

Introduced by \_\_\_\_\_ Council Bill No. R 160-13

**A RESOLUTION**

authorizing an agreement with DoubleMap, Inc. for Automatic Vehicle Location (AVL) equipment and related software and services for the Columbia transit system; authorizing an agreement with QuarkWorks, LLC for professional services for development of mobile applications to display bus location data from the AVL system.

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

SECTION 1. The City Manager is hereby authorized to execute an agreement with DoubleMap, Inc. for Automatic Vehicle Location (AVL) equipment and related software and services for the Columbia transit system. The form and content of the agreement shall be substantially as set forth in "Exhibit A" attached hereto and made a part hereof as fully as if set forth herein verbatim.

SECTION 2. The City Manager is hereby authorized to execute an agreement with QuarkWorks, LLC for professional services for development of mobile applications to display bus location data from the AVL system. The form and content of the agreement shall be substantially as set forth in "Exhibit B" attached hereto and made a part hereof as fully as if set forth herein verbatim.

ADOPTED this \_\_\_\_\_ day of \_\_\_\_\_, 2013.

ATTEST:

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Mayor and Presiding Officer

APPROVED AS TO FORM:

\_\_\_\_\_  
City Counselor



**AGREEMENT BETWEEN THE CITY OF COLUMBIA  
AND DOUBLEMAP, INC.  
FOR THE INFORMATION TECHNOLOGY UPGRADES TO THE COLUMBIA  
TRANSIT SYSTEM**

This Agreement is entered into on this \_\_\_\_ of \_\_\_\_\_, 2013 ("Effective Date"), between the City of Columbia, Missouri, a municipal corporation of the State of Missouri ("CITY"), and DoubleMap, Inc., 748 E Bates St, Indianapolis, IN, 46202, a corporation organized in the State of Indiana with authority to transact business within the State of Missouri (hereinafter "CONTRACTOR"). CITY and CONTRACTOR are each individually referred to herein as a "Party" and collectively as the "Parties".

WHEREAS, the United States Department of Transportation has awarded a grant (hereinafter "Grant") to the CITY and the Grant includes funding for information technology upgrades to the Columbia Transit System (hereinafter "Project");

WHEREAS, CITY, as part of the federal grant, desires to purchase additional equipment, licenses, and other services for CITY's bus system as more fully described in this Agreement (hereinafter "IT Project");

WHEREAS, CITY has advertised for proposals, has received said proposals, analyzed same and selected CONTRACTOR for the Project;

WHEREAS, Section 2-459 of the City Code of Ordinances provides for the authority of the purchasing agent to contract for the purchase of supplies, materials, equipment and services;

WHEREAS, Section 2-461 limits the authority of the purchasing agent to contract when the length of the original term plus all extended terms exceeds five (5) years and three (3) months;

WHEREAS, the City Council has the authority to authorize a contract for longer than five (5) years and three (3) months;

WHEREAS, the CITY intends to use the equipment, licenses and services for the Project for a period of time longer than five years and three months;

WHEREAS, because it is important to the community to have the AVL-GPS system operational when the students arrive in August of 2013, the Purchasing Agent has executed an Agreement for the purchase of some of the equipment, licenses and services related to this Project. All other portions of the equipment, licenses and services related to this Project shall be addressed by this Agreement. In addition, this Agreement shall restate and replace Purchasing Contract #19/2013;

NOW, THEREFORE, the Parties hereto, for good and sufficient consideration, the receipt of which is hereby acknowledged, intending to be legally bound, do hereby agree as follows:

1. CONTRACT DOCUMENTS. The Contract Documents consist of:

- a. This Agreement and written amendments to this Agreement signed by both CITY and CONTRACTOR; and
- b. Agreement with DoubleMap, Purchasing Contract #19/2013 executed by Will Hobart, City Purchaser, which is attached as Attachment A, and incorporated herein by reference.
- c. Pages 1-78 of the CONTRACTOR's response to CITY's request for proposals as amended, which is attached as Attachment B and incorporated herein by reference.
- d. Page 1 of the CONTRACTOR's Project Schedule, which is attached as Attachment C and incorporated herein by reference.
- e. Pages 1-4 of the Schedule of Products, Licenses and Fees, which is attached as Attachment D and incorporated herein by reference.
- f. CITY's Red Flag Policy, which is attached as Attachment E and incorporated herein by reference.
- g. CITY's Cloud Computing Requirements, which is attached as Attachment F and incorporated herein by reference.

In case of any inconsistency, conflict or ambiguity among the Contract Documents, the Documents shall govern in the order in which they are listed above. This Agreement, by incorporating by reference Purchasing Contract #19/2013, restates the terms of Purchasing Contract #19/2013, and thereby replaces it with this Agreement.

## 2. PROJECT, STANDARDS AND SPECIFICATIONS AND TIMING.

- a. The Project shall consist of all software, hardware and services necessary for complete implementation and use of the systems, as set forth more fully in the Contract Documents.
- b. Contractor shall be responsible and agrees to perform all work and services according to the specifications, material standards, procedures and quality standards set out in the Contract Documents.
- c. **TIMING OF WORK.** CONTRACTOR shall start work promptly, after receipt of a Notice to Proceed, and shall complete Phases of the Project as set forth in Exhibit C, unless otherwise agreed to in writing by the Parties.
- d. **MATERIAL AND WORKMANSHIP.** All materials provided by CONTRACTOR shall be new materials of high quality which shall give long life and reliable operation. All equipment shall be modern in design and shall not have been in prior service except as required by factory tests. The workmanship shall be of high quality in every detail.
- e. **REPAIRS AND/OR REPLACEMENT OF DEFECTIVE PORTIONS.** CONTRACTOR shall be responsible for a period of five (5) years from and after the date of final acceptance by the City of the work covered by this Contract, for any repairs or replacements caused by defective materials, workmanship, or equipment which, in the judgment of the City, shall become

necessary during such period. CONTRACTOR shall undertake with due diligence to make the aforesaid repairs and/or replacements within ten (10) days after receiving written notice that such repairs or replacements are necessary. If CONTRACTOR should neglect to begin such repairs or replacements within this period, or, in case of emergency, where in the judgment of the CITY, delay would cause serious loss or damage, the repairs and/or replacements may be made by the CITY and charged to CONTRACTOR.

3. TERM. The "Term" of this Agreement shall commence on the Effective Date and shall continue until the date that is five (5) years following the Effective Date, unless sooner terminated in accordance with the terms hereof. Thereafter, the Agreement shall automatically be renewed for successive terms of one (1) year (each successive term shall be called "Maintenance Term"), unless the Agreement is terminated pursuant to the provisions of this Agreement.

#### 4. TERMINATION.

a. Termination by Mutual Agreement. Termination of the Agreement can be made at the mutual Agreement of both CONTRACTOR and CITY.

b. Termination for Convenience. CITY is entitled to terminate this Agreement for convenience, provided that the CITY provides sixty (60) days advance notice to CONTRACTOR of its intent to terminate. In such event, CONTRACTOR shall immediately stop work and CITY shall not be liable to CONTRACTOR except for payment of actual work performed prior to such notice. Anticipatory profits and consequential damages shall not be recoverable by CONTRACTOR.

c. Termination upon Default. Upon the occurrence of an event of Default, the non-Defaulting Party shall be entitled to immediately terminate this Agreement. A Party shall be considered in Default of this Agreement upon:

- (i) A failure by a Party to pay any amount due hereunder, where such failure is not cured within thirty (30) days after written notice from the other Party of such failure to pay; or
- (ii) Either Party has (a) commenced a voluntary case under any bankruptcy law, applied for or consented to the appointment of, or the taking of possession by, a receiver, trustee, assignee, custodian or liquidator of all or a substantial part of its assets, (b) failed, or admitted in writing its inability generally, to pay its debts as such debts become due, (c) made a general assignment for the benefit of creditors, (d) been adjudicated bankrupt or has filed a petition or an answer seeking an arrangement with creditors, (e) taken advantage of any insolvency law or shall have submitted an answer admitting the material allegations of a petition in bankruptcy or insolvency proceeding, (f) become subject to an order, judgment or decree for relief, entered in an involuntary case, without the application, approval or consent of such Party any court of competent jurisdiction appointing a receiver, trustee, assignee, custodian or liquidator, for a substantial part of any of its assets and such order, judgment or decree shall continue unstayed and in effect for any period of one hundred eighty (180) consecutive days, (g) filed a voluntary petition in bankruptcy, (h) failed to remove an involuntary petition in bankruptcy filed against it within one hundred eighty (180) days of the filing thereof, or (i) become subject to an order for relief under the provisions of the United States Bankruptcy Act, 11 U.S.C. § 301; or
- (iii) Any Party's actual fraud or other material misconduct in connection with this Agreement or the performance of its obligations under this Agreement; or
- (iv) Any other default that has a material adverse effect on the non-defaulting Party if such

default has not been cured by the defaulting Party within thirty (30) days after receiving written notice from the non-defaulting Party setting forth, in reasonable detail, the nature of such default and its impact on the non-defaulting Party; provided, however, that, in the case of any such default that is not reasonably capable of being cured within the 30-day cure period, the defaulting Party shall have additional time as necessary to cure the default if it commences to cure the default within such 30-day cure period and it diligently and continuously pursues such cure.

(v) The purported assignment of this Agreement in a manner inconsistent with the terms of this Agreement.

Upon the occurrence of an Event of Default by a Party, the non-defaulting Party shall have the following rights:

(i) To terminate this Agreement by providing at least sixty (60) days prior written notice to the other Party of its intent to exercise its termination rights, unless such Event of Default is cured prior to the date of termination;

(ii) To suspend performance of its obligations and duties hereunder immediately upon delivering written notice to the defaulting Party of its intent to exercise its suspension rights; and

(iii) To pursue any other remedy given under this Agreement or now or hereafter existing at law or in equity or otherwise.

5. DATA OWNERSHIP AND STORAGE. CONTRACTOR does not own any data obtained or gathered by or through the CITY's use of the Software and Services and any information derived therefrom. CONTRACTOR shall not sell, give away, or transfer any personal customer data obtained by CONTRACTOR through the use of these systems by CITY. CONTRACTOR covenants that any data from the CITY, its employees or those persons or entities using the CITY's transit system through the use of the software, or derived therefrom shall be stored in the United States of America. The data or any information derived therefrom shall not be transferred, moved, or stored to or at any location outside the United States of America. All such data and any information derived therefrom shall be confidential and proprietary information belonging to either the CITY or its transit customers. CONTRACTOR shall not sell or give away any such CITY or customer data or information derived therefrom.

a. CONTRACTOR retains control over design elements of the user interface, including but not limited to elements such as bus and stop icons, map colors, banners, point of interest identification, and other related elements.

b. CONTRACTOR may use information in order to enhance the user experience. Information may be used in a manner specified by future agreements for platforms that will be jointly agreed upon by the CONTRACTOR and City.

c. CONTRACTOR will only use information once it has:

- Received permission from customer for such uses
- Removed any personally identifying data

All information is owned by the CITY or its transit customers, and CONTRACTOR agrees not to sell or transfer any CITY or personal customer data.

6. LICENSING, WARRANTY, MAINTENANCE, SUBSCRIPTIONS and CLOUD HOSTING.

a. LICENSING. CONTRACTOR hereby sells and licenses to CITY and CITY agrees to purchase and license from CONTRACTOR for CITY's purposes perpetual, site licenses for all the Software included in Attachment D. CONTRACTOR hereby grants to CITY any and all licenses needed for Project as set forth in Attachment D, which is incorporated herein by reference.

b. MAINTENANCE, SUBSCRIPTIONS and CLOUD HOSTING SERVICES. The Parties agree that CITY is paying for five years of maintenance, subscriptions and cloud hosting services during the initial Term. During any Maintenance Term, CONTRACTOR's standard fees associated with maintenance, subscriptions, and cloud hosting may increase or decrease. CONTRACTOR agrees to provide CITY with pricing for maintenance, subscriptions, and cloud hosting at the lowest rate offered to CONTRACTOR's customers. Any fee increase of more than five percent (5%) shall require a contract amendment.

c. WARRANTIES AND MAINTENANCE. The CONTRACTOR warrants that all components provided under this Agreement shall be: newly manufactured equipment or assembled from newly manufactured parts; approved by Underwriter's Laboratories; and, will be free from defects in workmanship or material for a period of five (5) years from the date of final system acceptance. During the five (5) year warranty period, the CONTRACTOR shall furnish all replacement new parts, shipping costs, repaired parts, service labor, travel costs, and other repair costs at no cost to the CITY.

1. Third party software. CONTRACTOR warrants that all third party software products, brands, types, etc., have been recommended based on CONTRACTOR's understanding of the CITY's operating environment and that such third party software products, brands, types, etc., shall operate as demonstrated by and documented or represented by CONTRACTOR. CONTRACTOR further warrants that CONTRACTOR has the right to license said third party software products, brands, types, etc.

2. Third party hardware. Any and all hardware products, brands, types, etc., that CONTRACTOR provides to CITY pursuant to this Agreement shall be warranted to perform satisfactorily (defined as minimum ninety eight percent (98%) uptime during normal business hours and maximum three (3) second response time to non-query commands) for five (5) years from the signing of this Agreement, assuming local or other hardware support contracts are in effect for routine maintenance and diagnostics.

3. Warranty of Fitness for a Particular Purpose. Given CITY's documentation about the CITY's particular purpose, the CONTRACTOR acknowledges at the time this Agreement is in force that CONTRACTOR has (1) reason and opportunity to know the particular purpose for which products are required, and (2) that the CITY is relying on the CONTRACTOR's experience and knowledge of these products to provide those which are most suitable and appropriate. Therefore, the CONTRACTOR warrants that the system is fit for the purposes for which it is intended as described in this Agreement.

4. Resolution and Response Time Warranty

CONTRACTOR warrants that all Resolution and Response Times delineated below shall be adhered to as follows:

a. Priority 1 support issues are defined as: Mission Critical – Software is down /undiagnosed but feared critical; situation may require a restore and Software use is suspended until a diagnosis is given.

- Response to first call time limit – within two (2) business hours
- Resolution time limit – CONTRACTOR shall use its best efforts to resolve within one (1) business day
- If CONTRACTOR and CITY are on a support telephone call to resolve a Priority 1 support issue at the time that normal support hours end, CONTRACTOR support representatives will remain on the call past the normal support hours to provide what assistance can be provided at no additional cost. CITY acknowledges that programmers will not be available at that time.

Penalty for not adhering to time limits - CITY shall receive a one percent (1%) credit against the annual Support fees, per incident, with a maximum of three (3) incidents or three percent (3%) reduction in any one year.

b. Priority 2 support issues are defined as: Critical Issue – Software is not down, but operations are negatively impacted.

- Response to first call time limit – within four business hours
- Resolution time limit – CONTRACTOR shall use its best efforts to resolve within one (1) business week

Penalty for not adhering to time limits - CITY shall receive a one percent (1%) credit against the annual Support fees, per incident, with a maximum of three (3) incidents or three percent (3%) reduction in any one (1) year.

c. Priority 3 support issues are defined as: Non-Critical Issue – resolution period to be mutually agreed upon.

