

CATSO 2030 Long Range Transportation Plan
and
City Amendments to Major Roadway Plan

March 6, 2008

Session Objectives

- Brief Council on Completion of CATSO 2030 Long Range Transportation Plan (replaces 2025 Plan)
- Brief Council on update of City "Comprehensive Plan" to include CATSO Major Roadway Plan amendments during period February 2006-December 2007.

Preliminaries ...What is "CATSO"?

"Columbia Area Transportation Study Organization"
Functions as the Metropolitan Planning Organization
(MPO) for the City of Columbia and central Boone
County.

An "MPO" is an organization, approved by the
governor, required to carry out transportation
planning in urban areas of a population of 50,000
and larger that use federal funds for
transportation investments.

CATSO membership and organization

CATSO members:

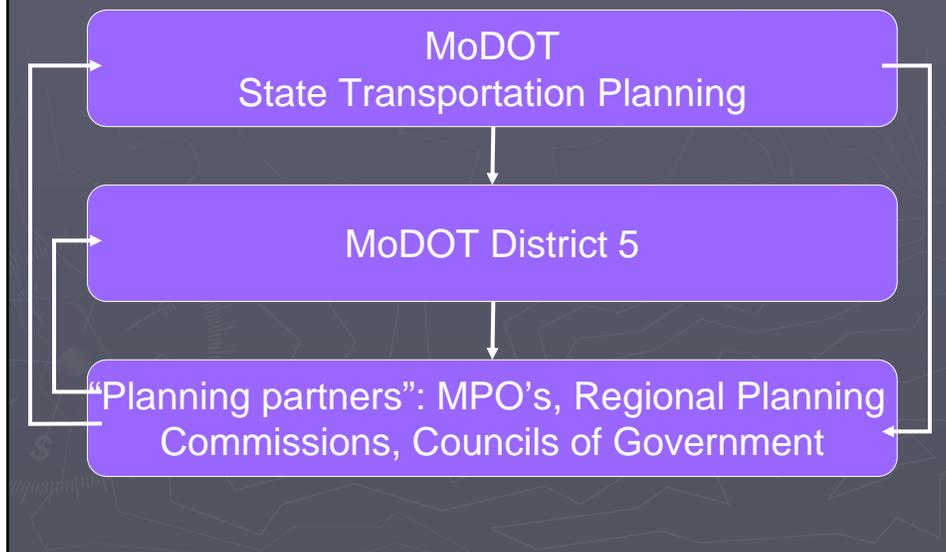
- ✓ Boone County
- ✓ City of Columbia
- ✓ Missouri Department of Transportation (MODOT), and
- ✓ (ex-officio) Federal Highway Administration (FHWA),
Federal Transit Administration (FTA), and University of
Missouri.

CATSO is directed by a Coordinating Committee which
assigns tasks to a Technical Committee and CATSO staff.
The City Department of Planning and Development
provides staff for CATSO. Federal Consolidated Planning
Grant (CPG) funds are used for planning on a 80:20
(federal: local) matching basis.

CATSO Organization



MoDOT Transportation Planning Organization



CATSO Planning Products

The Long-Range Transportation Plan (LRTP) – the official, multi-modal transportation plan adopted by the MPO

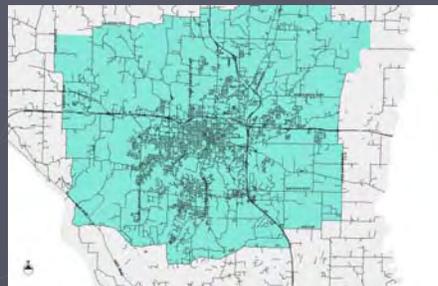
The Unified Planning Work Program (UPWP) – the statement of work

The Transportation Improvement Program (TIP) – prioritized listing/program of transportation projects for four-year period

Special Studies as Assigned – Most frequent activity is amendments to the Major Roadway Plan

Planning jurisdiction

CATSO's planning jurisdiction is the metropolitan planning area, ("metro area"). The *minimum* jurisdictional area is defined as the existing urbanized area plus contiguous area expected to become urban within 20 years. "Urban": an area having an average of 1,000 persons per square mile.



