countyofglenn.net. Regional Transportation Program, Inc. (RTP) in Portland, Maine also has a consolidated Ride Guide which describes the various services available in the community. The Ride Guide and other information is available on the RTP website at www.rtprides.org.

Informational Phone Line

A shared informational phone line would provide potential users with the most convenient access to information on all transportation services in the county. The creation of a shared phone line is the most extensive of the efforts suggested under joint public relations because it would require a dedicated and knowledgeable customer service representative to answer the phone line. The phone number for this line could be distributed with all informational and marketing materials regarding transportation services.

Although an informational phone line is a more accessible version of the resource manual, it will take considerably more effort to implement. Either a new employee will have to be hired or an existing employee of one of the agencies will have to assume the responsibility for answering the informational line. The cost of one additional person for this function would be about $32,000. This employee will have to be familiar with all of the transportation services in Boone County. Furthermore, the information line will be most useful to callers if the employee has knowledge about how users could best take advantage of the transportation resources in the county, such as by chaining trips of different providers together. In addition to the requirement of a dedicated employee to answer the phones, maintaining an informational phone line will also require consistent maintenance of the information available on each of the services to remain current. The customer service representative responsible for answering the phone line may also be able to take responsibility for collecting and maintaining that data.

The agency responsible for collecting and maintaining the data for the resource manual will likely be the most capable of taking responsibility for the informational phone line, especially if it is one of the larger transportation providers. The larger transportation providers—such as Columbia Transit and OATS—have larger staffs, resources, and institutional infrastructures than the smaller agencies, many of which don't provide transportation as their primary function. One of the larger agencies may also have the ability to train and room to house a shared customer service representative.

The primary cost associated with an informational phone line is for the salary and benefits of a customer service representative. This cost may be reduced if an existing employee of one of the providers was able to assume the additional responsibility of answering the informational phone line. An employee already tasked with responding to phone calls to the public may be able to handle additional calls from the proposed line. In return for providing this service for all of the agencies, the participating agencies could help pay for a portion of the salary and benefits of the employee. If no existing employee was capable of taking on the additional responsibility, a new employee would need to be hired and all agencies would need to share the cost. In this case, it may be warranted for the larger agencies to pay for a greater share of the cost, especially if it is found that they generate more informational requests. Additional costs would include the added staff time required to maintain the information on different services, which would depend on how frequently providers changed their services.

There are many examples of one-call centers. The RTP in Portland, Maine described in the section on brochures is one example of a single telephone number for transportation information and services. The Potomac and Rappahannock Transportation Commission (PRTC) in Woodbridge, Virginia is another example. The PRTC call center was established in 1995 and handles approximately 400 calls a day. PRTC provides fixed-route commuter service, shuttles to Metrorail stations, flex-route and subscription demand-response service, and rideshare matching service.

Summary

All four of the proposed public relations and marketing activities have the ability to benefit both riders and the participating agencies. Within Boone County, transit users and potential users have numerous transportation resources available to them. Some of these services offer broad service and are well known while others cater to specific populations. Despite all of these individual service providers, there is no countywide system. Riders are left on their own to piece together different services to meet their transportation needs. Having information on all of the different services provided in one location will make it easier for riders to find ways to get to their destinations when they need to. The easier it is to access this infor-

mation and the more the services are marketed together, the easier it will be for riders to find the service that best accommodates their needs or to rely on multiple services.

The transportation providers who participate in joint public relations and marketing efforts also stand to benefit. By aiding their riders in understanding how each service relates to one anther, it may be possible for riders to make better use of the system, which will potentially increase ridership. Having all of the agencies combining their resources for marketing purposes will enable each small service provider to reach a larger audience at a cost not possible if they acted on their own. Providing potential riders with information on all services may also result in a more efficient use of resources across the public transportation network.

In addition to the operational benefits, this basic coordination will provide agencies with the opportunity to compare services and find common ground for future coordination. Currently, the numerous service providers do not coordinate their services and many are apprehensive about coordination. Bringing transportation providers together to share information and build relationships with one another may serve as a foundation for more extensive coordination. If Boone County service providers accomplish coordination of basic public relations efforts, there may be a foundation for eventually transitioning from a shared phone line into a central reservation line and dispatch center.

Coordinate with Other Modes of Transportation

Basic coordination regarding public relations provides a means to bring public transportation providers together to discuss their services and share information. Increasing communication among service providers has the potential to build a foundation for more extensive coordination in the future. Furthermore, providing an opportunity for agencies to discuss their services and overlapping interests may motivate individual agencies to make changes to better coordinate their services with others on their own. While these efforts will improve coordination among public transportation providers in the county, the public transportation system will also benefit from discussions

between public transportation providers and providers of other modes of transportation, specifically pedestrian, bicycle, taxi, and private bus.

Coordinating with these other modes of transportation can begin with discussions about current services and facilities, as well as future plans. At the most basic level these discussions may not be able to motivate immediate action, but they can broaden the considerations each individual agency, company, or municipality takes into account as they plan for the future. It is possible for public transportation providers to enter into discussions with providers of other modes of transportation as a group or on their own. Because they have the largest ridership, Columbia Transit and OATS will likely have the best success of coordinating with other agencies, companies, and municipalities if they enter into their own discussions.