- Response to first call time limit – within twenty-four (24) business hours
- Resolution time limit – CONTRACTOR shall use its best efforts to resolve within one (1) business week.

Penalty for not adhering to time limits - CITY shall receive a one percent (1%) credit against the annual Support fees, per incident, with a maximum of three (3) incidents or three percent (3%) reduction in any one (1) year.

d. Continuity of Warranty. CITY may continue the Warranty protection described above by purchasing and paying for on-going Annual Support services described below during the Maintenance Terms. By doing so, all Warranty, Warranty of Fitness for a Particular Use, and Resolution and Response Time Warranty conditions above shall remain in effect, in perpetuity (except for the “Third party hardware” clause above), as long as payments for Annual Support are kept current.

e. Final Acceptance of the System. The system proposed shall be defined to be finally accepted by CITY after the installation of the equipment, training, and successful

completion of the following performance examinations: system hardware examination, software performance examination, system functional competence examination, system capacity examination, full-load processing capacity examination, system availability examination, approval of as-builts, training, and system documentation. The CITY shall be the sole judge of whether all conditions for final acceptance criteria have been met.

7. **UPGRADES TO SOFTWARE.** CITY is entitled to receive any maintenance updates to the Service that CONTRACTOR may release or provide to its other customers that improves or maintains the stability of the Service ("Updates") at no cost to Customer. If new features that add new functionality to the Service ("Upgrades") are offered for sale to CONTRACTOR'S other customers, such features will be offered to Customer at or below the prevailing rate. In the case where CONTRACTOR provides new features to Customer at no charge for testing or trial, the continued availability, performance, or usefulness of such features are not guaranteed or warranted by CONTRACTOR and such features may be revoked at any time. CONTRACTOR reserves the right to charge for any significant additional data requests made by the CITY over the course of the contract, including but not limited to bus number changes, route changes, and related additions, deletions, or alterations to system data.

8. **SUNSHINE LAW.** Access to data shall be granted in accordance with Missouri's open records law. The CITY of Columbia Public Works Department Records Custodian shall serve as the custodian of records for open records requests. CONTRACTOR shall provide access, at no additional costs, to the CITY of Columbia Public Works Department records custodian or his or her designee to all CITY's data and the data to allow for the fulfillment of Sunshine requests. CONTRACTOR shall provide all reasonable requests for information free of charge, including records and contracts data. CONTRACTOR reserves the right to charge CITY for any data requests which present a burden on business operations, including access to database information.

#### 9. RECORDS RETENTION.

a. Pursuant to Missouri Law, both Parties agree that all records shall be retained in accordance with Missouri law and records retention schedules adopted by the Local Records Board and in accordance with the requirements of the Federal Grant. If there is a conflict between Missouri Law, then applicable retention schedule adopted by the Local Records Board, and the Grant requirements, the longer retention period shall apply.

b. **Effect of Termination and Records Retention.** At the close date for this Agreement, either through contract duration or termination, CONTRACTOR shall provide CITY with all records as defined by law. CONTRACTOR shall provide to CITY at no cost a method of migrating or exporting all electronic records or data in a usable basis in a method and format acceptable to CITY. At CITY's sole option, CITY may choose to negotiate a new contract for ongoing storage and access to all CITY records and data as needed to comply with the Missouri Sunshine Law and the record retention requirements of the Grant or as required by law.

10. DEVELOPMENT OF ADDITIONAL APPLICATIONS USING DATA.

a. CONTRACTOR shall provide access to data through an API to allow CITY to develop additional applications using the data, to hire others to develop additional applications, to allow members of the public to develop additional applications, including but not limited to work for hire or a contest type event. CONTRACTOR shall provide access to data to allow any such applications to utilize real time transit data.

b. Notice of Changes in API. To allow for the functioning of any applications using Data through the API, CONTRACTOR shall notify CITY in advance of any changes in the formatting of the API no later than thirty (30) days prior to the change.

11. DATA SECURITY.

a. CONTRACTOR shall at all times comply with the Contract Documents, Good Financial Industry and Accounting Practices, Applicable Laws, CITY's Red Flag Policy, SAS70 auditing standards, and the CITY's Cloud Computing Requirements.

b. CONTRACTOR shall comply with the CITY's Red Flag policy and timely report any Red Flags to the CITY's Program Administrator. Said report shall include Red Flags detected by CONTRACTOR or its subcontractors or subsidiaries and CONTRACTOR's response to the Red Flags so detected.

c. CONTRACTOR shall provide CITY with a copy of its existing Red Flag policies and procedures, and shall promptly provide copies of any changes to its Red Flag policies and procedures.

d. If any Software upgrade includes the storage or use of credit cards and debit cards, CONTRACTOR shall comply and shall warrant that the CONTRACTOR's software and services comply with the Payment Card Industry (PCI) Data Security Standards; Good Financial Industry and Accounting Practices; SAS70 auditing standards; Visa, Mastercard, and Discover Card Rules and Regulations; NACHA (The Electronic Payments Association) Rules; and the CITY's Red Flag Policy.

e. DUTY TO REPORT. CONTRACTOR shall maintain the security of CITY content and data and that of CITY's customers and any user that is stored in or in any way connected with Software Products and applications. If either Party believes or suspects that security has been breached or data compromised whether it be from harmful code or otherwise, the Party shall notify the Other Party of the issue or possible security breach within forty-eight (48) hours.

f. BINDING SUBCONTRACTORS AND SUBSIDIARIES TO DATA SECURITY STANDARDS. CONTRACTOR shall include similar provisions in CONTRACTOR's Agreements with subcontractors and subsidiaries who perform work or services related to these Software Products and or the CITY's Data contained therein or in the cloud storage.

12. NO HARMFUL CODE. CONTRACTOR warrants that the Software Products do not contain

Harmful Code. For purposes of this Agreement, "Harmful Code" is any code containing any program, routine, or device which is designed to delete, disable, deactivate, interfere with or otherwise harm any software, program, data, device, system or service, including without limitation, any time bomb, virus, drop dead device, malicious logic, worm, Trojan horse or trap or back door. CONTRACTOR shall include in contracts with any subcontractor a provision which prohibits the use of Harmful Code.

### 13. PAYMENTS.

#### a. *Initial Five Year Term.*

**1. For the IT Complete Project, including Equipment, Maintenance, Warranty Addition, Subscriptions and Cloud Hosting during the initial five year Term and for the Maintenance, Subscriptions, Warranty Addition and Cloud Hosting for AVL-GPS Project for the initial five year Term, CITY shall pay CONTRACTOR according to the schedules set forth below. CITY agrees to pay the Contractor six hundred eighty-three thousand two hundred forty-four dollars (\$683,244.00). Payment shall include all hardware, software, maintenance, and services, as described and listed in Attachment D, for the full five (5) year Term. CITY shall pay CONTRACTOR as follows:**

**\$133,392.10 Due at contract signing – nineteen and a half percent (19.5%).**

**\$465,259.30 Due after delivery and installation of all hardware equipment has occurred – sixty eight and one tenth percent (68.1 %).**

**\$84,592.60 Due at system acceptance – twelve and four tenths percent (12.4%).**

2. All uncontested fees will be due and payable no later than thirty (30) days after the date of an invoice received from CONTRACTOR. All amounts paid are nonrefundable provided and subject to CONTRACTOR not being in material breach or violation of this Agreement. CITY will pay all fees in U.S. dollars, and payments shall be sent to the address indicated on the invoice, or as otherwise instructed by CONTRACTOR. CONTRACTOR may withhold services or terminate this Agreement if Customer fails to pay any uncontested amounts after being provided thirty (30) days written notice of such delinquency and provided CONTRACTOR is not in material breach or violation of this Agreement. Prices do not include applicable state and local sales, use and related taxes. CITY shall be responsible for such taxes or will provide proof of tax exemption with first payment.

3. CONTRACTOR reserves the right to charge a penalty on any late uncontested payments. This penalty can be up to five percent (5%) of the total amount of the invoice for every thirty (30) days late.

4. For the AVL-GPS Project, CITY shall pay any amounts due pursuant to the Payment terms of Attachment A.

b. Annual Fees for Maintenance Terms. After the initial Term, CITY shall pay CONTRACTOR fees for maintenance, cloud hosting and subscription services as set forth in Section 6.

#### 14. CONTRACTOR'S INSURANCE

The CONTRACTOR shall not commence work under this Contract until they have obtained all insurance required under this paragraph and such insurance has been approved by the CITY, nor shall the CONTRACTOR allow any subcontractor to commence work on the Project until all similar insurance required of subcontractor has been so obtained and approved. All policies shall be in amounts, form, and with companies satisfactory to the CITY **which must carry an A-6 or better rating as listed in the A.M. Best or equivalent rating guide.**

**a. WORKERS COMPENSATION INSURANCE:** The CONTRACTOR shall take out and maintain during the life of this Contract **Employers Liability and Workers Compensation Insurance** for all of their employees employed at the site of the work, and in case any work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide Workers Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR.

Workers Compensation coverage shall meet Missouri statutory limits. Employers Liability limits shall be \$500,000.00 each employee, \$500,000.00 each accident, and \$500,000.00 policy limit. In case any class of employees engaged in hazardous work under this Contract at the site of the work is not protected under the Workers Compensation Statute, the CONTRACTOR shall provide and shall cause each subcontractor to provide Employers Liability Insurance for the protection of their employees not otherwise protected.

**b. COMMERCIAL GENERAL LIABILITY INSURANCE:** CONTRACTOR shall carry Commercial General Liability Insurance written on ISO occurrence form CG 00 01 07 98 or later edition (or a substitute form providing equivalent coverage) and shall cover all operations by or on behalf of the CONTRACTOR, providing insurance for bodily injury liability and property damage liability for the limits indicated below and for the following coverage:

- (1) Premises and Operations
- (2) Products and Completed Operations

Contractual Liability insurance for the obligations assumed by the CONTRACTOR under this Contract.

Personal Injury Liability and Advertising Injury Liability.

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the general aggregate limit shall apply separately to the CONTRACTOR's Project under this Contract. Completed Operations coverage must be maintained for the correction period provided by the Agreement.

Limit of Liability. The Commercial General Liability policy limits shall not be less than:  
\$1,000,000 Each Occurrence (Combined Single Limit for Bodily Injury and Property Damage)  
\$1,000,000 Aggregate for Products/Completed Operations  
\$1,000,000 Personal Injury/Advertising Injury  
\$1,000,000 General Aggregate (provide endorsement to apply the General Aggregate per project, if available. If not, see Umbrella Liability section.)

Additional Insured. CITY, all of its officers, directors and employees, shall be named as Additional Insureds under the Commercial General Liability Insurance using ISO Additional Insured Endorsements CG 20 10 or substitute providing equivalent coverage. If additional insured status is required for a correction period then CG 20 37 or equivalent should also be used. These endorsements must be stated on the insurance certificate provided to CITY and a copy of the endorsements confirming coverage should accompany the insurance certificate.

Primary Coverage. The CONTRACTOR's Commercial General Liability Policy shall apply as primary insurance and any other insurance carried by CITY shall be excess only and will not contribute with CONTRACTOR's insurance. This must be stated on the insurance certificate and a copy of the endorsement confirming coverage should accompany the insurance certificate.

**c. BUSINESS AUTOMOBILE LIABILITY INSURANCE:** The policy should be written on ISO form CA 0001, CA 0005, CA 0002, CA0020 or a substitute form providing equivalent coverage and shall provide coverage for all owned, hired and non-owned vehicles. The limit of liability should be at least \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage each accident and should also cover Automobile Contractual Liability. The policy should name CITY and all of its officers, directors and employees as Additional Insureds. The policy shall be endorsed to be primary coverage and any other insurance carried by CITY shall be excess only and will not contribute with CONTRACTOR's insurance. To confirm coverage, a copy of the Additional Insured Endorsement should accompany the insurance certificate.

**d. UMBRELLA EXCESS LIABILITY:** The CONTRACTOR should provide an umbrella excess liability policy that will provide a minimum of \$1,000,000 per occurrence/\$1,000,000 aggregate over the above listed coverages. This policy should "follow-form" of the underlying policies and complies with all insurance requirements of those policies. If the General Aggregate of the Commercial General Liability policy does not apply per project, the umbrella excess limits should be \$2,000,000 per occurrence/\$2,000,000 aggregate.

**e. WAIVER OF SUBROGATION:** The Commercial General Liability and Automobile Liability policies shall each contain a waiver of subrogation in favor of CITY and its officers, directors and employees.

**f. CERTIFICATES OF INSURANCE:** As evidence of the insurance, limits and endorsements required, a standard ACORD or equivalent Certificate of Insurance executed by a duly authorized representative of each insurer shall be furnished by the

CONTRACTOR to the CITY before any work on this Project is commenced by the CONTRACTOR. CITY shall have the right, but not the obligation, to prohibit CONTRACTOR or any Subcontractor from entering the Project site until such certificates are received and approved by the CITY. With respect to insurance to be maintained after final payment, an additional certificate(s) evidencing such coverage shall be promptly provided to CITY as a precondition to final payment. The Certificate of Insurance shall provide that there will be no cancellation or reduction of coverage without thirty (30) days prior written notice to CITY. The certificate must also contain a description of the Project. Failure to maintain the insurance required herein may result in termination of the Contract at CITY's option. In the event the CONTRACTOR does not comply with the requirements of this section, CITY shall have the right, but not the obligation, to provide insurance coverage to protect CITY and charge the CONTRACTOR for the cost of that insurance. The required insurance shall be subject to the approval of CITY, but any acceptance of insurance certificates by CITY shall in no way limit or relieve the CONTRACTOR of their duties and responsibilities in this Agreement.

**g. SUBCONTRACTORS:** CONTRACTOR shall cause each Subcontractor to purchase and maintain insurance of the types and amounts specified herein. Limits of such coverage may be reduced only upon written agreement of CITY. CONTRACTOR shall provide to CITY copies of certificates evidencing coverage for each Subcontractor. Subcontractors' commercial general liability and business automobile liability insurance shall name CITY as Additional Insured and have the Waiver of Subrogation endorsements added.

## **15. HOLD HARMLESS AGREEMENT**

To the fullest extent not prohibited by law, CONTRACTOR shall indemnify and hold harmless the City of Columbia, its directors, officers, agents, and employees from and against all claims, damages, losses,

and expenses (including but not limited to attorney's fees) only to the extent caused by negligence in the performance of professional services by the CONTRACTOR, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with CONTRACTOR or a subcontractor for part of the services), of anyone directly or indirectly employed by CONTRACTOR or by any subcontractor, or of anyone for whose acts the CONTRACTOR or its subcontractor may be liable, in connection with providing these services. This provision does not, however, require CONTRACTOR to indemnify, hold harmless, or defend the CITY from its own negligence. Nothing in this Agreement shall constitute a waiver of sovereign immunity.

16. NOTICE. Each notice, request, demand, statement or routine communication required or permitted under this Agreement, or any notice or communication that either Party may desire to deliver to the other, shall be in writing and shall be considered delivered effective: (a) when verified by written receipt if sent by personal courier, overnight courier, or mail; or (b) when verified by automated receipt or electronic logs if sent by facsimile or email.