Other MPOs

There are 378 metropolitan planning organizations (MPOs) nationwide. Seven of them are in Missouri:

CAMPO Capitol Area Metropolitan Planning Organization
(Jefferson City)

CATSO Columbia Area Transportation Study Organization
(Columbia)

East-West Gateway Council of Governments (St. Louis)

JATSO Joplin Area Transportation Study Organization
(Joplin)

MARC Mid-America Regional Council (Kansas City)

OTO Ozark Transportation Organization (Springfield)

SJTSO St. Joseph Transportation Study Organization (St. Joseph)

Required content of MPO Long Range Plans

Plans must include 9 elements

- ✓ 1) Projected demand;
- ✓ 2) Existing and proposed facilities;
- ✓ 3) Strategies to improve performance;
- ✓ 4) Assessment of capital investment strategies;
- ✓ 5) Cost estimates of proposed improvements;
- ✓ 6) Potential environmental mitigation activities;
- ✓ 7) Pedestrian walkway and bicycle facilities;
- ✓ 8) Transportation and transit enhancements; and
- ✓ 9) A financial plan.

Part 1

Projected Demand

Population and Employment Projection

Growth category	2005	2030	Net change 2005-2030
Metro Area Population	113,698	156,836	+34,507 (+30.3%)
Employment - Total	68,464	101,890	+33,426
Commercial: Retail	16,959	22,530	+5,571
Commercial: Non-Retail	13,406	23,016	+9,610
Office	13,600	23,448	+9,848
Industrial/Mfg	3,407	6,068	+2,661
Warehouse/Storage	1,325	2,124	+799
Hospital/Medical	11,570	14,867	+3,297
University of Missouri/Colleges	8,197	9,837	+1,640

Travel demand model

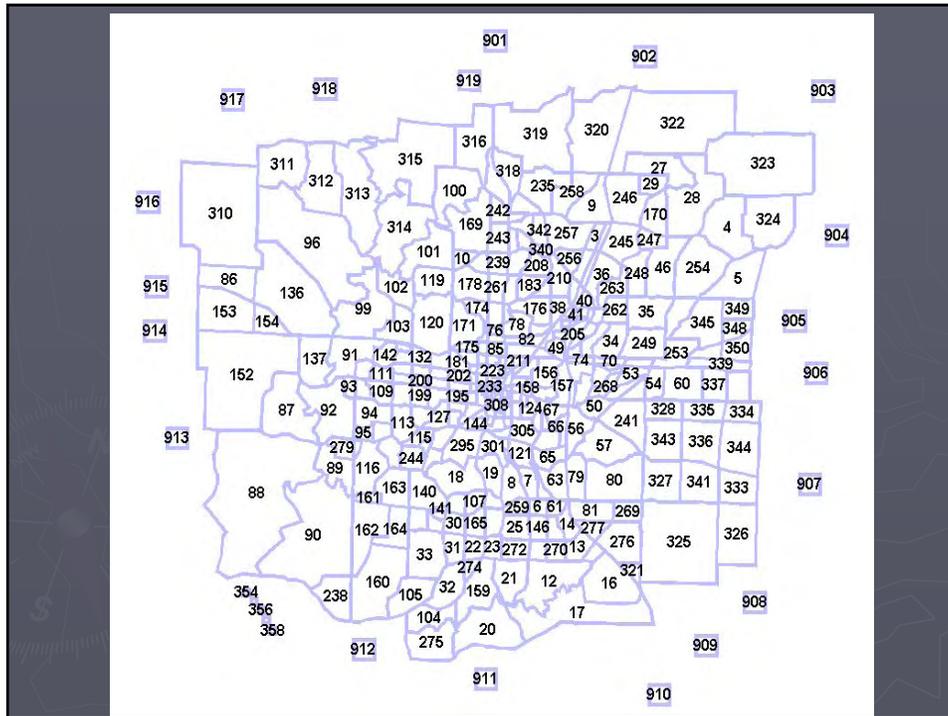
CATSO uses a Caliper Corporation TransCad travel demand model to estimate year 2030 24-hour traffic volumes on existing and future roadway corridors.

The model is based on estimates of existing and future land use by type within 377 **transportation analysis zones (TAZs)** in the metro area.

The model performs calculations that estimate daily vehicle trips produced and attracted by TAZ units, distributes vehicle trips by TAZ of origin and destination, and assigns traffic volumes to roadways in the network.