Pedestrian and Bicycle

Almost all public transportation trips begin and end as pedestrian or bicycle trips as transit riders travel to or from transit service. Pedestrian and bicycle facilities are generally constructed and maintained by municipalities, although private landowners may also provide such facilities on their property. Local municipalities are continuously maintaining and improving their pedestrian and bicycle infrastructure, and transit services are continuously evaluating their service and schedules. Transportation providers meeting with representatives of municipalities regarding coordination between public transportation and pedestrian and bicycle facilities will enable both groups to make more informed decisions in the future about how to make changes and improvements. These discussions can address both specific needs, such as a lack of sidewalk access to a bus stop, and general future plans, such as a new bus route or development. This is a particularly timely strategy to consider for Columbia as the community has received a grant specifically to enhance non-motorized transportation. As the City develops plans for non-motorized transportation facilities, coordination with public and human services transportation providers should be an important element of the process.

In addition to holding discussions with municipalities, the transportation providers can take steps to make it easier for riders to use bicycles in conjunction with

public transportation. Transit services, especially those catering to the general public, can install bicycle racks on their vehicles, such as those on all Columbia Transit vehicles. This will make it possible for riders to use a bicycle to access both the transit service as well as their destination. Public transportation providers could further enhance the ability of riders to incorporate bicycles into their trips by installing bike lockers and racks at major transit facilities, such as transfer centers and popular bus stops. Municipalities may be willing to install bike lockers or racks near transit facilities as well as near other popular destinations.

Major capital improvement projects within a municipality such as the construction of a new side walk or a bike lane can be costly. Although these improvements may be necessary to improve the integration of the pedestrian, bicycle, and public transportation networks, it is unlikely that any such projects will be undertaken as an immediate result of coordination discussions. Instead, as municipalities improve their infrastructure, they can include the ability of improvements to provide better coordination to other forms of transportation as a consideration in their decision to allocate resources. Over time as the pedestrian, bicycle, and public transportation systems begin to reflect consideration of one another in their planning, the general transportation system will become better coordinated.

The immediate costs incurred by transportation providers coordinating with these modes of travel would be based on the decision to install bicycle racks on vehicles and facilities at bus stops. There are numerous brands and varieties of bicycle racks for vehicles and parking facilities for securing bikes, which provide opportunities to fit different sized budgets. Bicycle racks enable transit vehicles to carry limited number of bicycles (usually two or three) and cost approximately $600 each.[2] Columbia Transit's vehicles are all already equipped with bicycle racks. If OATS were to install this equipment on its 14 vehicles, it would cost approximately $8,400. Other transportation providers could also install bike racks on their vehicles.

[2] Marni Leff, "Sales keep rolling along for maker of Bike-Rack-for-Buses," at seattlepi.nwsource.com/business/63174_bend21.shtml.

An additional improvement would be to provide more official places for riders to securely lock their bicycles, especially near major Columbia Transit bus stops. There are several different types of facilities designed for securing bicycles, including a simple lockpoint or more sophisticated bike lockers. A lockpoint provides a secured metal structure to lock a bike and costs approximately $150 per lockpoint. Bicycle lockers provide each user with an enclosed space to lock a bike and cost approximately $1,300 per locker. The total cost for bike facilities would depend on how many places facilities were installed, the type of facilities, and the number of bikes to be accommodated.

There are potential sources of federal funding for bicycle facility improvements within the public transportation system. FTA Section 5309 capital grants provide up to 80 percent of funding for capital transit projects. FTA Section 5319 funding may be used for bicycle facilities. The federal government also initiated a Nonmotorized Transportation Pilot Program in four communities, including Columbia, Missouri. This grant program provides funds for projects that contribute to the nonmotorized transportation infrastructure.[3] These funding sources have the potential to reduce the funding share required of the individual agencies.

Improving coordination between public transportation and the pedestrian and bicycle systems will foremost benefit transit riders. By improving access between transit stops and destinations, these coordination efforts have the potential to make it easier for transit users to access jobs and essential services. This is especially important in the rural parts of the county, where destinations are spread out and pedestrian infrastructure is less extensive. The ability for a rider to use a bike as part of a transit trip extends the distance they are able to travel or reduces the total time of travel. Although the benefit to the environment may be inconsequential, the ability to use a bicycle in conjunction with transit may also allow an individual the opportunity to avoid using a car.

[3] U.S. Department of Transportation, Federal Highway Administration, at www.fhwa.dot.gov/environment/bikeped/legtealu.htm.

Other communities have taken steps to better coordinate their nonmotorized and public transportation systems. Ann Arbor, Michigan—a small midwestern city with a large university—recently completed the Ann Arbor Nonmotorized Transportation Plan.[4] A component of the vision of the plan is to improve pedestrian and bicycle transportation so that residents will have the ability to choose to use public transportation.

Private Transportation

The public transportation providers could also loosely coordinate with private transportation providers, such as Greyhound or the various taxi services, by sharing information. This type of coordination is not unlike the basic coordination proposed for the public transportation providers. All of the transportation providers could share information about their services. This may reveal opportunities to better coordinate services in the future as minor schedule and operational changes are considered. For instance, OATS could decide to meet select intercity (Greyhound) trips or Greyhound could notify OATS if a passenger wanted to make a connection. The different providers could also provide links to one another's websites and provide information at each other's facilities. This type of coordination could make transferring between these modes of transportation easier for customers.