The designation and titles of the person to be notified or the address of such person may be changed at any time by written notice.

FOR THE CITY:

City of Columbia  
Attention: John Glascock  
PO Box 6015  
Columbia, MO 65205  
Telephone: (573)874-7253

FOR THE CONTRACTOR:

DoubleMap, Inc.  
Attention: Jeffrey J Kirk II  
2700 Market Tower, 10 W Market Street  
Indianapolis, IN 46204  
Telephone: (317) 324-8883

17. **AMENDMENT.** No amendment, addition to, or modification of any provision hereof shall be binding upon the Parties, and neither Party shall be deemed to have waived any provision or any remedy available to it unless such amendment, addition, modification or waiver is in writing and signed by a duly authorized officer or representative of the Parties.

18. **ASSIGNMENT.** This Agreement shall inure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns. Neither Party shall assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party.

19. **SEVERABILITY.** If any of the terms of this Agreement are finally held or determined to be invalid, illegal or void, all other terms of the Agreement shall remain in effect; provided that the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties.

20. **NO THIRD PARTY BENEFICIARY.** This Agreement is intended solely for the benefit of the Parties hereto and nothing contained herein shall be construed to create any duty to, or standard of care with reference to, or any liability to, or any benefit for, any Person not a Party to this Agreement.

21. **GOVERNING LAW.** This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable. The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri, or the United States Western District of Missouri. The Parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens.

22. **NATURE OF CITY'S OBLIGATIONS.** All obligations of the City under this Agreement, which require the expenditure of funds, are conditional upon the availability of funds budgeted and appropriated for that purpose.

23. GENERAL LAWS. CONTRACTOR agrees to comply with all applicable laws, rules, regulations, ordinances, and statutes of the United States, State of Missouri, and City of Columbia, Missouri.

24. EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED. CONTRACTOR agrees to comply with Missouri State Statute section 285.530 in that they shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri. As a condition for the award of this contract the CONTRACTOR shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. CONTRACTOR shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. CONTRACTOR shall require each subcontractor to affirmatively state in its contract with CONTRACTOR that the subcontractor shall not knowingly employ, hire for employment or continue to employ an unauthorized alien to perform work within the state of Missouri. CONTRACTOR shall also require each subcontractor to provide CONTRACTOR with a sworn affidavit under the penalty of perjury attesting to the fact that the subcontractor's employees are lawfully present in the United States.

25. AMERICANS WITH DISABILITIES ACT. CONTRACTOR's Software Products and applications shall comply with the requirements of the Americans with Disabilities Act and comply with the requirements of any rules or regulations of the federal, state, or local government related thereto.

26. COMPLIANCE WITH GRANT REQUIREMENTS. The Parties agree that grant funds from the United States Department of Transportation (hereinafter, "FTA") are being used for this purchase. CONTRACTOR shall comply with all conditions and requirements of the Grant, including, but not limited to those set forth herein. CONTRACTOR shall include in contracts with subcontractors provisions that require subcontractors to comply with the requirements of this section.

a. CONTRACTOR shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation, those listed directly or by reference in the Agreement between the City and FTA (FTA MA (18) dated October 1, 2011), as they may be amended or promulgated from time to time during the term of this Contract. CONTRACTOR's failure to so comply shall constitute a material breach of this Contract.

b. CIVIL RIGHTS.

1. Nondiscrimination. In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S. C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees that it will not discriminate against any employee or applicant for employment because of race, color,

creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing regulations that the Federal Transit Administration (FTA) may issue.

2. Equal Employment Opportunity. The following equal employment opportunity requirements apply to this Contract:

Race, Color, Creed, National Origin or Sex. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. §2000e, et seq., and Federal transit laws at 49 U.S.C. §5332, the Contractor agrees to comply with all applicable equal opportunity requirements of the U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor" 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Age. In accordance with Section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. §5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Disabilities. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. §12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

ADA Access Requirements. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112 and section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Contractor agrees that it will comply with the requirements of U.S. Department of Transportation regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 CFR Part 37; and U.S. Department of Transportation regulations, "Americans with Disabilities Accessibility Specifications for Transportation Vehicles," 36 CFR Part 1192 and 49 CFR Part 38, pertaining to facilities and equipment to be used in public transportation. In addition, the Contractor agrees to comply with the requirements of 49 U.S.C. § 5301 (d) which expresses the

Federal policy that the elderly and persons with disabilities have the same right as other persons to use mass transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly persons and persons with disabilities. CONTRACTOR shall make the services, programs, and activities governed by this Agreement accessible to the disabled as required by the Americans with Disabilities Act and its implementing regulations.

c. **DEBARMENT AND SUSPENSION CERTIFICATION.** The Contractor, its principals and any affiliates, shall certify that it is not included in the "U.S. General Services Administration's List of Parties Excluded from Federal Procurement or Non-procurement Programs," as defined at 49 CFR Part 29, Subpart C. The Contractor agrees to refrain from awarding any subcontract of any amount (at any tier) to a debarred or suspended subcontractor, and to obtain a similar certification from any subcontractor (at any tier) seeking a contract exceeding \$25,000. The Contractor agrees to provide the City a copy of each conditioned debarment or suspension certification provided by a prospective subcontractor at any tier, and to refrain from awarding a subcontract with any party that has submitted a conditioned debarment or suspension certification until FTA approval is obtained. Contractor also agrees to comply with any implementing requirements FTA may issue.

d. **DISADVANTAGED BUSINESS ENTERPRISE (DBE).** This Contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs. The national goal for participation of Disadvantaged Business Enterprises (DBE's) is 10 percent. The City's overall goal for DBE participation is 12.5 percent. A separate contract goal has not been established for this procurement. CONTRACTOR shall not discriminate on the basis of race, color national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the CONTRACTOR to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the City deems appropriate. Each subcontract the CONTRACTOR signs with a subcontractor must include the assurance in this paragraph (see 49 C.F.R. 26.13(b)). CONTRACTOR shall be required to report its DBE participation obtained through race-neutral means throughout the Term. CONTRACTOR is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the CONTRACTOR's receipt of payment for that work from CITY. CONTRACTOR must promptly notify CITY whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. CONTRACTOR may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without the prior written consent of CITY.

e. **DISCLAIMER OF FEDERAL GOVERNMENT OBLIGATIONS OR LIABILITY.** CONTRACTOR, and any subcontractors acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of this contract, absent the express written consent by the Federal Government, the Federal

Government is not a party to this contract and shall not be subject to any obligations or liabilities to the CONTRACTOR, or any other party (whether or not a party to this Contract) pertaining to any matter resulting from this Contract. It is further agreed that the clause shall be included in each subcontract and shall not be modified, except to identify the subcontractor who will be subject to its provision.

f. ENVIRONMENTAL REGULATIONS.

1. Clean Air. CONTRACTOR agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §7401 et seq. CONTRACTOR agrees to report, and to require each subcontractor at every tier receiving more than \$100,000 from this Contract to report any violation of these requirements resulting from any project implementation activity to CITY. CITY will in turn, report each violation as required to assure notification to FTA and the appropriate U.S. EPA Regional Office.

2. Clean Water. CONTRACTOR agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq. CONTRACTOR agrees to report, and requires each subcontractor at every tier receiving more than \$100,000 from this Contract to report any violation of these requirements resulting from any project implementation activity to the CITY. CONTRACTOR understands that the CITY will in turn, report each violation as required to assure notification to FTA and the appropriate U.S. EPA Regional Office.

3. Energy Conservation. CONTRACTOR agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

4. Recovered Materials/Recycle Products. CONTRACTOR agrees to comply with all the requirements of Section 60002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.

g. FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS. CONTRACTOR acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to the Project. Upon execution of the Contract, CONTRACTOR certifies and affirms the truthfulness and accuracy of any statement it has made, it makes, or may make pertaining to the project covered under this Contract. In addition to other penalties that may be applicable, CONTRACTOR further acknowledges that if it makes a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on CONTRACTOR to the extent the Federal Government deems appropriate. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim,

statement, submission, or certification to the Federal Government in connection with this Contract, the Government reserves the right to impose on the Contractor the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n) (1), to the extent the Federal Government deems appropriate. CONTRACTOR agrees to include these clauses in each subcontract, and it is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

h. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION TERMS.

The provisions in this Contract include certain standard terms and conditions required by the U.S. Department of Transportation (DOT), whether or not expressly set forth. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E or any revision thereto, are hereby incorporated by reference. Anything to the contrary herein notwithstanding and to the extent allowed by law, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in the Contract. CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any the CITY requests that would cause the CITY to be in violation of the FTA terms and conditions.

i. LOBBYING RESTRICTIONS. CONTRACTOR is bound by its certification contained in its offer to the CITY regarding the use of federal or non-federal funds to influence, or attempt to influence any federal officer or employee regarding the award, execution, continuation, or any similar action of any federal grant or other activities as defined in 31 U.S.C. 1352, and 49 CFR Part 20. CONTRACTOR agrees to comply with this requirement throughout the term of the Contract. CONTRACTOR shall obtain the same certification and disclosure required by the LOBBYING RESTRICTIONS from each subcontractor and shall file the required certifications and disclosures with the CITY.

j. NATIONAL INTELLIGENT TRANSPORTATION SYSTEMS ARCHITECTURE AND STANDARDS. CONTRACTOR agrees to conform, to the extent applicable, to the National Intelligent Transportation Systems (ITS) Architecture and Standards as required by SAFETEA-LU § 5307(c), 23 U.S.C. § 512 note, and CONTRACTOR agrees to comply with FTA Notice, "FTA National ITS Architecture Policy on Transit Projects" 66 Fed. Reg. 1455, January 8, 2001, and any further implementing directives, except to the extent FTA determines otherwise in writing.

k. PRIVACY ACT REQUIREMENTS. CONTRACTOR agrees to comply with, and assures the compliance of its employees and subcontractors with the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552. Among other things, CONTRACTOR agrees to obtain the express consent of the CITY and/or the Federal Government before the CONTRACTOR or its employees operate a system of records on behalf of the CITY or Federal Government. CONTRACTOR understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to all individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying Agreement. CONTRACTOR agrees that strict privacy will be maintained in the collection, storage, use, transfer, access to and/or security of information protected by the Privacy Act. CONTRACTOR agrees to protect such information, and to limit the use of the information to that required by the contract.

l. RECORD RETENTION AND ACCESS. CONTRACTOR agrees that, during the course of this Agreement and any extensions thereof, and for three years thereafter, it will maintain intact and readily accessible all data, documents, reports, records, contracts, and supporting materials relating to this Contract. In the event of litigation or settlement of claims arising from the performance of this Contract, CONTRACTOR shall maintain same until such litigation, appeals, claims or exceptions related thereto have been disposed of. CONTRACTOR shall permit the CITY, the Secretary of Transportation, the FTA Administrator, the Comptroller General of the United States, and, the CITY to inspect all work, materials, sites, payrolls, and other data and records, and to audit the books, records, and accounts of CONTRACTOR relating to its performance under this Contract. CONTRACTOR shall permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

m. SEAT BELT USE POLICY. CONTRACTOR agrees to comply with terms of Executive Order No. 13043 "Increasing Seat Belt Use in the United States."

n. TEXTING WHILE DRIVING AND DISTRACTED DRIVING. Consistent with Executive Order No. 13513, "Federal Leadership on Reducing Text Messaging While Driving," October 1, 2009, 23 U.S.C. Section 402 note, and DOT Order 3902.10, "Text Messaging While Driving," December 30, 2009, CONTRACTOR agrees to promote policies and initiatives for its employees and other personnel that adopt and promote safety policies to decrease crashes by distracted drivers, including policies to ban text messaging while driving, and to encourage each subcontractor to do the same.

o. BUY AMERICA. CONTRACTOR shall comply with 49 U.S.C. §5323(j), and 49 CFR. Part 661, which provide that federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7 and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, microcomputer equipment & software. Separate requirements for rolling stock are set out at 5323(j) (2) (C) and 49 CFR Part 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content.

27. CONTRACTOR'S REPRESENTATIONS AND WARRANTIES. CONTRACTOR represents and warrants as follows:

a. CONTRACTOR is a corporation organized in the State of Indiana with authority to transact business in the State of Missouri;

b. CONTRACTOR has the power and authority to enter into and perform this Agreement and is not prohibited from entering into this Agreement or discharging and performing all covenants and obligations on its part to be performed under and pursuant to this Agreement;

c. CONTRACTOR has taken all action required by law in order to approve, execute and deliver this Agreement;

d. The execution and delivery of this Agreement, the consummation of the transactions contemplated herein and the fulfillment of and compliance by CONTRACTOR with the provisions of this Agreement will not conflict with or constitute a breach of or a default under or require any consent, license or approval that has not been obtained pursuant to any of the terms, conditions or provisions of any law, rule or regulation, any order, judgment, writ, injunction, decree, determination, award or other instrument or legal requirement of any court or other agency of government, the documents of formation of CONTRACTOR or any contractual limitation, restriction or outstanding trust indenture, deed of trust, mortgage, loan agreement, lease, other evidence of indebtedness or any other agreement or instrument to which CONTRACTOR is a party or by which it or any of its property is bound and will not result in a breach of or a default under any of the foregoing;

e. CONTRACTOR has taken all such action as may be necessary or advisable and proper to authorize this Agreement, the execution and delivery hereof, and the consummation of transactions contemplated hereby;

f. To CONTRACTOR's knowledge, there are no actions, proceedings, judgments, rulings or orders issued by, or pending before any court or other governmental body that would materially adversely affect CONTRACTOR's ability to perform its obligations under this Agreement; and

g. This Agreement is a legal, valid and binding obligation of CONTRACTOR enforceable in accordance with its terms, except as limited by laws of general applicability limiting the enforcement of creditor's rights or by the exercise of judicial discretion in accordance with general principles of equity.

28. **USE OF SUBCONTRACTORS.** The Parties agree that CONTRACTOR shall subcontract using the subcontractors Contractor identified in Attachment A. No additional or other substitute subcontractor shall be used without the prior written approval of the CITY. CONTRACTOR shall file with CITY a complete list of subcontractors together with a list of the services and equipment provided by subcontractor. This list shall be submitted in writing to the CITY as soon as subcontracts are made and approved by the CITY. Any subcontractor performing work under this contract at the direction of the CONTRACTOR shall file a "Final Receipt of Payment and Release" form. This completed form shall be submitted to the CITY along with application for final payment.

29. **ENTIRE AGREEMENT.** This Agreement represents the entire and integrated Agreement between the CITY and CONTRACTOR. All previous or contemporaneous agreements, representations, promises and conditions relating to services described herein are superseded.