Transportation Analysis Zones

- Polygons bounded by streets or other physical boundaries.
- 19 land use categories.
- Estimates of housing units and square feet of non-residential space is entered by staff and consultant.
- Estimates are based on existing land use, future land use plan, projected employment by sector, roadway characteristics, physical-environmental constraints, and presence/absence of public sewer.



Dissecting a "TAZ"

Example: TAZ #249

Location: Ballenger-Clark Lane-Lake of the Woods Road-Rice Road.

Assumptions (for modeling purposes): 629 dwelling units in 2005; projected 1,444 total d.u.s in 2030; 103 retail employees 2030; 138 "non-retail" employees by 2030.

- Primarily a traffic "producing" or "sending" area rather than a traffic "attracting" area.

Part 2

Existing facilities

2. Existing facilities data – major roadways

AGENCY	Miles of Arterial Streets	Miles of Collector Streets
MoDot	64.49	32.76
Boone County	26.30	76.83
City of Columbia	41.42	85.95
Totals (327.75 miles of major roads)	132.21 miles	195.54 miles

Existing facilities data - roadways

Approximately 980 miles of roadway, total of all classifications, in the Metro area. This number is double the figure reported in 2001 (490 miles).

Breakdown by maintenance jurisdiction:

- MoDOT: 204 miles*
- City of Columbia: 491 miles
- Boone County: 280 miles

* expressway-freeway figures are in lane-miles; all other roadways are in center-line miles

Existing facilities data – bicycle routes

Facility type	Class I Bicycle routes used exclusively by bicycles and pedestrians	Class II Bicycle lanes within existing public streets	Class III Signs on existing public streets designating bicycle routes	Totals
Length in miles	23.35 miles of trails (not including "pedways")	12 miles	16 miles	51.35 miles

Existing facilities - Transit

Columbia Transit

- 7 fixed routes
- 17 fixed-route buses
- 11 paratransit vehicles
- Trend - recent growth in riders after decline from historic high

School bus transit

- 141 daily buses, 500+ routes carrying 8,000 students daily

Existing facilities – Transit, cont'd

Private transit services

- *Boone County Coordinated Transportation Services Study (2006)*: 59 transportation and human service agencies provide some form of transportation services in Boone County.
- OATS, Incorporated is major private not-for-profit provider, 15+ vehicles, door-to-door service with elderly and disabled a priority.

Existing facilities - Airport

- Two runways
- One commercial airline; "essential air service"
- 21,000 sq ft leasable area in terminal
- Air freight service by Airborne Express
- Fixed-based operator services (charters, rentals, maintenance & repair, fuel, flight instruction) by Central Missouri Aviation

Existing facilities - Rail

- Columbia terminal RR (COLT): 21.34 miles of main line track
- 21 customers
- 25 MPH freight speed per Federal Railway Administration
- Increase in service, both customers and volumes, since 1999
- 39 public, 23 private grade crossings

Part 3

Strategies to Improve Performance

Examples of strategies to improve system performance – from *Imagine Columbia's Future*

- *"Maximize the capacity of existing roadway systems by having the City and County adopt and implement programs for traffic signal optimization, intersection improvements, turn lanes, effective access management, etc."*
- *"Encourage the long-term growth of non-motorized transportation habits and skills by ensuring that all local residential streets receive either sidewalks or traffic calming elements. This will allow both children and adults to safely walk or wheel around their neighborhoods and develop healthy transportation habits."*
- *"Expand the public transit system, and identify and fill in existing gaps in that system to include longer hours of service, more frequent service, and greater coverage of the city."*
- *"Use the City's development planning process to promote socio-economically diverse, mixed-use neighborhoods that are supported by citywide bicycle, pedestrian, and transit systems to reduce the need for automobile commuting."*

Examples of strategies to improve system performance – From Missouri's Long-Range Transportation Plan

- Traffic management systems
- Coordinated signal timing
- Coordinated emergency management

Part 4

Assessment of capital investment and other strategies

Examples of assessment of capital investment strategies – from *Imagine Columbia's Future*

- "Develop and adopt a clear area-wide major roadway plan that carries the commitment of the City and County."
- "Enhance the future use of the airport by improving its appearance and functionality"
- "Increase connectivity by flying to major airline hubs and adding other airlines with a variety of flight times."
- "Give proper funding, priority, and support to repairing, connecting, and expanding the city sidewalk system. Increase the pace of sidewalk improvements."