Similar to basic coordination efforts among the public transportation operators, basic coordination efforts between public and private transportation providers would provide the foundation for more extensive coordination in the future. For example, more extensive coordination in the future could result in Columbia Transit sharing its transfer center—Wabash Station—with Greyhound. This would create a multimodal facility where riders could access local, regional, and national bus service. If Greyhound agreed to use Wabash Station, Columbia Transit could consider acting as the agent, which would permit it to collect associated fees. Sharing its space with Greyhound could generate additional revenue for Columbia Transit while offering better coordinated bus service for its customers. Two

[4] The Greenway Collaborative, Inc., at www.greenwaycollab.com/images/AANoMo/AANoMo%20Master%20Plan%20Complete%20PRD%2010-6-05.pdf.

examples where the local public transit system serves as the intercity bus ticket agent are in Pocatello, Idaho and Helena, Montana.

Summary

The identified basic coordination efforts provide the most obvious and attainable forms of coordination for transportation providers in Boone County. These activities are relatively inexpensive and do not require any major service or institutional changes. These activities have the ability to both improve the usability of the entire transportation network for transit users and to provide the basis for more extensive coordination in the future. While these efforts will not necessarily lead to more extensive coordination, they will help agencies to make more informed decisions about coordinating with one another. Furthermore, many of the agencies, including Columbia Transit and OATS, have already expressed interest in exploring these types of options for countywide marketing and coordinating schedules.

EXTENSIVE COORDINATION

The extensive coordination scenarios require more effort, change, and funding than those described in the basic coordination section. Although these coordination scenarios require more work, they have greater potential benefits, both for agencies and riders. There are two general categories of extensive coordination scenarios presented in this section—coordination and consolidation. Coordination scenarios provide opportunities for service providers to closely coordinate their services while continuing to directly operate their services, whereas consolidation scenarios result in the operation of transportation services under a single agency.

Coordination

Brokerage/Lead Agency

The creation of a brokerage or lead agency would enable all of the transportation providers to closely coordinate their services while retaining their own services and identities. A brokerage agency could be developed separately or as part of an existing agency. The central function of the brokerage agency would be to operate a central reservation and dispatch center for all of the county's services. Potential riders could call one toll-free phone number and have the ability to make a reser-

vation or receive information on any transit or paratransit service in the county. With the acquisition of reservation software, the lead agency could direct individuals in need of rides to the most appropriate service and provide agencies with the most efficient routes of travel. This scenario could develop out of the shared informational phone line described in the basic coordination section.

The ability of a brokerage agency to effectively manage reservations and dispatch vehicles for multiple services will require the purchase and implementation of reservation and dispatch software. This software will be necessary for the brokerage agency to administer trips for multiple agencies with minimal staff. The performance of the reservation software will be further enhanced by the installation of mobile data terminals (MDT) and automatic vehicle location systems (AVL). These pieces of hardware would enable drivers and dispatchers to communicate essential information.

It is possible for any of the smaller transportation providers to form a brokerage for transportation services. The ability of a group of transportation providers to create a brokerage or to coordinate under a lead agency is improved if an agency with the necessary experience and existing infrastructure is able to assume the role of lead agency. Boone County has three agencies that could potentially fill this role—Columbia Transit, OATS, or the Boone County Community Partnership (BCCP). Although BCCP is the only one of the three that does not currently provide transit service, the agency could still lead the coordination effort. As the two largest transit operators in the county, both Columbia Transit and OATS already have experience and infrastructure that would place them in a position to take reservations and dispatch vehicles for paratransit service. Columbia Transit is in the process of acquiring the RouteMatch software program which has the capability to provide scheduling and dispatching service for all of the providers. In addition to these potential lead agencies, all other service providers could join this coordination effort. Even agencies that do not participate in the reservation and dispatch system could have their information made available to callers.

The lead agency will not only gain the responsibility of managing reservations and dispatching, it will also be responsible for reporting the activities of the brokerage

service to member agencies as well as various federal, state, and local agencies. The creation of a brokerage agency will also require the lead agency to contract with all member agencies to explicitly state what services will be provided at what costs.

The primary costs associated with creating a coordinated public transportation system under a lead agency or brokerage system are related to the software, hardware, and staff requirements of implementing the reservation and dispatch center. A geographic information system (GIS)-based reservation and dispatch software system can be a considerable investment. An accurate cost estimate is difficult to determine for such a system because each software package is custom built to the needs and resources of individual clients. Columbia Transit is in the process of implementing RouteMatch for scheduling and dispatch. There would be additional costs to integrate additional providers. The associated vehicle hardware costs approximately $3,700 for an MDT unit, GPS antennae, and associated hardware, plus approximately $750 for installation. If all of the vehicles for just the two major transit operators—Columbia Transit (30 vehicles) and OATS (14 vehicles)—received this equipment, it would have a one-time capital cost of approximately $200,000. This cost would increase if additional vehicles from other services were outfitted with the equipment. These systems would also require annual maintenance and could incur ongoing operating costs.