[SIGNATURES ON THE FOLLOWING PAGE]

**CITY OF COLUMBIA, MISSOURI**

By: \_\_\_\_\_  
Mike Matthes, City Manager

ATTEST:

\_\_\_\_\_  
Sheela Amin, City Clerk

APPROVED AS TO FORM:

\_\_\_\_\_  
Nancy Thompson, City Counselor

CERTIFICATION: I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, Account No. 553-6188-881.4990 047036 and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

By: \_\_\_\_\_  
John Blattel, Director of Finance

**DOUBLEMAP, INC.**

(Seal)

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

ATTEST:

\_\_\_\_\_

**ORIGINAL**

**Attachment A**



**AGREEMENT BETWEEN THE CITY OF COLUMBIA  
AND DOUBLEMAP, INC.  
FOR AVL-GPS SYSTEM PURCHASE  
RELATED TO THE INFORMATION TECHNOLOGY UPGRADES TO THE COLUMBIA  
TRANSIT SYTEM**

**(PURCHASING CONTRACT #19/2013)**

This agreement is entered into on this 26 of June, 2013 ("Effective Date"), between the City of Columbia, Missouri, a municipal corporation of the State of Missouri ("CITY"), and DoubleMap, Inc., 1100 Waterway Boulevard, Indianapolis, Indiana, a corporation organized in the State of Indiana with authority to transact business within the State of Missouri (hereinafter "CONTRACTOR"). CITY and CONTRACTOR are each individually referred to herein as a "Party" and collectively as the "Parties".

WHEREAS, the United States Department of Transportation has awarded a grant (hereinafter "Grant") to the CITY and the Grant includes funding for information technology upgrades to the Columbia Transit System (hereinafter "Project");

WHEREAS, CITY, as part of the federal grant, desires to purchase an AVL-GPS system, licenses, related equipment and services for CITY's bus system (hereinafter "AVL-GPS Project"). This AVL-GPS Project is part of the information technology upgrades to the Columbia Transit System;

WHEREAS, CITY has advertised for proposals, has received said proposals, analyzed same and selected CONTRACTOR for the Project;

WHEREAS, Section 2-459 of the City Code of Ordinances provides for the authority of the purchasing agent to contract for the purchase of supplies, materials, equipment and services;

WHEREAS, Section 2-461 limits the authority of the purchasing agent to contract when the length of the original term plus all extended terms exceeds five years and three months;

WHEREAS, the City Council has the authority to authorize a contract for longer than five years and three months;

WHEREAS, the CITY intends to use the equipment and services for the AVL-GPS Project for a period of time longer than five years and three months;

WHEREAS, it is important to the community to have the AVL-GPS system operational when the students arrive in August of 2013. In order for the CONTRACTOR to order the necessary equipment for the AVL-GPS Project and due to the limitations on the purchasing agent's authority, the purchasing agent shall authorize the purchase of the equipment, services and licenses through execution of this Agreement. All other portions of the Project shall be addressed by a second agreement, subject to Council authorization;

WHEREAS, upon execution of the Agreement for the Project authorized by the City Council,



the Agreement for the Project shall restate and replace this Agreement;

NOW, THEREFORE, the Parties hereto, for good and sufficient consideration, the receipt of which is hereby acknowledged, intending to be legally bound, do hereby agree as follows:

1. **CONTRACT DOCUMENTS.** The Contract Documents consist of:
  - a. This Agreement and written amendments to this Agreement signed by both CITY and CONTRACTOR; and
  - b. Description of items and services included in the AVL-GPS Project, which is attached as Attachment A and incorporated herein by reference; and
  - c. City's Cloud Computing Requirements, which are attached as Attachment B and incorporated herein by reference.

In case of any inconsistency, conflict or ambiguity among the Contract Documents, the Documents shall govern in the order in which they are listed above.

2. **AVL-GPS PROJECT, STANDARDS AND SPECIFICATIONS AND TIMING.**
  - a. This Agreement covers the equipment, services, and a perpetual site license for the AVL-GPS Software as set forth in Attachment A.
  - b. CONTRACTOR shall be responsible and agrees to perform all work and services according to the specifications, material standards, procedures and quality standards set out in the Contract Documents.
  - c. **TIMING OF WORK.** CONTRACTOR shall start work promptly, after receipt of a Notice to Proceed, and shall complete the AVL-GPS Project no later than August 16th, 2013, unless otherwise agreed to in writing by the Parties.
  - d. **MATERIAL AND WORKMANSHIP.** All materials provided by CONTRACTOR shall be new materials of high quality which shall give long life and reliable operation. All equipment shall be modern in design and shall not have been in prior service except as required by factory tests. The workmanship shall be of high quality in every detail.
  - e. **REPAIRS AND/OR REPLACEMENT OF DEFECTIVE PORTIONS.** CONTRACTOR shall be responsible for a period of one year from and after the date of final acceptance by the City of the work covered by this Contract, for any repairs or replacements caused by defective materials, workmanship, or equipment which, in the judgment of the City, shall become necessary during such period. CONTRACTOR shall undertake with due diligence to make the aforesaid repairs and/or replacements within ten (10) days after receiving written notice that such repairs or replacements are necessary. If CONTRACTOR should neglect to begin such repairs or replacements within this period, or, in case of emergency, where in the judgment of the CITY, delay would cause serious loss or damage, the repairs and/or replacements may be made by the CITY and charged to CONTRACTOR.

3. **TERM.** The "Term" of this Agreement shall commence on the Effective Date and shall continue until a date that is five (5) years following the Effective Date, unless sooner terminated in accordance with the terms hereof. Under no circumstance shall the length of the original Term plus all extended terms exceed five years and three months.
4. **TERMINATION.**
- a. Termination by Mutual Agreement. Termination of the agreement can be made at the mutual agreement of both CONTRACTOR and CITY.
  - b. Termination for Convenience. CITY is entitled to terminate this agreement for convenience, provided that the CITY provides sixty (60) days advance notice to CONTRACTOR of its intent to terminate. In such event, CONTRACTOR shall immediately stop work and CITY shall not be liable to CONTRACTOR except for payment of actual work performed prior to such notice. Anticipatory profits and consequential damages shall not be recoverable by CONTRACTOR.
  - c. Termination upon Default. Upon the occurrence of an event of Default, the non-Defaulting Party shall be entitled to immediately terminate this Agreement. A Party shall be considered in Default of this Agreement upon:
    - (i) A failure by a Party to pay any amount due hereunder, where such failure is not cured within thirty (30) Days after written notice from the other Party of such failure to pay; or
    - (ii) Either Party has (a) commenced a voluntary case under any bankruptcy law, applied for or consented to the appointment of, or the taking of possession by, a receiver, trustee, assignee, custodian or liquidator of all or a substantial part of its assets, (b) failed, or admitted in writing its inability generally, to pay its debts as such debts become due, (c) made a general assignment for the benefit of creditors, (d) been adjudicated bankrupt or has filed a petition or an answer seeking an arrangement with creditors, (e) taken advantage of any insolvency law or shall have submitted an answer admitting the material allegations of a petition in bankruptcy or insolvency proceeding, (f) become subject to an order, judgment or decree for relief, entered in an involuntary case, without the application, approval or consent of such Party any court of competent jurisdiction appointing a receiver, trustee, assignee, custodian or liquidator, for a substantial part of any of its assets and such order, judgment or decree shall continue unstayed and in effect for any period of one hundred eighty (180) consecutive Days, (g) filed a voluntary petition in bankruptcy, (h) failed to remove an involuntary petition in bankruptcy filed against it within one hundred eighty (180) Days of the filing thereof, or (i) become subject to an order for relief under the provisions of the United States Bankruptcy Act, 11 U.S.C. § 301; or
    - (iii) Any Party's actual fraud or other material misconduct in connection with this Agreement or the performance of its obligations under this Agreement; or
    - (iv) Any other default that has a material adverse effect on the non-defaulting Party if such default has not been cured by the defaulting Party within thirty (30) Days after receiving written notice from the non-defaulting Party setting forth, in reasonable detail, the nature of such default and its impact on the non-defaulting Party; provided, however, that, in the case of any such default that is not reasonably capable of being cured within the 30-Day cure period, the defaulting Party shall have additional time as necessary to cure the default if it commences to cure the default within such 30-Day

cure period and it diligently and continuously pursues such cure.

- (v) The purported assignment of this Agreement in a manner inconsistent with the terms of this Agreement.
- d. Upon the occurrence of an Event of Default by a Party, the non-defaulting Party shall have the following rights:
  - (i) To terminate this Agreement by providing at least sixty (60) Days prior written notice to the other Party of its intent to exercise its termination rights, unless such Event of Default is cured prior to the date of termination;
  - (ii) To suspend performance of its obligations and duties hereunder immediately upon delivering written notice to the defaulting Party of its intent to exercise its suspension rights; and
  - (iii) To pursue any other remedy given under this Agreement or now or hereafter existing at law or in equity or otherwise.

5. **DATA OWNERSHIP AND STORAGE.** CONTRACTOR does not own any data obtained or gathered by or through the CITY's use of the Software and Services and any information derived therefrom. CONTRACTOR shall not sell, give away, or transfer any personal customer data or other information obtained by CONTRACTOR through the use of these systems by CITY. CONTRACTOR covenants that any data from the CITY, its employees or those persons or entities using the CITY's transit system through the use of the software, or derived therefrom shall be stored in the United States of America. The data or any information derived therefrom shall not be transferred, moved, or stored to or at any location outside the United States of America.

CONTRACTOR retains control over design elements of the user interface, including but not limited to elements such as bus and stop icons, map colors, banners, point of interest identification, and other related elements.

CONTRACTOR may use information in order to enhance the user experience.

Information may be used in a manner specified by future agreements for platforms that will be jointly agreed upon by the CONTRACTOR and City.

CONTRACTOR will only use information once it has:

- Received permission from customer for such uses
- Removed any personally identifying data

All information is owned by the CITY or its transit customers, and CONTRACTOR agrees not to sell or transfer any CITY or personal customer data.

6. **NATURE OF LICENSING.** CONTRACTOR hereby sells and licenses to CITY and CITY agrees to purchase and license from CONTRACTOR for CITY's purposes a perpetual, site license for the AVL-GPS Software. CONTRACTOR hereby grants to CITY any and all licenses needed for AVL-GPS Project as set forth in Attachment A, which is incorporated herein by reference.

7. **UPGRADES TO SOFTWARE.** CITY is entitled to receive any maintenance updates to the Service that CONTRACTOR may release or provide to its other customers that improves or maintains the stability of the Service ("Updates") at no cost to Customer. If new features that add new functionality to the Service ("Upgrades") are offered for sale to CONTRACTOR'S

other customers, such features will be offered to Customer at or below the prevailing rate. In the case where CONTRACTOR provides new features to Customer at no charge for testing or trial, the continued availability, performance, or usefulness of such features are not guaranteed or warranted by CONTRACTOR and such features may be revoked at any time. CONTRACTOR reserves the right to charge for any significant additional data requests made by the CITY over the course of the contract, including but not limited to bus number changes, route changes, and related additions, deletions, or alterations to system data.

8. **SUNSHINE LAW.** Access to data shall be granted in accordance with Missouri's open records law. The CITY of Columbia Public Works Department Records Custodian shall serve as the custodian of records for open records requests. CONTRACTOR shall provide access to the CITY of Columbia Public Works Department records custodian or his or her designee to all CITY's data and the data to allow for the fulfillment of Sunshine requests. CONTRACTOR shall provide all reasonable requests for information free of charge, including records and contracts data. CONTRACTOR reserves the right to charge CITY or requesting parties for any data requests which present a burden on business operations, including access to database information.
9. **RECORDS RETENTION.**
  - a. Pursuant to Missouri Law, both Parties agree that all records shall be retained in accordance with Missouri law and records retention schedules adopted by the Local Records Board and in accordance with the requirements of the Federal Grant. If there is a conflict between Missouri Law, then applicable retention schedule adopted by the Local Records Board, and the Grant requirements, the longer retention period shall apply.
  - b. Effect of Termination and Records Retention. At the close date for this Agreement, either through contract duration or termination, CONTRACTOR shall provide CITY with all records as defined by law. CONTRACTOR shall provide to CITY at no cost a method of migrating or exporting all electronic records or data in a usable basis in a method and format acceptable to CITY. At CITY's sole option, CITY may choose to negotiate a new contract for ongoing storage and access to all CITY records and data as needed to comply with the Missouri Sunshine Law and the requirements record retention requirements of the Grant or as required by law.
10. **DEVELOPMENT OF ADDITIONAL APPLICATIONS USING DATA.**
  - a. CONTRACTOR shall provide access to data through an API to allow CITY to develop additional applications using the data, to hire others to develop additional applications, to allow members of the public to develop additional applications, including but not limited to work for hire or a contest type event. CONTRACTOR shall provide access to data to allow any such applications to utilize real time transit data.
  - b. Notice of Changes in API. To allow for the functioning of any applications using Data through the API, CONTRACTOR shall notify CITY in advance of any changes in the formatting of the API no later than 30 days prior to the change.

11. **DATA SECURITY.**
- a. CONTRACTOR shall at all times comply with the Contract Documents, Applicable Laws, and City's Cloud Computing Requirements.
  - b. **DUTY TO REPORT.** CONTRACTOR shall maintain the security of CITY content and data and that of CITY's customers and any user that is stored in or in any way connected with Software Products and applications. If either Party believes or suspects that security has been breached or data compromised whether it be from harmful code or otherwise, the Party shall notify the Other Party of the issue or possible security breach within forty-eight (48) hours.
  - c. **BINDING SUBCONTRACTORS AND SUBSIDIARIES TO DATA SECURITY STANDARDS.** CONTRACTOR shall include similar provisions in CONTRACTOR's agreements with subcontractors and subsidiaries that perform work or services related to these Software Products and or the CITY's Data contained therein or in the cloud storage.
12. **NO HARMFUL CODE.** CONTRACTOR warrants that the Software Products do not contain Harmful Code. For purposes of this Agreement, "Harmful Code" is any code containing any program, routine, or device which is designed to delete, disable, deactivate, interfere with or otherwise harm any software, program, data, device, system or service, including without limitation, any time bomb, virus, drop dead device, malicious logic, worm, Trojan horse or trap or back door. CONTRACTOR shall include in contracts with any subcontractor a provision which prohibits the use of Harmful Code.
13. **PAYMENTS.**
- a. ***For the AVL-GPS Project, CITY agrees to pay CONTRACTOR One Hundred sixty-two thousand six hundred eighty-two dollars (\$162,682.00).***
  - b. *All fees will be due and payable no later than thirty (30) days after the date of an invoice received from CONTRACTOR. All amounts paid are nonrefundable provided and subject to CONTRACTOR not being in material breach or violation of this Agreement. CITY will pay all fees in U.S. dollars, and payments shall be sent to the address indicated on the invoice, or as otherwise instructed by CONTRACTOR. CONTRACTOR may withhold services or terminate this Agreement if Customer fails to pay after being provided thirty (30) days written notice of such delinquency and provided CONTRACTOR is not in material breach or violation of this Agreement. Prices do not include applicable state and local sales, use and related taxes. CITY shall be responsible for such taxes or will provide proof of tax exemption with first payment.*
  - c. *CONTRACTOR reserves the right to charge a penalty on any late payments. This penalty can be up to 5% of the total amount of the invoice for every thirty (30) days late.*
15. **CONTRACTOR'S INSURANCE.** The CONTRACTOR shall not commence work under this Contract until they have obtained all insurance required under this paragraph and such insurance has been approved by the CITY, nor shall the CONTRACTOR allow any subcontractor to commence work on the Project until all similar insurance required of subcontractor has been so obtained and approved. All policies shall be in amounts, form,

and with companies satisfactory to the CITY which must carry an **A-6 or better rating as listed in the A.M. Best or equivalent rating guide.**

- a. **WORKERS COMPENSATION INSURANCE:** The CONTRACTOR shall take out and maintain during the life of this Contract **Employers Liability and Workers Compensation Insurance** for all of their employees employed at the site of the work, and in case any work is sublet, the CONTRACTOR shall require the subcontractor similarly to provide Workers Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR.