Examples of assessment of capital investment strategies –From *Missouri's Long-Range Transportation Plan*

- Performance- and results-based engineering and design, e.g., design-build
- Radical cost control, e.g., "practical design"
- Increased competition
- Economic development cost-share program

Part 5

Cost estimates of proposed improvements

CATSO Transportation Needs 2007-2029

Roadway Classification	MoDOT	Boone County	Columbia	Total
Interstate	\$278,319,000	\$0	\$0	\$278,319,000
Freeway/Expressway	\$31,343,000	\$0	\$0	\$31,343,000
Major Arterials	\$26,235,040	\$6,336,000	\$101,244,000	\$133,815,040
Minor Arterials	\$0	\$87,680,000	\$73,568,000	\$161,248,000
Major Collectors	\$0	\$28,512,000	\$78,800,000	\$78,800,000
Neighborhood Collectors	\$0	\$35,117,280	\$21,570,000	\$56,687,280
Streets Sub-total	\$335,897,040	\$157,645,280	\$275,182,000	\$768,724,320
Other				
Transit Vehicles	\$0	\$0	\$33,074,635	\$33,074,635
Bicycle Facilities	\$0	\$0	\$15,397,000	\$15,397,000
Pedestrian Facilities	\$0	\$0	\$21,500,000	\$21,500,000
Total in 2007 \$	\$335,897,040	\$157,645,280	\$345,153,635	\$838,695,955
Adjusted Total through 2029	\$643,614,230	\$302,064,658	\$649,656,077	\$1,595,334,965

Roadway projects included in the cost estimates

- MoDOT: 9 projects (*includes \$278 million Improve I-70 project and \$59 million East Columbia Study preferred alternative as "illustrative" projects*)
- Columbia: 45 projects (*all financially constrained*)
- Boone County: 17 projects (*\$28 million Akeman Bridge/Wilhite Road project "illustrative"*)

Tentative estimation of future roadway costs

Street classification	Estimated cost per linear foot
Neighborhood Collector	\$500/L.F.
Major Collector	\$ 600/L.F.
Minor Arterial	\$ 900/L.F.
Major Arterial	\$ 1100/L.F.

Part 6

Potential environmental mitigation activities and areas

Examples of potential environmental mitigation activities and areas – from *Bonne Femme Watershed Plan*

- Purchase structures to correct flooding problems in existing neighborhoods
- Consider a plan to provide special protections in karst and groundwater recharge areas
- Provide mechanisms to set-aside land in non-LID [low-impact design] developments for parks or green space, especially in conjunction with a stream buffer

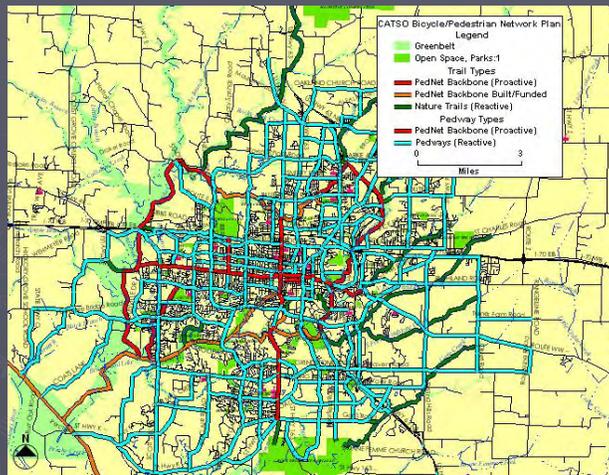
Example of potential environmental mitigation activity or area

- The Natural Resources Inventory, partly funded by federal transportation funds, among other purposes will help identify environmental mitigation areas

Part 7

Pedestrian Walkway and Bicycle Transportation Facilities

Bicycle/Pedestrian Network Plan



Bicycle/Pedestrian Network Plan

Updates to CATSO Bicycle and Pedestrian Network – from the *GetAbout Columbia Project*