Additionally, existing staff from one of the transit agencies would need to be supplemented and reorganized to handle reservation and dispatch responsibilities for all of the transportation providers. Three full-time (40 hours per week) and two part-time (25 hours per week) dispatchers could provide service 12 hours per day, seven days per week. The cost of employing five dispatchers would depend on the pay scale and benefits of the agency, but assuming a base full-time salary of $23,500 plus a 40 percent benefit markup and a base part-time salary of $14,700 plus a 10 percent benefit markup would result in total annual staffing costs of approximately $131,000 for this scenario. These costs for equipment and staff would be shared by all participating agencies. The local share of the total costs may be reduced through federal capital and operating grants, such as Sections

5307, 5309, 5310, and 5311 grants, and other funding sources, such as the Community Transportation Association of America and Easter Seals.

Although there are significant costs associated with initiating coordination under a brokerage agency, there are numerous benefits to such a technologically-advanced coordination effort. A central reservation system relying on reservation and dispatch software will increase the efficiency of the total system by spreading trips throughout the system and helping each agency to optimize their routes. Additionally, it will make the system easier to use for riders and more responsive to their needs. Since demand for transportation services exceeds the capacity of current services, these gains in efficiency will enable the system to meet more of the demand. Although, this may limit the ability of efficiency gains to reduce the number of vehicles operating in the region, increasing ridership may result in a lower cost per trip and a reduction in the distance traveled per trip. Sharing reservation and dispatch service also has the potential to reduce the per agency cost of managing their service by eliminating duplication of administrative services.

Many other communities have been moving to a brokerage style of coordination. For example, the State of Georgia implemented a brokerage system which resulted in better coordination between human services agencies and transit providers. This coordination created a more efficient use of transportation resources and increased access throughout the state.[5] Missouri has established a brokerage system for all Medicaid transportation. Sedgwick County, Kansas has a brokerage system operated by the Department on Aging. Transportation services are provided for the general public, elderly residents, and persons with disabilities. The brokerage provides some service directly and contracts for service with local taxis and other agencies. The ACCESS program in Pittsburgh, Pennsylvania serves seniors and persons with disabilities. Working with the Port Authority of Allegheny County, ACCESS has saved costs by sharing administrative costs and coordinating transportation services.

Although there is the potential to benefit both riders and agencies, this form of coordination is not likely in the near future in Boone County. Both the costs

[5] United We Ride at www.unitedweride.gov?Brokerage_Brochure.doc.

associated with a central reservation and dispatch center and the reliance of all providers on a single agency for their daily administration will make it difficult to attract agencies to this scenario before broader support for coordination has been created.

Columbia Transit Contracts with OATS for Paratransit Service

The majority of paratransit service in Boone County is provided by the two largest transit services—Columbia Transit and OATS. Columbia Transit provides ADA-paratransit service within three-quarters of a mile of its fixed routes, as required by the Americans with Disabilities Act. Service is provided in other areas of Columbia on a space-available basis. OATS provides paratransit service for the disabled and elderly in the remainder of the county and service for the general public in rural portions of Boone County. By having Columbia Transit contract with OATS to provide all paratransit service, these agencies may be able to provide a more integrated paratransit service at a reduced operating cost.

A coordinated system where Columbia Transit operated fixed-route service and OATS operated paratransit service in Boone County could form the basis for a coordinated regional transit system. This arrangement would require a negotiated agreement between Columbia Transit and OATS regarding the exact service OATS would provide for Columbia Transit to ensure the fulfillment of Columbia Transit's obligation to provide ADA-paratransit service in the vicinity of its fixed routes.

By contracting out their service to OATS, Columbia Transit may be able to reduce their paratransit operating costs or increase the amount of service for the same cost. Columbia Transit provides approximately 24,000 annual paratransit trips at a cost of $27.37 per trip. OATS provides paratransit service to the remainder of the county at a considerably reduced cost; OATS serves approximately 35,000 annual trips at a cost of $14.66 per trip. The cost to operate OATS is approximately $25 per service-hour while the cost of Columbia Transit's paratransit service is approximately $48 per service-hour. Columbia Transit's paratransit costs total approximately $650,000 per year. While it may not be possible for OATS to provide

the paratransit service for Columbia at their current costs, there is a potential for lower costs if Columbia Transit contracted with OATS for all or a portion of their paratransit operations. Additional cost savings could be experienced because of less duplication of service and greater operating efficiencies. This savings could make it possible for Columbia Transit to expand their ADA-paratransit service while still realizing savings.

Coordinated service between Columbia Transit and OATS has the potential to not only reduce operating costs, but also to benefit riders. A single operator providing the majority of general paratransit service in the county and increased coordination with the fixed-route system will make it easier for riders to travel throughout the county and transfer between systems. Operating paratransit service under one operator also has the ability to increase the efficiency of the system. Similar to the brokerage system, efficiency increases may enable OATS to provide the same number of trips with less travel and potentially fewer vehicles. Since there is unmet transit demand, this added capacity will likely result in a ridership increase rather than a reduction in vehicles, which has the potential to decrease cost and amount of travel required per trip.

There are many examples of communities where paratransit service is provided by a private nonprofit agency under contract to the local transit agency. In Boulder, Colorado, Special Transit provides the complementary paratransit service under a contract with the Regional Transportation District (RTD).

Although this coordination opportunity has the potential to reduce operating costs for Columbia Transit, the city has not expressed interest in purchasing transportation from other providers. OATS has expressed a willingness to explore opportunities to provide transportation services for other agencies under contract. Since this effort depends on the willing participation of both agencies, it is not likely in the near future. However, since it has the opportunity to reduce costs significantly, it may be one of the most alluring coordination opportunities.