Workers Compensation coverage shall meet Missouri statutory limits. Employers Liability limits shall be \$500,000.00 each employee, \$500,000.00 each accident, and \$500,000.00 policy limit. In case any class of employees engaged in hazardous work under this Contract at the site of the work is not protected under the Workers Compensation Statute, the CONTRACTOR shall provide and shall cause each subcontractor to provide Employers Liability Insurance for the protection of their employees not otherwise protected.

- b. **COMMERCIAL GENERAL LIABILITY INSURANCE:** CONTRACTOR shall carry Commercial General Liability Insurance written on ISO occurrence form CG 00 01 07 98 or later edition (or a substitute form providing equivalent coverage) and shall cover all operations by or on behalf of the CONTRACTOR, providing insurance for bodily injury liability and property damage liability for the limits indicated below and for the following coverage:

- (1) Premises and Operations
- (2) Products and Completed Operations

Contractual Liability insurance for the obligations assumed by the CONTRACTOR under this Contract.

Personal Injury Liability and Advertising Injury Liability.

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the general aggregate limit shall apply separately to the CONTRACTOR's Project under this Contract. Completed Operations coverage must be maintained for the correction period provided by the agreement.

Limit of Liability. The Commercial General Liability policy limits shall not be less than:

\$1,000,000 Each Occurrence (Combined Single Limit for Bodily Injury and Property Damage)

\$1,000,000 Aggregate for Products/Completed Operations

\$1,000,000 Personal Injury/Advertising Injury

\$1,000,000 General Aggregate (providing endorsement to apply the General Aggregate per project. If not, see Umbrella Liability section.)

Additional Insured CITY, all of its officers, directors and employees, shall be named

## Attachment A

as Additional Insureds under the Commercial General Liability Insurance using ISO Additional Insured Endorsements CG 20 10 or substitute providing equivalent coverage. If additional insured status is required for a correction period then CG 20 37 or equivalent should also be used. These endorsements must be stated on the insurance certificate provided to CITY and a copy of the endorsements confirming coverage should accompany the insurance certificate.

Primary Coverage The CONTRACTOR's Commercial General Liability Policy shall apply as primary insurance and any other insurance carried by CITY shall be excess only and will not contribute with CONTRACTOR's insurance. This must be stated on the insurance certificate and a copy of the endorsement confirming coverage should accompany the insurance certificate.

- c. **BUSINESS AUTOMOBILE LIABILITY INSURANCE:** The policy should be written on ISO form CA 0001, CA 0005, CA 0002, CA0020 or a substitute form providing equivalent coverage and shall provide coverage for all owned, hired and non-owned vehicles. The limit of liability should be at least \$1,000,000 Combined Single Limit for Bodily Injury and Property Damage each accident and should also cover Automobile Contractual Liability. The policy should name CITY and all of its officers, directors and employees as Additional Insured. The policy shall be endorsed to be primary coverage and any other insurance carried by CITY shall be excess only and will not contribute with CONTRACTOR's insurance. To confirm coverage, a copy of the Additional Insured Endorsement should accompany the insurance certificate.
- d. **UMBRELLA EXCESS LIABILITY:** The CONTRACTOR should provide an umbrella excess liability policy that will provide a minimum of \$1,000,000 per occurrence/\$1,000,000 aggregate over the above listed coverages. This policy should "follow-form" of the underlying policies and complies with all insurance requirements of those policies. If the General Aggregate of the Commercial General Liability policy does not apply per project, the umbrella excess limits should be \$2,000,000 per occurrence/\$2,000,000 aggregate.
- e. **WAIVER OF SUBROGATION:** The Commercial General Liability and Automobile Liability policies shall each contain a waiver of subrogation in favor of CITY and its officers, directors and employees.
- f. **CERTIFICATES OF INSURANCE:** As evidence of the insurance, limits and endorsements required, a standard ACORD or equivalent Certificate of Insurance executed by a duly authorized representative of each insurer shall be furnished by the CONTRACTOR to the CITY before any work on this Project is commenced by the CONTRACTOR. CITY shall have the right, but not the obligation, to prohibit CONTRACTOR or any Subcontractor from entering the Project site until such certificates are received and approved by the CITY. With respect to insurance to be maintained after final payment, an additional certificate(s) evidencing such coverage shall be promptly provided to CITY as a precondition to final payment. The Certificate of Insurance shall provide that there will be no cancellation or reduction of coverage without 30 days prior written notice to CITY. The certificate must also contain a description of the Project. Failure to maintain the insurance required herein may result in termination of the Contract at

CITY's option. In the event the CONTRACTOR does not comply with the requirements of this section, CITY shall have the right, but not the obligation, to provide insurance coverage to protect CITY and charge the CONTRACTOR for the cost of that insurance. The required insurance shall be subject to the approval of CITY, but any acceptance of insurance certificates by CITY shall in no way limit or relieve the CONTRACTOR of their duties and responsibilities in this Agreement.

g. **SUBCONTRACTORS:** CONTRACTOR shall cause each Subcontractor to purchase and maintain insurance of the types and amounts specified herein. Limits of such coverage may be reduced only upon written agreement of CITY. CONTRACTOR shall provide to CITY copies of certificates evidencing coverage for each Subcontractor. Subcontractors' commercial general liability and business automobile liability insurance shall name CITY as Additional Insured and have the Waiver of Subrogation endorsements added.

16. **HOLD HARMLESS AGREEMENT.** To the fullest extent not prohibited by law, CONTRACTOR shall indemnify and hold harmless the City of Columbia, its directors, officers, agents, and employees from and against all claims, damages, losses, and expenses (including but not limited to attorney's fees) only to the extent caused by negligence in the performance of professional services by the CONTRACTOR, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with CONTRACTOR or a subcontractor for part of the services), of anyone directly or indirectly employed by CONTRACTOR or by any subcontractor, or of anyone for whose acts the CONTRACTOR or its subcontractor may be liable, in connection with providing these services. This provision does not, however, require CONTRACTOR to indemnify, hold harmless, or defend the CITY from its own negligence. Nothing in this Agreement shall constitute a waiver of sovereign immunity.

17. **NOTICE.** Each notice, request, demand, statement or routine communication required or permitted under this Agreement, or any notice or communication that either Party may desire to deliver to the other, shall be in writing and shall be considered delivered effective: (a) when verified by written receipt if sent by personal courier, overnight courier, or mail; or (b) when verified by automated receipt or electronic logs if sent by facsimile or email.

The designation and titles of the person to be notified or the address of such person may be changed at any time by written notice.

**FOR THE CITY:**

City of Columbia  
Attention: Mary Ellen Lea  
PO Box 6015  
Columbia, MO 65205  
Telephone: (573) 874-7256

**FOR THE CONTRACTOR:**

DoubleMap, Inc.  
Attention: Jeffrey J Kirk II  
2700 Market Tower, 10 W Market St  
Indianapolis, IN 46204  
Telephone: 317-968-5478  
jkirk@bgdlegal.com

- 18. DISPUTE RESOLUTION.** Except as otherwise provided for in this agreement, any disputes concerning a question of fact arising under or related to this Agreement shall be decided in accordance with the following steps. However, by mutual agreement the matter may be taken immediately to a higher step in the dispute resolution process, or mutually agreed to alternative dispute resolution process or litigation.
- a. All disputes shall be initiated through a written dispute notice submitted by either party to the other party.
  - b. Both parties to this Agreement shall attempt in good faith to resolve any dispute promptly through negotiation between executives. Within fourteen (14) days of delivery of the dispute notice, the receiving party shall submit to the other party a written response. Within thirty (30) days of delivery of the dispute notice, the executives of both parties shall meet at a mutually acceptable time and place to attempt to resolve the dispute. All reasonable requests for information by one party to the other shall be honored.
  - c. If the parties agree, disputes may be resolved by a mutually-agreed alternative dispute resolution process, including structured negotiations, mediation, or arbitration.
  - d. The parties may agree that the decision of the arbitrator shall not be binding and that either party shall have the right to remedies provided by law.
- 19. AMENDMENT.** No amendment, addition to, or modification of any provision hereof shall be binding upon the Parties, and neither Party shall be deemed to have waived any provision or any remedy available to it unless such amendment, addition, modification or waiver is in writing and signed by a duly authorized officer or representative of the Parties.
- 20. ASSIGNMENT.** This Agreement shall inure to the benefit of and be binding upon the Parties and their respective successors and permitted assigns. Neither Party shall assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party.
- 21. SEVERABILITY.** If any of the terms of this Agreement are finally held or determined to be invalid, illegal or void, all other terms of the Agreement shall remain in effect; provided that the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties.
- 22. NO THIRD PARTY BENEFICIARY.** This Agreement is intended solely for the benefit of the Parties hereto and nothing contained herein shall be construed to create any duty to or standard of care with reference to, or any liability to, or any benefit for, any Person not a Party to this Agreement.
- 23. GOVERNING LAW.** This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable. The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri, or the United States Western District of Missouri. The Parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of

Missouri and waive any defense of forum non conveniens.

24. **NATURE OF CITY'S OBLIGATIONS.** All obligations of the City under this Agreement, which require the expenditure of funds, are conditional upon the availability of funds budgeted and appropriated for that purpose.
25. **GENERAL LAW S.** CONTRACTOR agrees to comply with all applicable laws, rules, regulations, ordinances, and statutes of the United States, State of Missouri, and City of Columbia, Missouri.
26. **EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED.** CONTRACTOR agrees to comply with Missouri State Statute section 285.530 in that they shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri. As a condition for the award of this contract the CONTRACTOR shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. CONTRACTOR shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. CONTRACTOR shall require each subcontractor to affirmatively state in its contract with CONTRACTOR that the subcontractor shall not knowingly employ, hire for employment or continue to employ an unauthorized alien to perform work within the state of Missouri. CONTRACTOR shall also require each subcontractor to provide CONTRACTOR with a sworn affidavit under the penalty of perjury attesting to the fact that the subcontractor's employees are lawfully present in the United States.
27. **AMERICANS WITH DISABILITIES ACT.** CONTRACTOR's Software Products and applications shall comply with the requirements of the Americans with Disabilities Act and comply with the requirements of any rules or regulations of the federal, state, or local government related thereto.
28. **COMPLIANCE WITH GRANT REQUIREMENTS.** The Parties agree that the CITY obtains grant funding from the United States Department of Transportation (hereinafter, "FTA") and that FTA funds are used to support the bus system. CONTRACTOR shall comply with all conditions and requirements of the Grant, including, but not limited to those set forth herein. CONTRACTOR shall include in contracts with subcontractors provisions that require subcontractors to comply with the requirements of this section.
  - a. CONTRACTOR shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation, those listed directly or by reference in the Agreement between the City and FTA (FTA MA (18) dated October 1, 2011), as they may be amended or promulgated from time to time during the term of this Contract. CONTRACTOR's failure to so comply shall constitute a material breach of this Contract
  - b. **CIVIL RIGHTS.**
    1. Nondiscrimination. In accordance with Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332, the Contractor agrees

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that it will not discriminate against any employee or applicant for employment because of race, color, creed, national origin, sex, age, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations and other implementing regulations that the Federal Transit Administration (FTA) may issue.

2. Equal Employment Opportunity. The following equal employment opportunity requirements apply to this Contract:

Race, Color, Creed, National Origin or Sex. In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. §2000e, et seq., and Federal transit laws at 49 U.S.C. §5332, the Contractor agrees to comply with all applicable equal opportunity requirements of the U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor" 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect activities undertaken in the course of the Project. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Age. In accordance with Section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623 and Federal transit law at 49 U.S.C. §5332, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

Disabilities. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. §12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FTA may issue.

ADA Access Requirements. In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112 and section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, the Contractor agrees that it will comply with the requirements of U.S. Department of Transportation regulations, "Transportation Services for Individuals with Disabilities (ADA)," 49 CFR Part 37; and U.S. Department of Transportation regulations, "Americans with Disabilities Accessibility Specifications for Transportation Vehicles," 36 CFR Part

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1192 and 49 CFR Part 38, pertaining to facilities and equipment to be used in public transportation. In addition, the Contractor agrees to comply with the requirements of 49 U.S.C. § 5301 (d) which expresses the Federal policy that the elderly and persons with disabilities have the same right as other persons to use mass transportation services and facilities, and that special efforts shall be made in planning and designing those services and facilities to implement transportation accessibility rights for elderly persons and persons with disabilities. CONTRACTOR shall make the services, programs, and activities governed by this agreement accessible to the disabled as required by the Americans with Disabilities Act and its implementing regulations.

- c. **DEBARMENT AND SUSPENSION CERTIFICATION.** The Contractor, its principals and any affiliates, shall certify that it is not included in the "U.S. General Services Administration's List of Parties Excluded from Federal Procurement or Non-procurement Programs," as defined at 49 CFR Part 29, Subpart C. The Contractor agrees to refrain from awarding any subcontract of any amount (at any tier) to a debarred or suspended subcontractor, and to obtain a similar certification from any subcontractor (at any tier) seeking a contract exceeding \$25,000. The Contractor agrees to provide the City a copy of each conditioned debarment or suspension certification provided by a prospective subcontractor at any tier, and to refrain from awarding a subcontract with any party that has submitted a conditioned debarment or suspension certification until FTA approval is obtained. Contractor also agrees to comply with any implementing requirements FTA may issue.
  
- d. **DISADVANTAGED BUSINESS ENTERPRISE (DBE).** This Contract is subject to the requirements of Title 49, Code of Federal Regulations, Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs. The national goal for participation of Disadvantaged Business Enterprises (DBE's) is 10 percent. The City's overall goal for DBE participation is 12.5 percent. A separate contract goal has not been established for this procurement. CONTRACTOR shall not discriminate on the basis of race, color national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this DOT-assisted contract. Failure by the CONTRACTOR to carry out these requirements is a material breach of this Contract, which may result in the termination of this Contract or such other remedy as the City deems appropriate. Each subcontract the CONTRACTOR signs with a subcontractor must include the assurance in this paragraph (see 49 C.F.R. 26.13(b)). CONTRACTOR shall be required to report its DBE participation obtained through race-neutral means throughout the Term. CONTRACTOR is required to pay its subcontractors performing work related to this contract for satisfactory performance of that work no later than 30 days after the CONTRACTOR's receipt of payment for that work from CITY. CONTRACTOR must promptly notify CITY whenever a DBE subcontractor performing work related to this contract is terminated or fails to complete its work and must make good faith efforts to engage another DBE subcontractor to perform at least the same amount of work. CONTRACTOR may not terminate any DBE subcontractor and perform that work through its own forces or those of an affiliate without the prior written consent of CITY.