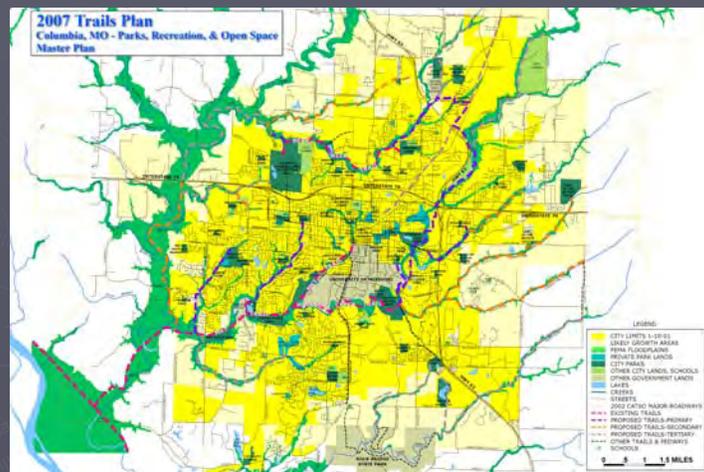
- Staff identified approximately 85 segments of bicycle and pedestrian network added to the CATSO plan by the *Infrastructure Working Plan*



Part 8

Transportation and Transit Enhancement Activities

Example of Transportation Enhancements – 2007 Trails Plan



Example of Transportation Enhancements –
From *Imagine Columbia's Future*

"Develop a streetscape plan through the use of landscape, site amenities, art, and thematic elements to create memorable and attractive boulevards and streetscapes (e.g., place utilities underground, clean up Business Loop and Providence, regulate billboards, and develop gateway/entryway plan)."

Part 9

Financial Plan

Highway and Transit Revenues by Source: 2007-2029

Mode Category	MoDOT	Boone County	Columbia	Total	% of Total
Total Roadways	\$43,508,000	\$308,615,186	\$465,566,328	\$817,689,514	89.9%
New Construction	\$43,508,000	\$130,615,186	\$282,965,730	\$445,023,916	48.9%
Maintenance	NA	\$178,000,000	\$182,600,598	\$372,665,598	41.0%
Total Transit	\$2,625,000	\$0	\$88,869,700	\$91,494,700	10.1%
Capital	\$0	\$0	\$28,881,040	\$28,881,040	3.2%
Operating	\$2,625,000	\$0	\$59,988,660	\$62,613,660	6.9%
Total Revenues	\$46,133,000	\$308,615,186	\$554,436,028	\$909,184,214	100.0%
Percent of Total	5.1%	33.9%	61.0%	100.0%	

Transportation Plan Projects and Revenue

Costs 2007 - 2029	MoDOT	Boone County	Columbia	Total
Construction Total				
Roadways*	\$28,110,440	\$129,133,280	\$275,182,000	\$432,425,720
Bicycle/Pedestrian Facilities**	\$0	\$0	\$36,897,000	\$36,897,000
Transit Total	\$0	\$0	\$75,268,803	\$75,268,803
Capital	\$0	\$0	\$33,074,635	\$33,074,635
Operating	\$2,625,000	\$0	\$42,194,168	\$44,819,168
Total Maintenance (Streets)	NA***	\$174,760,699	\$172,014,638	\$346,775,337
Grand Total	\$30,735,440	\$303,893,979	\$559,362,441	\$893,991,860
Revenue	\$46,133,000	\$308,615,186	\$554,436,028	\$909,184,214
Surplus/Deficit	\$15,397,560	\$4,721,207	-94,926,413	\$15,192,354

Long-range plan next steps

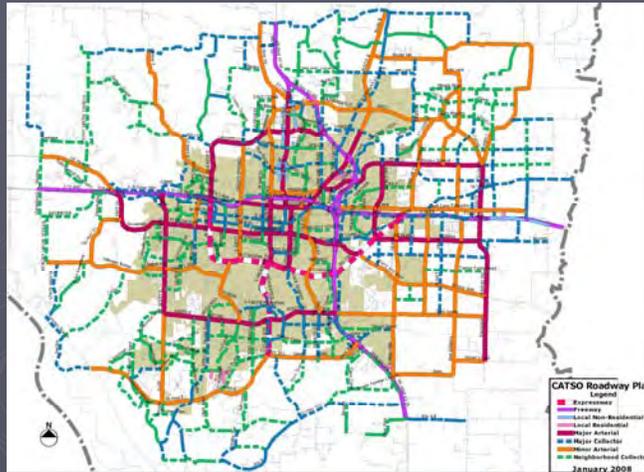
CATSO Long Range Transportation Plan –
Public involvement meeting March 19, 2008
(5:30 PM, mezzanine)