Consolidation

Consolidation of Rural Transit Services

Consolidation of transit services in Boone County is the most intense form of coordination presented in this chapter. Under this scenario, one agency would assume responsibility and management of all or most of the other transportation providers in the county. Participating agencies would turn over their vehicles, equipment, and other transportation-related assets to the agency assuming control and cease to engage in transportation activities. Within Boone County, only Columbia Transit or OATS have the experience and infrastructure to manage a countywide consolidated service.

The consolidation of several different transportation providers under one agency would require that the designated agency expand its infrastructure and staff to accommodate the new responsibilities. The titles to all state-owned vehicles would need to be transferred to the consolidated service and all other vehicles would need to be donated, leased, or sold to the consolidated service. The consolidated agency would contract with agencies around the county to ensure that service is provided to meet the needs of their constituents. The ability to operate all or many of the county's transportation services may require the consolidated agency to expand their facility to accommodate a larger vehicle fleet and additional staff. The single agency would also need to hire more operations employees (drivers, mechanics, managers, and dispatchers) to operate and oversee the increased service. The increased service provision may also require increasing administrative staff. However, total employment has the potential to be less than the aggregate number of employees currently providing service because of the efficiencies from consolidate service.

A consolidated service will generate new costs, but it also has the ability to reduce the overall amount of resources spent on transportation service operations in the county. A consolidated service would benefit from the same reservation and dispatch software recommended for the brokerage system. The associated vehicle hardware alone is estimated to cost approximately $200,000 to equip Columbia Transit's and OATS' vehicles, plus the cost of the custom software.

The consolidated agency would also have increased operating costs as a result of expanding service to cover the transportation responsibilities of all of the other services, which would be offset by contracting to provide services to those agencies involved in the consolidation. The cost of providing this additional service largely depends on which agency services would be consolidated under—Columbia Transit or OATS. Current operating costs of OATS are significantly lower than Columbia Transit. Other agencies within the county span a wide spectrum of operating costs, ranging from $0.55 to over $75.00 per trip. Therefore, some agencies may see increases in the cost required to provide service to their constituents while others may see decreases. Again, cost per trip calculations are questionable for some agencies, as actual number of one-way trips annually may not be accurate.

Taking on responsibility for providing the specialized services of some of the agencies may make it difficult for either Columbia Transit or OATS to provide those services at their current operating costs. The total costs of consolidating all services are dependent on multiple factors, many of which are unknown at this time. While the efficiency gains of operating all services through one agency may reduce total transportation costs in the future, there will be considerable initial costs associated with the restructuring of the transportation services.

A single consolidated transportation agency has the potential to increase efficiency by reducing duplication of service and administration. These improvements may enable the consolidated agency to improve the capacity of the public transportation system and reduce the cost of operation per trip by providing more trips with the same amount of resources. This added capacity will improve accessibility for transit users and make it easier for them to travel to jobs and services. Centralizing all transportation services under an agency specifically designed for the delivery of such service will also enable human service agencies to focus on their primary missions.

Merced, California combined four publicly-funded transit services into a single consolidated countywide system. The consolidation eliminated duplicate service, allowed for a more efficient distribution of transportation resources throughout the county, and reduced costs through the elimination of duplicate administrative

costs. This reorganization of service also enabled the system to increase service provided within the county while reducing costs.[6] The State of Florida has established consolidated transportation services throughout the state, and the Montana Department of Transportation is in the process of establishing consolidated transportation systems.

The ability of the county to create a consolidated countywide transportation service depends on the participation of existing agencies. Since consolidation requires agencies to completely relinquish their role in transportation, it is understandable that agencies would be cautious about taking such a step. Based on the survey of transportation providers in Boone County, OATS and 16 smaller transportation providers were at least interested in the consolidation. Columbia Transit did not express interest in consolidation. As support for coordination grows in the county, it may be possible at a future date for OATS to consolidate with the smaller, rural transportation operations.

Develop a Regional Transit Authority for Columbia and Jefferson City

Another form of consolidating transportation services within the county would be to create a regional transit authority (RTA) covering Boone and Cole Counties. Each of these cities currently operates independent transit systems that do not provide intercounty service. The creation of an RTA could also potentially involve OATS to provide contract paratransit service throughout Boone and Cole Counties.

The ability of the two transit systems to come together as an RTA would require an act by the Missouri legislature. If such legislation were passed, the two organizations would then face the difficulty of merging two distinct, large transit operations. The RTA would have the jurisdiction to provide public transportation throughout Boone and Cole Counties. The RTA would continue to operate existing urban service in both cities and could begin to operate intercity, intercounty, and rural service. Under this scenario, the City of Columbia would lose some control over its transportation system as it would no longer be operated as a division of city government.

[6] TCRP Report 54, *Management Toolkit for Small Urban and Rural Transit Operators*, at onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_54-b.pdf.

The creation of an RTA has the potential to reduce the administrative costs for each transit agency, for example, by consolidating human resources, planning, or accounting departments. The expanded jurisdiction of an RTA over that of either individual agency would enable the agency the ability to provide more comprehensive regional service. The introduction of this additional service would increase the operating costs of the combined system. How much the added service would cost depends on how much service is added and the operating cost of the RTA. Columbia Transit currently operates at a cost of $65.15 per revenue-hour for fixed-route service and $48.13 per revenue-hour for paratransit service, but operating costs of the RTA may differ from this.