- e. **DISCLAIMER OF FEDERAL GOVERNMENT OBLIGATIONS OR LIABILITY.** CONTRACTOR, and any subcontractors acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of this contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to the CONTRACTOR, or any other party (whether or not a party to this Contract) pertaining to any matter resulting from this Contract. It is further agreed that the clause shall be included in each subcontract and shall not be modified, except to identify the subcontractor who will be subject to its provision.
- f. **ENVIRONMENTAL REGULATIONS**
1. **Clean Air.** CONTRACTOR agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §7401 et seq. CONTRACTOR agrees to report, and to require each subcontractor at every tier receiving more than \$100,000 from this Contract to report any violation of these requirements resulting from any project implementation activity to CITY. CITY will in turn, report each violation as required to assure notification to FTA and the appropriate U.S. EPA Regional Office.
  2. **Clean Water.** CONTRACTOR agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 1251 et seq. CONTRACTOR agrees to report, and require each subcontractor at every tier receiving more than \$100,000 from this Contract to report any violation of these requirements resulting from any project implementation activity to the CITY. CONTRACTOR understands that the CITY will in turn, report each violation as required to assure notification to FTA and the appropriate U.S. EPA Regional Office.
  3. **Energy Conservation.** CONTRACTOR agrees to comply with mandatory standards and policies relating to energy efficiency, which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.
  4. **Recovered Materials/Recycle Products.** CONTRACTOR agrees to comply with all the requirements of Section 60002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247.
- g. **FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS.** CONTRACTOR acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. § 3801 et seq. and U.S DOT regulations, "Program Fraud Civil Remedies," 49 CFR Part 31, apply to its actions pertaining to the Project. Upon execution of the Contract, CONTRACTOR certifies and affirms the truthfulness and accuracy of any statement it has made, it makes, or may make pertaining to the project covered under this Contract. In addition to other penalties that may be applicable, CONTRACTOR further acknowledges that if it makes a

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false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on CONTRACTOR to the extent the Federal Government deems appropriate. CONTRACTOR also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government in connection with this Contract, the Government reserves the right to impose on the Contractor the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307(n)(1), to the extent the Federal Government deems appropriate. CONTRACTOR agrees to include these clauses in each subcontract, and it is further agreed that the clauses shall not be modified, except to identify the subcontractor who will be subject to the provisions.

- h. **INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION TERMS.** The provisions in this Contract include certain standard terms and conditions required by the U.S. Department of Transportation (DOT), whether or not expressly set forth. All contractual provisions required by DOT, as set forth in FTA Circular 4220.1E or any revision thereto, are hereby incorporated by reference. Anything to the contrary herein notwithstanding and to the extent allowed by law, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in the Contract. CONTRACTOR shall not perform any act, fail to perform any act, or refuse to comply with any the CITY requests that would cause the CITY to be in violation of the FTA terms and conditions.
- i. **LOBBYING RESTRICTIONS.** CONTRACTOR is bound by its certification contained in its offer to the CITY regarding the use of federal or non-federal funds to influence, or attempt to influence any federal officer or employee regarding the award, execution, continuation, or any similar action of any federal grant or other activities as defined in 31 U.S.C. 1352, and 49 CFR Part 20. CONTRACTOR agrees to comply with this requirement throughout the term of the Contract. CONTRACTOR shall obtain the same certification and disclosure required by the LOBBYING RESTRICTIONS from each subcontractor and shall file the required certifications and disclosures with the CITY.
- j. **NATIONAL INTELLIGENT TRANSPORTATION SYSTEMS ARCHITECTURE AND STANDARDS.** CONTRACTOR agrees to conform, to the extent applicable, to the National Intelligent Transportation Systems (ITS) Architecture and Standards as required by SAFETEA-LU § 5307(c), 23 U.S.C. § 512 note, and CONTRACTOR agrees to comply with FTA Notice, "FTA National ITS Architecture Policy on Transit Projects" 66 Fed. Reg. 1455, January 8, 2001, and any further implementing directives, except to the extent FTA determines otherwise in writing.
- k. **PRIVACY ACT REQUIREMENTS.** CONTRACTOR agrees to comply with, and assures the compliance of its employees and subcontractors with the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552. Among other things, CONTRACTOR agrees to obtain the express consent of the CITY and/or the Federal Government before the CONTRACTOR or its employees operate a system of records on behalf of the CITY or Federal Government. CONTRACTOR understands that the requirements of the Privacy Act, including the civil

and criminal penalties for violation of that Act, apply to all individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying Agreement. CONTRACTOR agrees that strict privacy will be maintained in the collection, storage, use, transfer, access to and/or security of information protected by the Privacy Act. CONTRACTOR agrees to protect such information, and to limit the use of the information to that required by the contract.

- l. **RECORD RETENTION AND ACCESS.** CONTRACTOR agrees that, during the course of this agreement and any extensions thereof, and for three years thereafter, it will maintain intact and readily accessible all data, documents, reports, records, contracts, and supporting materials relating to this Contract. In the event of litigation or settlement of claims arising from the performance of this Contract, CONTRACTOR shall maintain same until such litigation, appeals, claims or exceptions related thereto have been disposed of. CONTRACTOR shall permit the CITY, the Secretary of Transportation, the FTA Administrator, the Comptroller General of the United States, and, the CITY to inspect all work, materials, sites, payrolls, and other data and records, and to audit the books, records, and accounts of CONTRACTOR relating to its performance under this Contract. CONTRACTOR shall permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- m. **SEAT BELT USE POLICY.** CONTRACTOR agrees to comply with terms of Executive Order No. 13043 "Increasing Seat Belt Use in the United States".
- n. **TEXTING WHILE DRIVING AND DISTRACTED DRIVING.** Consistent with Executive Order No. 13513, "Federal Leadership on Reducing Text Messaging While Driving," October 1, 2009, 23 U.S.C. Section 402 note, and DOT Order 3902.10, "Text Messaging While Driving," December 30, 2009, CONTRACTOR agrees to promote policies and initiatives for its employees and other personnel that adopt and promote safety policies to decrease crashes by distracted drivers, including policies to ban text messaging while driving, and to encourage each subcontractor to do the same.
- o. **BUY AMERICA.** CONTRACTOR shall comply with 49 U.S.C. §5323(j), and 49 CFR. Part 661, which provide that federal funds may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7 and include final assembly in the United States for 15 passenger vans and 15 passenger wagons produced by Chrysler Corporation, microcomputer equipment & software. Separate requirements for rolling stock are set out at 5323(j) (2) (C) and 49 CFR Part 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a 60 percent domestic content.

**29. CONTRACTOR'S REPRESENTATIONS AND WARRANTIES.** CONTRACTOR represents and warrants as follows:

- a. CONTRACTOR is a corporation organized in the State of Indiana with authority to transact business in the State of Missouri;

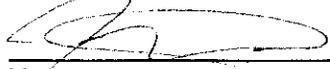
## Attachment A

- b. CONTRACTOR has the power and authority to enter into and perform this Agreement and is not prohibited from entering into this Agreement or discharging and performing all covenants and obligations on its part to be performed under and pursuant to this Agreement;
  - c. CONTRACTOR has taken all action required by law in order to approve, execute and deliver this Agreement;
  - d. The execution and delivery of this Agreement, the consummation of the transactions contemplated herein and the fulfillment of and compliance by CONTRACTOR with the provisions of this Agreement will not conflict with or constitute a breach of or a default under or require any consent, license or approval that has not been obtained pursuant to any of the terms, conditions or provisions of any law, rule or regulation, any order, judgment, writ, injunction, decree, determination, award or other instrument or legal requirement of any court or other agency of government, the documents of formation of CONTRACTOR or any contractual limitation, restriction or outstanding trust indenture, deed of trust, mortgage, loan agreement, lease, other evidence of indebtedness or any other agreement or instrument to which CONTRACTOR is a party or by which it or any of its property is bound and will not result in a breach of or a default under any of the foregoing;
  - e. CONTRACTOR has taken all such action as may be necessary or advisable and proper to authorize this Agreement, the execution and delivery hereof, and the consummation of transactions contemplated hereby;
  - f. To CONTRACTOR's knowledge, there are no actions, proceedings, judgments, rulings or orders issued by, or pending before any court or other governmental body that would materially adversely affect CONTRACTOR's ability to perform its obligations under this Agreement; and
  - g. This Agreement is a legal, valid and binding obligation of CONTRACTOR enforceable in accordance with its terms, except as limited by laws of general applicability limiting the enforcement of creditor's rights or by the exercise of judicial discretion in accordance with general principles of equity.
- 30. USE OF SUBCONTRACTORS.** None of the work or services covered by this Agreement shall be subcontracted without the prior written approval of the CITY and any work or services so subcontracted shall be subject to the provisions of this Agreement. Any subcontractor performing work under this contract at the direction of the CONTRACTOR shall file a "Final Receipt of Payment and Release" form. This completed form shall be submitted to the CITY along with application for final payment.
- 31. ENTIRE AGREEMENT.** This Agreement represents the entire and integrated Agreement between the CITY and CONTRACTOR for the Equipment to Order. All previous or contemporaneous agreements, representations, promises and conditions relating to services described herein are superseded.

IN WITNESS WHEREOF, the PARTIES have hereunto set their hands and seals the day and year first above written.

CONTRACTOR  
(Seal)

**DoubleMap, Inc.**



Name: \_\_\_\_\_

By: Ilyse Bekhter

Title: CEO

ATTEST: Wilma L. Manson

CITY OF COLUMBIA, MISSOURI



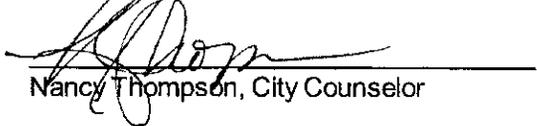
By: \_\_\_\_\_  
Will Hobart, Purchasing Agent

ATTEST:



Sheela Amin, City Clerk

APPROVED AS TO FORM:

  
Nancy Thompson, City Counselor

I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, that is, account Project #C47036, Acct #5536188881998 and that there is an unencumbered balance to the credit of such account sufficient to pay the same.

  
John Blattel, Director of Finance

*JJ*  
7/1/13

**DoubleMap Contract Scope – Short Version**

1. DoubleMap AVL (36 Units)
  - a. Payment of DoubleMap License in full
  - b. MDT
  - c. Locking Enclosure
  - d. Wiring Harness
  - e. Server Configuration
  - f. Cellular Site Assessment
  - g. Data Transmission
  - h. Training
  - i. Shipping
  - j. Project Management
  - k. Professional Installation
  - l. Mobile Applications
  - m. Ad hoc Route/Stop Creator
  - n. Run/Block Scheduling
  - o. Smoothing Algorithm
  - p. Estimated Time of Arrival (ETA) algorithm
  - q. Historical Reporting Module
  - r. Geofence Triggers
  - s. Announcement Module
2. Requested Mobile License Additions
  - a. Global Patent Protection
  - b. Public API Feed
3. One-Time Requested Complete Training
  - a. On-Site Training for Full Week
  - b. Video Tutorial for Download
  - c. Columbia-Tailored MDT Manual

32. **Attachment A**  
**Attachment A**

33.  
34.  
35.  
36.  
37.  
38.



Item	Unit Price	Units	One Time Price	Annual Price	5 Years	Amount with Discount for Initial Payment
DoubleMap AVL Software			\$100,000			
AVL Equipment and Installation	\$1,060.61	36	\$38,182			
Requested Mobile License Additions		1	\$10,000			
Requested Complete Training		1	\$14,500			
<b>Grand Total for AVL</b>			<b>\$162,682</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

#### External Cloud Policies

When the City of Columbia purchases services from an external cloud provider, as defined in this cloud strategy, the following policies must be followed:

##### 2.0 Responsibilities of the City of Columbia

The City of Columbia will carry out the following tasks for every external cloud deployment as defined in this cloud strategy

- 2.1 The City of Columbia will establish a written agreement with the cloud vendor. This agreement will explicitly state the responsibilities of the vendor.
- 2.2 Prior to deployment, the City of Columbia will identify the regulations and standards that in force over the data or systems that may be moved to an external cloud. The City of Columbia will develop procedures and agreements with the cloud vendors to ensure compliance with all applicable regulations and standards.
- 2.3 The City of Columbia will establish an acceptable time frame for the vendor to respond to open records requests
- 2.4 The City of Columbia will establish a plan for the lifecycle of the service. The plan for the end of the service shall include what data will be extracted from the service, how data will be delivered, how the vendor will destroy data, and the price for these services. Data extracted from any system shall include transactional metadata, such as when data was added or changed and by whom.
- 2.5 The City of Columbia will calculate the anticipated load that will be placed on the City of Columbia internet connection. If the internet connection cannot handle the load a load management plan will be created and implemented prior to service implementation.
- 2.6 The City of Columbia will establish a business continuity plan that can be put into effect if the service ever becomes unavailable.
- 2.7 The City of Columbia shall manage all user accounts for the service. User accounts shall be managed through the existing security track procedures.

##### 3.0 Responsibilities of the Vendors

All external cloud vendors, defined as vendors providing any cloud services as defined in this strategy to the City of Columbia must adhere to the following policies

##### 3.1 Records Requests

- 3.1.1 The vendor will respond to records request within the timeframe stated in the agreement. The vendor will accept liability if the records request is not fulfilled in the agreed upon timeframe.

##### 3.2 Using City of Columbia Domain Names

- 3.2.1 All cloud deployments that are intended to perform a service for our customers will be deployed using the gocolumbiamo.com domain name.
- 3.2.2 The City of Columbia IT Department will be the sole entity responsible for the gocolumbiamo.com domain name. The cloud vendor shall not expect to maintain DNS records belonging to the City of Columbia
  - 3.2.2.1 The cloud vendor will provide the IP addresses used for the service prior to deployment. The City of Columbia IT Department will update the gocolumbiamo.com domain records accordingly.
  - 3.2.2.2 The cloud vendor shall not change the addresses used with a frequency of greater than once per year
  - 3.2.2.3 The cloud vendor shall notify the City of Columbia IT department in writing on official letterhead 30 days in advance of any IP address changes
  - 3.2.2.4 The cloud vendor will use the gocolumbiamo.com only for the business purposes authorized by this agreement
- 3.2.3 Email from gocolumbiamo.com

When sending email from the service using the gocolumbiamo.com domain name, the following additional policies will be in effect

- 3.2.3.1 The cloud vendor will provide the IP addresses from which email will be sent. The City of Columbia IT Department will use this information to update the gocolumbiamo.com SPF record.
- 3.2.3.2 The addresses provided to the City of Columbia as required in 3.2.3.1 shall be only those IP addresses that are used to send email using the gocolumbiamo.com domain name.

**Purchasing Contract #19/2013**

3.2.3.3 The City of Columbia will update the gocolumbiamo.com SPF records according to the same policies and timelines as defined in 3.2.2 of this policy.