Public hearing May 22, 2008 2:30 PM

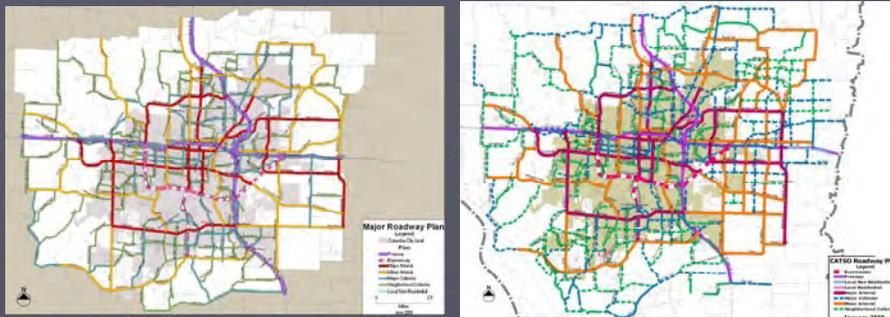
Major Roadway Plan

Amendments to City
"Comprehensive Plan"

CATSO Major Roadway Plan



City MRP – June 2005 (left) compared to CATSO MRP (right)



Major Roadway Plan

Objective: Make Columbia's "Comprehensive Plan" current by considering latest CATSO MRP amendments as part of the City of Columbia's Comprehensive Plan.

Significance: Subdivision Regulations, Sec. 25-35(2) requires subdivision compliance with City "...comprehensive plan... including the showing of all streets..."

Recent CATSO MRP Amendments

1. **East Columbia Area amendments (SE and NE).** Adds street connectivity in an area with major growth potential.
2. **Existing County collector streets.** Adds all existing county public roads in Metro area to the MRP.
3. **Route K/Scott Blvd area.** Adds street connectivity to area with major growth potential and access/circulation challenges.
4. **East Boone/Route Z area amendments.** Adds street connectivity to area with growth potential.
5. **Starke Avenue re-alignment.** Returns future Starke Avenue upgrade to the existing road alignment; avoids conflict with Fairgrounds.
6. **Gans Road re-alignment.** Re-aligns Gans from a terminus at Winding Trail to a connection with Rolling Hills.
7. **Sorrels Overpass Road re-alignment.** Shifts alignment to conform to Monterrey Hills subdivision street pattern.
8. **Rangeline Street (Hwy 763) corridor local non-residential roads.** Adds intersecting and parallel roads to manage access to and from commercial tracts.

Recent Major Roadway Plan Amendments –
Northeast Area
(#6 and #7 aligned to 4-way intersection)



Recent Major Roadway Plan Amendments –
Southeast Area (#14, #15, #16 not
approved)



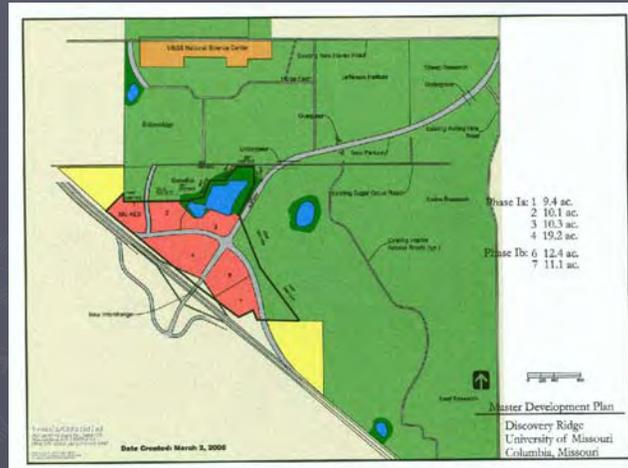
Recent Major Roadway Plan Amendments – Scott Boulevard/Route K study area