An RTA covering Boone and Cole Counties would provide transit-dependent populations with the ability to access jobs and services over a much larger area. The increased service area would also allow the RTA to garner more federal, state, and local transit funds to help cover the cost of the broader service. The development of an RTA would also provide increases in administrative efficiency by reducing duplicate administrative functions.

Cape Girardeau County recently consolidated their urban and rural transit service under the Cape Girardeau County Transit Authority. While it is too soon to evaluate the full benefits of this example, the county was motivated to combine services to increase ease of use and accessibility for users.

Since this study has largely dealt with the coordination of services within Boone County, it is unknown if JEFFTRAN (the transit agency in Jefferson City) would be interested in consolidating their service with Columbia Transit as an RTA. Columbia Transit has not expressed interest in consolidating their service. As stated previously, OATS is interested in providing contract paratransit service to other agencies. Improving coordination within the county may be the first step before coordination at a larger regional scale is possible.

Summary

Extensive coordination efforts are not likely to be implemented in the immediate future. This level of coordination requires the support of all the major service pro-

viders in the county. Although that support does not currently exist, there is support for more modest coordination efforts. By focusing coordination efforts in the county on initiating these more basic activities, it will be possible to build the foundation for these more extensive forms of coordination. Once the service providers have developed some experience with coordination and have seen its benefits, they may be more willing and interested in increasing to a higher level of coordination.

ENHANCED SERVICES

In exploring the opportunities and needs for the coordination of public transportation in Boone County, this study also revealed several opportunities and needs of enhanced services not necessarily associated with coordination. Although several of the identified enhanced services do not require coordination, coordination may provide strategies for attaining enhanced public transportation service in the county. It is also important to note that coordination of existing services alone does not have the ability to meet existing transit demand in the county. An assessment of transit demand conducted as part of this study revealed that 50 percent of maximum transit demand in Boone County is unmet with current service. Although it is not possible to meet 100 percent of maximum potential transit demand, it is possible to serve more of the demand. Coordination can help improve efficiency and provide more trips, but even with coordination efforts, unmet demand will exceed the capacity of the system. Expansion of service will also be required to serve more of the unmet demand.

Expand Columbia Transit Service Area in Columbia

Columbia Transit currently provides ADA-paratransit service within three-quarters of a mile of its fixed-route service as required by the Americans with Disability Act (ADA) with limited, space-available service in other areas of the city. While Columbia Transit's fixed-route and paratransit system provides access to many important destinations around the city, service is not available to other important destinations in the city, such as the dialysis treatment center. Providing extended fixed-route service within Columbia would result in broader paratransit service, which would benefit all transit riders. Unfortunately, some parts of the city may not be able to generate the level of ridership necessary to sustain fixed routes. For this

reason, Columbia Transit could expand just its paratransit service area to include the entire city.

Expanding paratransit service to cover the entire city would require additional funding to pay for the staff and vehicles necessary to provide the expanded paratransit service. Columbia Transit operates their paratransit service at an operating cost of $27.37 per trip and serves approximately 24,000 annual trips. Demand estimates for ADA paratransit service show that 15,000 to 32,000 additional trips could be made if service were available throughout the city. An additional 15,000 trips would cost about $400,000 annually. If Columbia Transit served the additional 32,000 trips by expanding service, their paratransit costs would increase by approximately $875,000 to $1.5 million. This increase can be seen as the maximum increase in ridership and costs possible because it is unlikely that expanding the service area will meet all of the predicted ADA demand. Additionally, Columbia Transit would potentially need to double their paratransit fleet to serve the additional area, resulting in capital costs for the purchase of new vehicles.

As is the case with all transit agencies, Columbia Transit is tasked with providing transit service with levels of funding incapable of supporting services to meet all transit demand. Therefore, it will be difficult for Columbia Transit to take on service expansions without first identifying new sources of revenue to cover the costs of adding service. However, if Columbia Transit contracted with OATS to provide paratransit service as discussed previously, it is possible that the service could be expanded with no additional cost.

Expand Columbia Transit Service to Include Boone County

Columbia Transit, as a city transit system, currently limits its operations to destinations within the City of Columbia. By expanding the service area of Columbia Transit to include all of Boone County, it would be possible to create a countywide transit system. Increasing its service area to include Boone County would represent a major service expansion. The ability to serve the remainder of the county would require the development of a general demand-response or flex-route service for the outlying county.

The cost of Columbia Transit introducing countywide demand-response service is considerable. Columbia Transit operates its paratransit service at a cost of $27.17 per trip. A rural transit demand estimate predicted the county would generate up to 131,000 rural transit trips. Approximately 59,000 of these trips are estimated to be non-program trips, which includes trips taken by seniors, persons with disabilities, and the general public. The remaining 72,000 trips are estimated to be program trips, or trips associated with specific programs or services. If Columbia Transit covered all of these trips at their current paratransit operating costs, it would cost the agency approximately $3.5 million. This estimate is the upper bounds of possible ridership and cost increases. The actual costs would likely be lower since Columbia Transit would likely not capture 100 percent of the estimated demand and other transportation services already serve some of these trips. Columbia Transit could further reduce this cost by contracting out its paratransit service to OATS, which operates rural paratransit service at nearly half the cost ($14.66 per trip). To meet the estimated rural transit demand, Columbia Transit would incur capital costs associated with the purchase of additional paratransit vehicles.