3.2.3.4 The cloud vendor will take all reasonable precautions to ensure that SPAM is not sent using the gocolumbiamo.com domain or from any IP address under cloud vendor control that has been associated with the gocolumbiamo.com domain.

3.2.3.5 The cloud vendor will react to email abuse reports in a timely manner

**3.3 Standards and Regulations**

3.3.1 The cloud vendor will adhere to relevant standards. For example, SaaS vendors deploying products over the web shall adhere to OWASP or similar standards.

3.3.2 The cloud vendor shall take responsibility for all regulatory compliance.

3.3.3 The cloud vendor shall conduct regular security audits of their systems. The security audits shall include internal and external review of system security and the security of all code used by the vendor. The vendor shall react promptly to mitigate the vulnerabilities identified by security audits.

**3.4 System Integration**

When an external cloud deployment requires access to existing information system infrastructure the following policies must be followed

3.4.1 Software should run with least possible privilege. For example, if database access needs to be given, the system account should have the least possible privilege; it should not run as a user that has access to schema outside of its need.

3.4.2 System account names should not be easily guessed. Passwords for these accounts should not be easily guessed and should be different from other customers with the same product. Connections from system accounts should be, where appropriate and possible, controlled via access lists.

**3.5 Deployment and Customization**

3.5.1 The cloud vendor shall disclose any authentication information that exists by default. The cloud vendor shall work with the City of Columbia to remove or change these accounts from their default values. The vendor shall not deploy services to the City of Columbia where system accounts are shared with other entities.

**3.6 Encryption**

3.6.1 Cloud vendor shall establish a suitable data encryption scheme for data in transit between the City of Columbia, its customers, and the vendor. The City of Columbia will determine the suitability of the encryption scheme.

3.6.2 Cloud vendor shall establish a suitable encryption for City of Columbia data while in storage for both live and backup media. The City of Columbia will determine the suitability of the encryption scheme.

3.6.3 No encryption scheme will be considered suitable if City of Columbia data can be recovered using the same decryption key as that of another customer of the cloud vendor.

**3.7 Incident Preparation**

3.7.1 The cloud vendor will take responsibility for keeping their system software up to date. Vendors should monitor relevant discussion boards and mailing lists for security problems with products they use.

3.7.2 The cloud vendors shall have a method for customers and others to report security problems. This method should be well publicized and accessible. Vendors should have a method for prioritizing and acting on reports of security problems.

3.7.3 The cloud vendors shall have a method for correcting discovered vulnerabilities. Vulnerabilities should be prioritized and corrected based on the risk vulnerability exploitation would pose to its customers. Vulnerability mitigation efforts should be tested by the vendor, as appropriate, prior to their release.

**3.8 Incident Response**

3.8.1 The cloud vendor will take responsibility for security incident handling if their system is compromised.

3.8.2 The cloud vendor shall immediately notify the City of Columbia of any breaches and will advise what information has been compromised. If this information is later found to be inaccurate the cloud vendor will immediately notify the City of Columbia with the correct information.

## **Attachment A**

### **Attachment B**

3.8.3 If investigation, containment, and eradication efforts by the City of Columbia incur costs while fault lies with the cloud vendor, the cloud vendor will assume the costs.

3.8.4 The cloud vendor will provide a rapid contact method for reporting suspected abuse, 24x7x365. The cloud vendor will react in a timely manner to abuse reports from the City of Columbia

3.8.5 The cloud vendor will provide their incident response plans. Response plans will include procedures for both security incident and disaster incident response.



Columbia Transit

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Cover Letter

DoubleMap appreciates the opportunity to define its innovative platform to the key decision-makers at Columbia Transit. In the technology age, companies that do not adapt to the most innovative technology find a rapid demise. After observing Digital Recorders bankruptcy, transit managers realized that their industry's vendors also require constant improvement to stay competitive. DoubleMap entered a transportation niche overwhelmed by vendors using antiquated hardware and software. While certain systems cannot adapt, DoubleMap's model requires it. DoubleMap's lead software architect worked for Google's maps division, driving his team to create a complete AVL and AVA solution with a Google approach. For example, while most AVL providers restrict the frequency that data refreshes for customers and riders, DoubleMap constantly seeks to improve the frequency of the refresh rate to farther below the one to two seconds, which DoubleMap believes is the future of intelligent transportation systems.

DoubleMap's team has directed project management on three continents with companies in the fortune 500. DoubleMap's team has also installed vehicles from California to Washington DC. DoubleMap will provide BTPC with a comprehensive software and hardware suite including: Automatic Vehicle Location (AVL) and Automatic Voice Annunciator (AVA) and Mobile Data Terminals (MDTs). DoubleMap will install and launch its AVL, AVA, MDT according to the timeline provided, but Double may accelerate its own delivery based on the proximity of Bloomington and the installation team.

After DoubleMap has been installed, positive results attributed to the DoubleMap system after installation include: 20% to 30% increase in year-over-year ridership, 90% decrease in calls and complaints, and most importantly, renewed trust in the transportation system based on the visually appealing, constantly-refreshing mobile interface. DoubleMap is willing to commit significant on-site and off-site resources to ensure Columbia Transit receives the system they envision.

The DoubleMap hardware and software application discussed here has proved compelling to numerous public and university transit systems based on its selection in competitive RFP processes. The overwhelming support is the capability of the nimble solution to adapt to a transit system's unique needs, as well as needs not yet known by a transit administrator. Columbia Transit system will be well-positioned to pivot in any direction based on the DoubleMap platform today and in ten years.

Sincerely,  
Ilya Rekhter

A handwritten signature in black ink, appearing to read 'Ilya Rekhter', written over a horizontal line.

DoubleMap, Inc.

Columbia Transit



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1100 Waterway Blvd.  
Indianapolis, IN 46202

Columbia Transit



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## 2.4 TECHNICAL REQUIREMENTS

### A. GENERAL

1. *The proposed components must be compatible and in accordance with the specifications and Requirements described in this RFP.*

DoubleMap agrees to meet the requirements listed in this section.

2. *Columbia Transit has a very small vehicle spare ratio during the peak service calendar. Peak service calendar is defined as any dates that the University of Missouri is in regular academic session (typically: August 15 – December 17, and January 17 – May 17). Installation of hardware on vehicles will need to be performed outside of the peak service calendar, during scheduled academic breaks (Spring Break for example) or outside of operating hours. It is Columbia Transit's desire for all components purchased and installed to be fully operational by July 1st, 2013.*

The DoubleMap system is fully turn-key solution, and has a successful history of installing off-peak hours. Additional information on the DoubleMap install procedure can be found in the AVL Labor section of Component #1 below.

Further information on the DoubleMap implementation timeline can be found in section 3.2, subsection A: Program Management/Project Approach.

3. *Contractor is responsible for complete delivery, setup, configuration, and installation of software and hardware required for the system(s) to be functional.*

DoubleMap agrees to meet the requirements listed in this section.

4. *Workmanship and appearance of work throughout shall be of the best commercial quality and adhere to the latest edition of all applicable standards and codes.*

DoubleMap agrees to meet the requirements listed in this section.

5. *Work shall be performed by qualified personnel, and shall be supervised by technically competent, trained, experienced personnel at all times.*

DoubleMap will provide a qualified install base and has a proven track record of successful implementations. Additional information on the DoubleMap personnel who will be working directly with Columbia Transit can be found in part 3.1, section B.

6. *All equipment and components shall be easily accessible for adjustment and ongoing service.*

DoubleMap provides a key differentiator in this area through the use of a unified MDT for AVL, AVA, and APC integration. The MDT is also hot-swappable, which results in straight-forward adjustments, ongoing service, and support.

Columbia Transit



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- 7. All contractors/subcontractors must provide a smooth and seamless data transmission between communications devices and software applications.*

The only subcontractor that DoubleMap will be working with at Columbia Transit will be from Urban Transit Associates (UTA). UTA will be providing the APC component of the DoubleMap system, and will provide in-depth installation and communication insights into their hardware.

The APC's will communicate directly with the MDT through a Bluetooth wireless signal provided by DoubleMap. Otherwise, DoubleMap will provide the remainder of the data transmission between communication devices and software applications, so data loss will be accounted for.

- 8. Hardware must be interchangeable /transferable between Columbia Transit vehicles (buses and vans).*

DoubleMap provides a hot-swappable solution that can be taken from one vehicle to another in seconds. The DoubleMap MDT only requires one power connector (from the DoubleMap wiring harness) to operate, and sits in a lockable housing to prevent against theft.

However, if Columbia Transit ever sees the need (or demand) to reposition a DoubleMap MDT from one vehicle to another, the only required action will be to unlock the casing and place the MDT into the wiring harness and casing in the desired vehicle.

- 9. With respect to all contracts involving the provisions of Intelligent Transportation Systems (ITS), Contractor agrees to conform to the ITS National Architecture, as promulgated by the US DOT, ITS Joint Program Office. (if necessary, Columbia Transit shall be allowed to extend such access and use to third parties for integration purposes).*

DoubleMap agrees to meet the requirements listed in this section.

- 10. All equipment must be current production/state-of-the-art, commercially rated and manufactured by well-established and reputable manufacturers.*

All components of the DoubleMap solution represent equipment capable of withstanding the taxing environment on a transit fleet and have been sourced from premier organizations. DoubleMap has formally partnered with several organizations to develop the hardware, software, and service components; including major organizations such as Google Transit, Gillig, Verizon Cellular, Verizon Blank Slate, and Urban Transportation Associates, to name a few.

- 11. Equipment and parts must be readily available for the expected lifespan of the systems needed for repair, replacement and/or expansion/upgrades.*

Sometimes, even the best software providers face issues with hardware support. For example, a vendor could have created their system using hardware that is at its end-of-life (EOL) or is in the process of being sunset/retired by the manufacturer.

This may causes several issues: 1) replacement parts may be tough to come by or may take extended periods of time to obtain 2) new features cannot be added due to a depleted

Columbia Transit



development community 3) new features cannot be added due to the manufacturer losing interest in the platform or pursuing a different approach.

To this point, DoubleMap is built on the open-source Android operating system, and is fully compliant with all Google methodologies. This integration with Google and Android provides DoubleMap with the largest development community for future feature development, allows the DoubleMap software to be compatible with over 100 hardware part sources.

The DoubleMap system and hardware will be supported well beyond the length of this contract and will allow Columbia Transit to adapt with change as opposed to being pigeon-holed into utilizing outdated hardware.

Additionally, it is important to note that regardless of which vendor you select, Columbia Transit will be paying for an "intelligent" onboard piece of hardware and the cellular connection that accompanies it.

To us at DoubleMap, this means that every piece of technology purchased by Columbia Transit moving forward should be able to tap into DoubleMap's cellular capability and real-time processing capability. However, many vendors offer closed systems, which will require Columbia Transit to buy separate "smart" computers, and pay for additional lines of cellular service.

This is similar to buying a separate internet connection for your home printer – it should be able to "talk" to your computer and use the common internet connection. In turn, DoubleMap allows devices to talk to our MDT and utilize its internet connection – allowing for a lower cost of obtaining future hardware.

This example is particularly important for Columbia Transit because it will allow for the AVA system to tap into the MDT and synchronize with existing AVL data for retrieving stop announcement information in real time. This will greatly reduce the workload necessary to make both systems operate and will help simplify the installation and future replacement processes.

12. *Equipment requiring adjustments shall be securely installed using tamper-proof containers, fasteners, etc.*

DoubleMap has completely locked down the MDT to prevent tampering and has developed an ignition-based on/off functionality to allow for the system to work autonomously and without reliance on constant human interaction.

The MDT is located within a locking enclosure that also houses the wiring harness – and prevents both from being disconnected or stolen from the vehicle.

13. *Contractor must include all vehicle wiring and connectors required for the equipment. The wiring and connectors should be appropriate to harsh transit environments.*

All of DoubleMap's wiring has been designed for transit conditions, so the requirements in this section will be met if awarded the contract.

Columbia Transit



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14. *All equipment modules, cables, mounting hardware and connectors shall be designed to withstand the full range of internal and external operating environments found in the areas in which they are to be installed, and shall not interfere with the operation of existing and future equipment.*

DoubleMap agrees to the requirements set forth in this section.

15. *All on-board equipment should operate properly under the environmental conditions encountered on-board the vehicles, including but not limited to extreme temperatures, humidity, dust dirt, power variations, shock and vibration.*

DoubleMap agrees to the requirements set forth in this section.

16. *Cabling and equipment exposed to the weather shall be adequately protected from wind, rain, and dust. Shielded Cables must be provided where necessary to avoid interference problems.*

DoubleMap agrees to the requirements set forth in this section.

17. *Any required antennas shall be securely mounted on the exterior of the vehicle. The mounting and sealants shall be impervious to physical and chemical attack by automatic bus washing equipment.*

DoubleMap agrees to the requirements set forth in this section.

18. *On-board hardware will be configured to eliminate the possibility of power being turned off or disconnected.*

DoubleMap's hardware has been designed to turn on an off with the ignition (with a battery backup option) in order to prevent manual disconnections. Additionally, all physical power buttons on the MDT have been disabled.

19. *Components shall be replaceable at the module level eliminating the removal of additional bus components to replace the failed module.*

DoubleMap agrees to the requirements set forth in this section.

20. *Each connector in a given physical location shall be keyed or otherwise configured as to prevent inadvertent, incorrect wiring during installation or maintenance.*

DoubleMap agrees to the requirements set forth in this section.

21. *Each component module/subsystem distinctly defined in these specifications shall be replaceable as a discrete unit.*

DoubleMap agrees to the requirements set forth in this section.

22. *Each electronically addressable component module subsystem shall be electronically identified by a unique serial number.*

DoubleMap agrees to the requirements set forth in this section.

Columbia Transit



23. *General Software Requirements - The Contractor Shall provide standard software wherever possible to meet the functional requirements set forth in this specification.*

- a. All standard software and any new software that must be developed to meet these requirements must be approved by Columbia Transit prior to selection and development, respectively.*

DoubleMap agrees to the requirements set forth in this section.

- b. The software provided shall comply with industry standards produced by national or international organizations, such as Institute of Electrical and Electronics Engineers (IEEE), International Standards Organization (ISO), or Open Systems Foundation(OSF).*

DoubleMap agrees to the requirements set forth in this section.

- c. The applications programs and software shall use industry standard interfaces to the applications.*

DoubleMap agrees to the requirements set forth in this section.

- d. All operating system, database management systems, utilities, and network software shall be commercially available, standard off-the-shelf products produced by well-established and reputable suppliers.*

Each component that DoubleMap has proposed using is widely-accepted, including the robust off-the-shelf software platforms. Specifically, DoubleMap utilizes software components for the AVL backend, MDT, and APC reporting modules.

AVL Platform:

DoubleMap designed the AVL backend using the CakePHP open source web application framework. It is written in PHP, modeled after the concepts of Ruby on Rails, and distributed under the MIT License. The CakePHP is an off-the-shelf framework and is currently utilized for web application by numerous organizations, including Sony, the Iowa State Government, and AskMen.