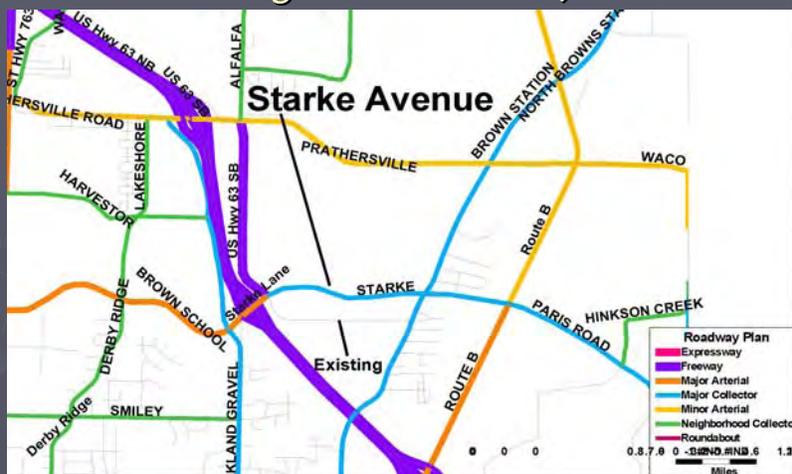
Recent Major Roadway Plan Amendments – East Boone County/Route Z Study Area



Recent Major Roadway Plan Amendments – Gans Road

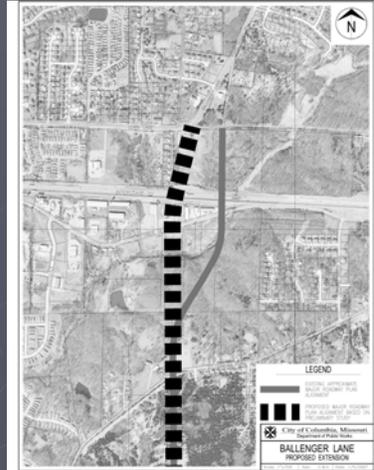


Recent Major Roadway Plan Amendments – Starke Avenue re-alignment (*existing alignment chosen*)

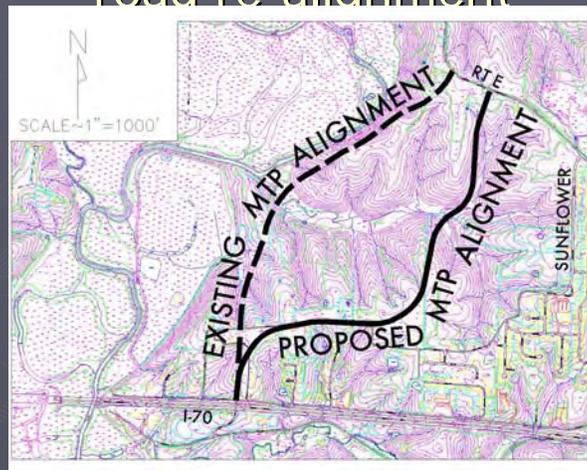


Recent Major Roadway Plan Amendments

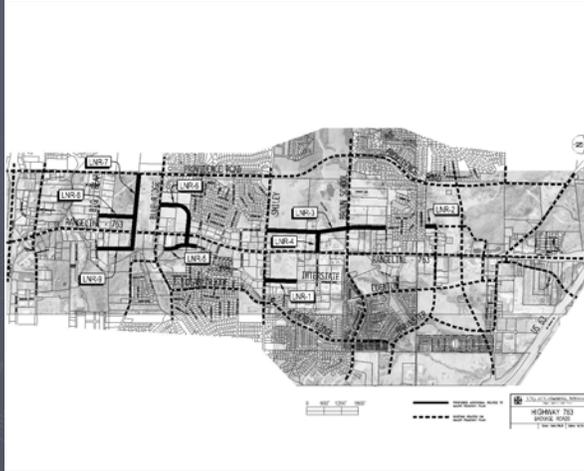
Re-alignment of
Ballenger over I-70



Recent Major Roadway Plan Amendments – Sorrel's Overpass road re-alignment



Rangeline/Highway 63 Non-residential local streets



Pending CATSO Major Roadway Plan Amendments

1. Re-alignment of future Harvester/Derby Ridge extensions in vicinity of Auburn Hills Park (public hearing May 22, 2008). *Responds to City Council action and neighborhood concerns.*
2. New collector street between St. Charles Road and Route WW (public hearing May 22, 2008). *Responds to request by organizers of Keene Avenue Medical District Community Improvement District (CID).*

Conclusion & Summary

- Upon direction from Council, City Planning and Zoning Commission will hold hearings on the recent changes to the CATSO Major Roadway Plan for purposes of updating the City's official plan