The high estimated costs associated with expanding Columbia Transit's service to cover all of Boone County makes this improvement unlikely in the near future, especially since transportation providers are already serving rural Boone County. The need for more extensive and integrated paratransit service in the outlying county could also be met through better coordination, which has the ability to increase the capacity of existing service and make transferring between services easier. Sharing the responsibility for providing and funding the service across multiple agencies will also make service improvements more palatable.

Extend Columbia Transit's Hours and Days of Operation

Existing transportation services have been unable to accommodate the demand for transit in Boone County. Besides expanding the service area, more of the demand could be met by expanding the hours and days of operation. Expanding Columbia Transit's evening service and introducing Sunday service would provide greater transportation choices, especially for residents with nontraditional work schedules.

Similar to expanding the service area, expanding Columbia Transit's hours of operation would increase its cost of operation. Columbia Transit operates its fixed-route service at an average cost of $65.15 per revenue-hour and a marginal cost of $39.85 per revenue-hour. The bus system already operates during evenings on Thursday through Saturday. Extending operations by four hours per evening (until approximately 10:30 p.m.) on Monday through Wednesday on Routes 1, 2, 3, 4, and 6 would add approximately 6,240 revenue-hours of service. This service improvement would cost approximately $250,000 per year. Adding Sunday service from 10:00 am. to 5:00 p.m. on Routes 1, 2, 3, 4, and 6 would add approximately 3,640 revenue-hours of service, which would cost approximately $145,000 per year. Operating paratransit service during these times would further increase the cost of operating evening and weekday service.

Intercity/Commuter Bus Service

Creating links via public transportation to other cities widens the job market available to Boone County residents and provides more transportation choices for commuting. Although Greyhound provides trips to Kansas City and St. Louis, Jefferson City—the closest city to Columbia (31 miles)—is not accessible by any public or private bus. Even without coordinating with JEFFTRAN (Jefferson City's transit agency), Columbia Transit could provide intercity service. Intercity service would be even more effective if it was coordinated with JEFFTRAN and Jefferson City.

If Columbia Transit provided eight trips between Columbia and Jefferson City over 12 revenue-hours per day and operated on weekdays, the service would add approximately 3,000 annual revenue-hours. Since Columbia Transit operates at a marginal cost of $39.85 per revenue-hour, the additional service would cost an estimated $120,000 per year. Although this service could expand commuting options for Boone County residents, it is unlikely that Columbia Transit will attempt long-distance service before expanding its service within the county.

Columbia Transit Coordinates with Private Transportation Companies

There is also an opportunity for expanding transportation service through coordination between Columbia Transit and private taxi companies. Access to public transportation in Columbia is limited to Columbia Transit's hours of operation. If Columbia Transit started a taxi voucher program, it could offer customers reduced-fare cab rides during the hours it was not operating. This strategy would provide limited night and weekend service without directly operating additional transit service. Through a taxi voucher program, Columbia Transit could potentially negotiate a set fare for voucher holders with a taxi company. The agency would then sell vouchers at a reduced cost to customers, covering the difference between the cost of the trip and the cost of the voucher.

The cost of a taxi voucher program depends on cost of the taxi service. Allowing multiple taxi companies to bid for the contract will help the transit agency to negotiate the best price possible for the service. The transit agency can also closely manage the costs by limiting how many vouchers it will make available to the public. The creation of a taxi voucher program is not likely in the near future since Columbia Transit has not expressed interest in purchasing transportation from other service providers and there are opportunities to use additional funding to enhance their directly-operated service.

Summary

Improving public transportation service in Boone County will enable more residents to access jobs, services, and stores on their own schedules. Regardless of what types of coordination Boone County service providers decide to pursue, continually developing services to better meet the needs of residents should remain a goal. Columbia Transit has not conducted a thorough operational analysis for a number of years. One strategy to improve service would be to complete an operational analysis and transit development plan to determine if there are changes which could be made to better serve the community. It may be possible to restructure the system to serve new areas or better serve existing areas by eliminating some services that are duplicated or inefficient. This will enable Columbia Transit to serve more of the unmet transit demand in the city and potentially meet

some of the demand in the county. In some cases, coordination may provide a means to achieve the identified enhanced services.

CONCLUSION

Coordination can be a difficult process, especially when agencies are coming together for the first time. There are valid reasons why each agency should come to the table cautiously. Coordinating with other agencies has the potential to jeopardize the service each agency individually provides, potentially leaving their customers and constituents stranded. Maintaining the status quo may not be the most efficient use of transportation resources across the county, but at least each agency knows what to expect. Despite the perceived risks associated with coordination, there are also substantial benefits associated with coordination, both for riders and agencies. Riders can benefit from a unified system that can provide seamless and often increased service. Agencies can improve their efficiency and costs by reducing the duplication of service and administration. In some places coordination has enabled agencies to serve the same number of trips with fewer vehicles. In Boone County, since unmet transit demand appears high, it will be possible to increase capacity and serve more trips with the same amount of resources.

Few if any Boone County service providers are ready for extensive coordination activities, but most, including Columbia Transit and OATS, are at least interested in exploring more basic coordination efforts. These basic coordination efforts cannot deliver the same benefits as the more extensive coordination scenarios, but they will provide more modest benefits and opportunities to work together. As agencies develop relationships and become more familiar with one another's services, they may become willing to try more advanced levels of coordination. Building off of the foundation laid by the basic coordination of joint public relations, it may be possible for the agencies to develop into a fully coordinated countywide system under a brokerage agency some day. With each step toward a more coordinated system, the service available in the county stands to improve, providing better service to riders.

Table XIV-1 provides a summary of the various coordination strategies. For each strategy, the relative cost, level of effort, and potential benefits are identified. For most, the cost of implementation will depend on the specific approach to implementation of that strategy. For example, establishment of a consolidated telephone reservations and dispatch center could have a very low cost if it is set up with one of the existing transit providers. If the center is set up in a new location with new staff, the costs for office space, equipment, and staff could be significant.

Table XIV-1
Summary of Coordination Strategies

Strategy	Relative Cost	Level of Effort to Implement	Potential Benefits
Inclusive Brochure	Low	Moderate	Better information for users
Resource Manual	Low	Moderate	Easier sharing of information Better service for users
Common Brochure	Moderate	Moderate	Better information for users
Information Phone Line	Low	Low	Single point of contact Better service for users Potential cost savings
Bicycle/Pedestrian Facilities	Low to Moderate	Low	Better access for passengers
Brokerage/Lead Agency	Moderate	High	Efficiency Better service Potential cost savings
Contract for Paratransit Service	Low	High	Efficiency Potential cost savings
Consolidate Services	Low	High	Efficiency Increased service opportunities for users Potential cost savings
Regional Transit Authority	Moderate	High	Regional service Increased service
Expand Columbia Transit Service Area	High	Moderate	Additional service
Extend Columbia Transit Hours and Days of Operation	High	Moderate	Additional service
Commuter Bus Service	Moderate	Moderate	Additional regional service
Coordinate with Private Companies	Low	Low	Increased opportunities for service Potential cost savings

Chapter XV

CHAPTER XV
Implementation Steps

This chapter briefly describes the next steps toward implementation of coordination strategies. As mentioned in earlier chapters, some coordination activities are already occurring among various agencies in Boone County. This report has provided the inventory of existing transportation resources, the needs assessment for transportation services, and potential coordination strategies. The community must now determine which coordination strategies to pursue and responsibilities for implementation.

REQUIREMENTS FOR COORDINATED TRANSPORTATION PLANS

SAFETEA-LU includes a requirement that any funding for projects under the Federal Transit Administration (FTA) Section 5310 program, the Jobs Access Reverse Commute (JARC) program, and the New Freedom program must be derived from a locally developed coordinated human services transportation plan. Some of the human services transportation providers in Boone County may be eligible for funding under the Section 5310 program, while some of the enhanced services discussed in Chapter XIV may be eligible for funding under the JARC or New Freedom program. Without support of a local coordinated transportation plan, these activities will not be eligible for funding under these specific federal programs.

Although funding for urban area public transit programs may not require a coordinated human service transportation plan, local transit services are expected to be part of the local plan to meet the needs of low-income households, seniors, and those with disabilities.

As the coordination strategies are selected and implementation actions identified, the process should consider the requirements of these specific funding programs to ensure that the coordination activities are eligible for the widest range of potential funding sources.

PARTNERSHIPS

The first step toward implementation of any new coordination strategies will be the formation of partnerships. The specific coordination strategies will depend on which agencies are interested and willing to participate. The Mid-Missouri Transportation Alliance should be seen as a starting point toward formation of partnerships to implement any coordination strategies. Through the Alliance, potential partnerships may be identified. The partnership could be formed by the entire Mid-Missouri Transportation Alliance or a smaller group of agencies interested and willing to pursue any of the specific strategies. To begin the process, these partnerships may be informal, but to implement some of the strategies may later require formalization of the partnership through a Memorandum of Agreement or contract. The more formal arrangement will not be necessary until required to implement a specific strategy.

SELECT COORDINATION STRATEGIES

This study has identified potential coordination strategies for Boone County. The community must now determine which specific strategies to pursue and the priorities for implementation. Selection of specific strategies will depend to a large extent on which agencies are interested and willing to participate. For example, sharing of vehicles and joint purchasing could occur among two or more smaller transportation providers while development of a one-call center for all transportation services will require the participation of Columbia Transit and OATS. As the partnerships are formed, many of the coordination strategies will be identified by the nature of the particular partnership.

It will be important to determine priorities for implementing the various coordination strategies. Some may be implemented easily with little or no cost, while others may require a significant investment of time, resources, and funds. Some strategies may require incremental steps to implement the full strategy. As an example, consolidation of services may require initial steps of cooperation before consolida-

tion can be achieved. Prioritization will be necessary to develop an implementation plan.

IMPLEMENTATION PLAN

The coordination implementation plan will identify those steps necessary to implement each of the selected coordination strategies. For each selected coordination strategy, the implementation plan should describe the strategy to be implemented, the specific goal to be achieved, the steps necessary for successful implementation, the responsible individual or agency, and timing for each of the implementation steps. Care should be taken to ensure that the timing for implementation is realistic and that there are no conflicts among implementation steps for different strategies. A comprehensive schedule should be developed showing all implementation steps so that coordination of implementation activities can occur. It would be beneficial to have a single point of contact to monitor and oversee all implementation activities while responsibilities for specific steps are assigned to the responsible agency. This may be an appropriate role for the Mid-Missouri Transportation Alliance.