Mobile Data Terminal:

DoubleMap has designed the MDT software around Google's Android framework and supports all Android versions 2.3 to current. Android is open source, has the single largest development community, and is compatible with over 100 unique hardware part sources. The entire operating system is supported, and constantly updated by Google, one of the largest and most innovative companies in the world. DoubleMap's chief software architect maintains a strong relationship with Google based on past employment; therefore, DoubleMap benefits from an in-depth understanding regarding Google's hardware (Nexus) and software.

Columbia Transit



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Every software platform comes with an element of risk due to potential discontinuation or lack support by the firm/organization responsible for developing the framework. DoubleMap chose Android in order to mitigate this risk and eliminate the issues regarding hardware support.

To this point, it is worth noting that many AVL vendors have built their systems using proprietary hardware and software that is at its end-of-life (EOL) or is being sunset by the manufacturer. This has the potential to cause Columbia Transit several issues: 1) replacement parts become increasingly difficult to source or demand an extended period of time to procure 2) new features cannot be added due to a depleted development community 3) new features cannot be rapidly added due to the manufacturer losing interest in the platform or pursuing an alternative approach. For example, Microsoft dropping support for Windows CE hardware and software in favor of Windows 7/8.

APC Reporting:

DoubleMap works with UTA for APC data collection and reporting. UTA's client list includes over 80 transit organizations across several countries, and utilizes IBM's SPSS statistical analysis toolkit for its reporting platform. SPSS is off-the-shelf software that is relied on for advanced reporting by universities, municipalities, and corporations on a day-to-day basis.

- e. Third-party support and training shall be available for all standard commercially available software.*

DoubleMap agrees to the requirements set forth in this section. Additional information on the DoubleMap training approach can be found in section 3.2, subsection D.

- f. All software shall be easily expandable to accommodate future requirements. Reassembly or recompilation of the software shall not be necessary to accommodate system additions.*

DoubleMap provides a key differentiation by having an open-source, scalable architecture. Detailed information about the expandable software approach can be found in Part B, section 8, subsection B below.

- g. All software shall be modular to minimize the time and complexity associated with making any change to any program.*

DoubleMap's chief software architect came from Google and has designed the platform with modular components for a robust solution that is also scalable and easy to change. Examples of this can be found in the visual route creator, announcements portal, and historical archive toolsets.

- h. The modularity shall include the separation of hardware interface modules from other software modules.*

Columbia Transit



The DoubleMap system is designed for the hardware and software to “play nice” with one another, but does allow for modular flexibility in replacing or changing out a specific hardware or software component.

*B. COMPONENT #1- Automatic Vehicle Locator (AVL) System*

*The AVL system shall include all hardware/equipment, software, installation, training, support, warranty and acceptance testing to make the system fully operational to the satisfaction of Columbia Transit. Real-time fixed route bus arrival information, by an administrative interface and a customer interface to the public via Columbia Transit website (or a separate dedicated website) shall be accomplished by the AVL system.*

*The Contractor must specify whether system defaults to manual use in the event of a failure on or off the vehicle or facilities.*

1. *AVL On Board Equipment*

*Shall include at a minimum; 1) Antennas, 2) Cables, 3) GPS Receiver, 4) Mobile Data Terminal, 5) Hardware, and 6) Standard Warranty*

2. *AVL Labor*

*Shall include turnkey onsite-installation of all equipment/hardware, software, etc., to make the system fully functional.*

The DoubleMap system is fully turn-key and only requires a stable power source and connect for the on-site setup. DoubleMap has experience and references at agencies of similar size (and larger) where DoubleMap has successfully installed AVL during off-peak hours over a single weekend.

The software platform is 100% cloud hosted, so it will be turn-key in time for DoubleMap to install the hardware component – and immediately operate out of the box.

The specific DoubleMap team members who will be installing in Columbia have their qualifications listed in section 3.1 of the Technical Proposal below. These team members have experience bringing enterprise systems to go-live status and will work with Columbia Transit staff in order to make the AVL labor a success.

3. *AVL Software Modules*

*Shall include at a minimum;*

a. *Information and pricing*

*Please refer to the pricing sheet for specific information.*

b. *Web based mapping service*

*Such as Google maps for vehicle tracking of Columbia Transit routes by the public on the Columbia Transit website*

The DoubleMap public interface was designed using HTML5 and Google Maps V3 in order to provide a cross-platform solution for all major mobile platforms. The use of HTML5 technology

Columbia Transit

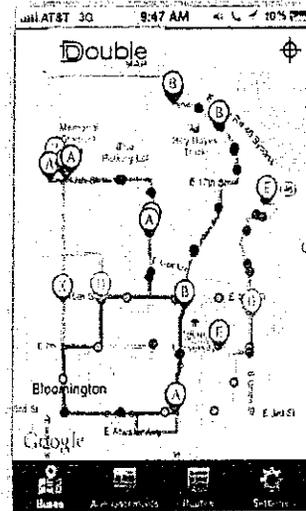


allows riders to avoid constant webpage refreshing, but also creates a cross-platform experience in all webkit mobile browsers (iPhone, Android, WebOs, newer Blackberry's, and Windows Phone 7/8). Additionally, DoubleMap provides native iPhone and Android applications for free through Google Play and the Apple App Store for fluid use across the two most popular mobile platforms.

DoubleMap has also be approved (and is currently included) in multiple university mobile application. The development and customization typically required to be integrated into university-branded mobile is extensive, so DoubleMap's experience with will provide an immediate impact to Columbia Transit's implementation and adoption rate.

DoubleMap transitioned the full functionality of a client website into all of the mobile options. This means that riders will see the exact same 1-2 second GPS updates with smoothing algorithm, ETA prediction times, and announcements in a mobile format.

The software development team always positions the user experience as the foremost concern during development, including each new addition to the roadmap, devoting a significant amount of time and resources into developing robust and easy-to-use mobile applications. With Google's design simplicity, DoubleMap is proud to see feedback for our apps is rated 5/5 stars over 70% of the time.





c. Ad-hoc maps and routine updates

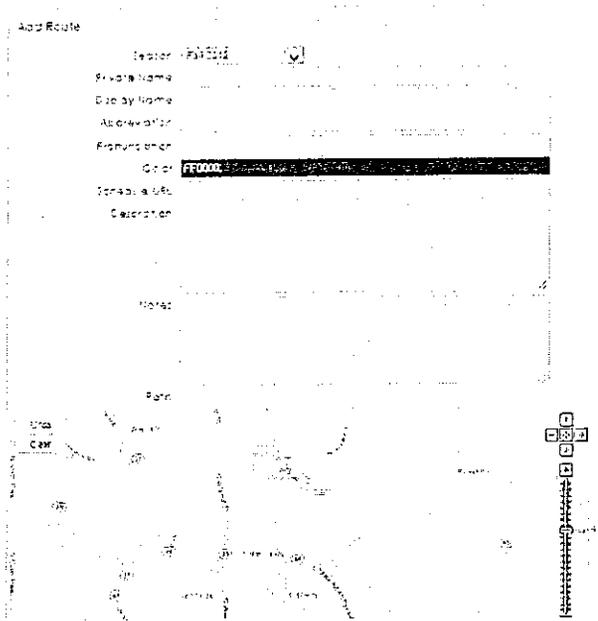
Route Creator Module

The DoubleMap suite includes a route creator tool which allows administrators to create, alter, and manage routes in-house. The route creator tool was designed by a former Google Maps engineer with simplicity in mind, and offers administrators unprecedented control over the management of their AVL system.

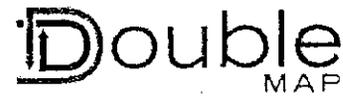
The route creator is based on a point-and-click system, which does not require any knowledge of coordinates, or programming. Users simply login to the DoubleMap administrative interface, select a route they would like to edit, or start with a new route.

The administrator clicks a point on the map and proceeds to click along the desired route – the Doublemap system will automatically connect the points and extract the GPS coordinates. A screenshot of this interface can be seen in figure.

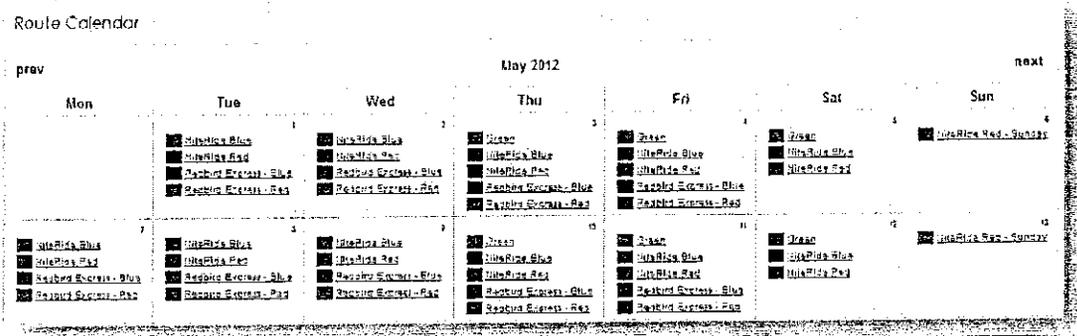
DoubleMap provides administrators with two ways to view and manage routes: route view and calendar view. Both options allow for administrators to view, edit, and copy selected routes to account for detours, preplanned road construction, and game day/event exceptions.



Columbia Transit



- 1) Route View – provides an overview of all active routes. Displays days during which each route operates, and their respective start and end times. Calendar View - provides an overview of active routes for every day in a month snapshot. Displays a color-coded representation of which routes will operate on which days to easily and quickly identify errors and create daily exception rules.



Routes for Spring 2012

Name	Short Name	Days of Week	Run Days	Run Time	Actions
Green	G	Mo Tu We Th Fr Sa Su	2012-03-26 2013-03-26	19:00:00 23:30:00	View Copy
NiteRide Blue	B	Mo Tu We Th Fr Sa Su	2012-02-28 2012-05-28	18:30:00 21:30:00	View Copy
NiteRide Red	R	Mo Tu We Th Fr Sa Su	2012-02-28 2012-05-28	20:30:00 01:30:00	View Copy
NiteRide Red - Sunday	R	Mo Tu We Th Fr Sa Su	2012-02-28 2012-05-28	18:30:00 01:30:00	View Copy
Redbird Express - Blue	B	Mo Tu We Th Fr Sa Su	2012-02-28 2012-05-28	07:00:00 19:30:00	View Copy
Redbird Express - Red	R	Mo Tu We Th Fr Sa Su	2012-02-28 2012-05-28	07:00:00 19:30:00	View Copy

Page 1 of 1, showing 6 records out of 6 total, starting on record 1, ending on 6

<< previous | next >>

Columbia Transit



### Stop Creator Module

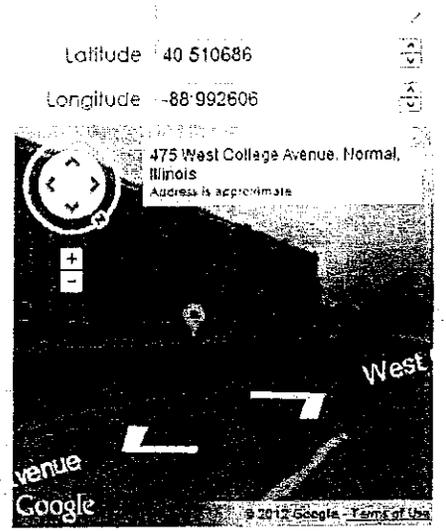
Additionally, Doublemap incorporated a stop creator to allow for pinpoint accuracy when performing stop adjustments in conjunction with the route management suit. The tool performs in the same manner as the route creator, allowing users to visually drag a bus stop within the map to ensure accurate location. DoubleMap utilizes the power of Google Maps Street View to enhance the process to a more powerful visual, vantage point. An example of this module can be seen in figure.

DoubleMap utilizes bus stop coordinates from the stop creator module to create virtual geofences for timely annunciation in the VAS platform. Coordinate precision for bus stops is pertinent to VAS accuracy, the street view component of the DoubleMap stop creator module becomes instrumental in aiding administrators in easily and effectively positioning stops.

d. Administrator module to monitor bus location information, etc.

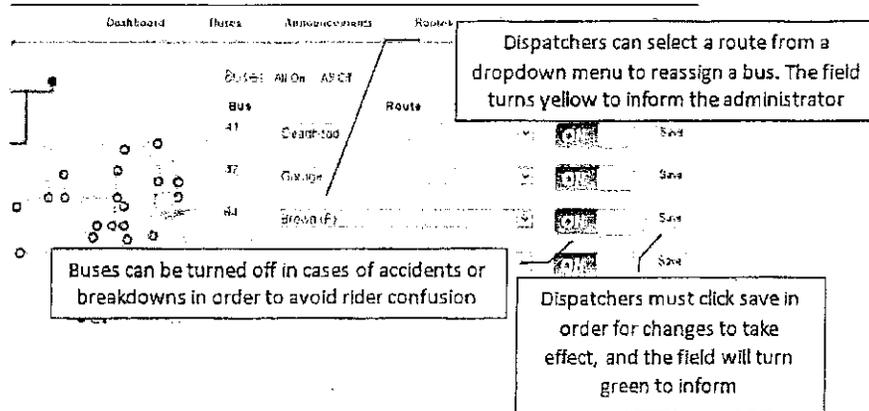
DoubleMap will provide Columbia Transit for a robust administrative platform that will empower dispatchers and managers alike to view real-time vehicle locations. Additionally, administrators will be able to see vehicles that are invisible to the public or running internal jobs or training runs.

Many of the specific features provided through the administrative module are detailed in sections a-c above, and sections e-m below. However, the administrative dashboard provides additional functionality if in the case that an administrator ever notices that a vehicle is off route or incorrectly assigned then.





To this point, DoubleMap provides an auto-correcting feature to instantly turn the vehicle off from public view, or reassign the route. This will override any driver-based MDT login and provide administrators with greater visibility into their workforce.

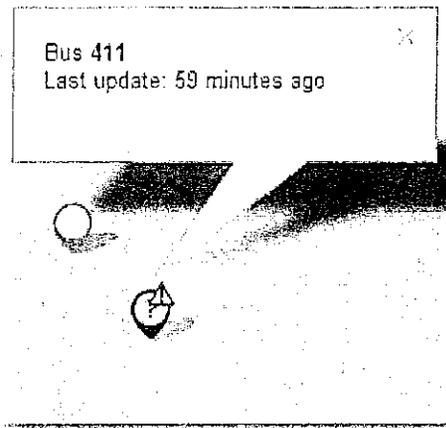


e. Geo-fencing of vehicles including dispatcher alerts

DoubleMap uses geo-fences for several custom dispatcher alerts. These alerts include, but are not limited to the following:

1. Bus running behind schedule
2. Bus running ahead of schedule
3. Bus immobile for more than predetermined amount of time (ex: 10 minutes)
4. Bus off route
5. Bus routed to incorrect route
6. Bus with non-communicating GPS unit

Figure 3 shows a yellow exclamation point on top of a bus icon. This type of warning tag means that a bus has been idling, and clicking on the icon shows that the vehicle has not moved in 59 minutes.



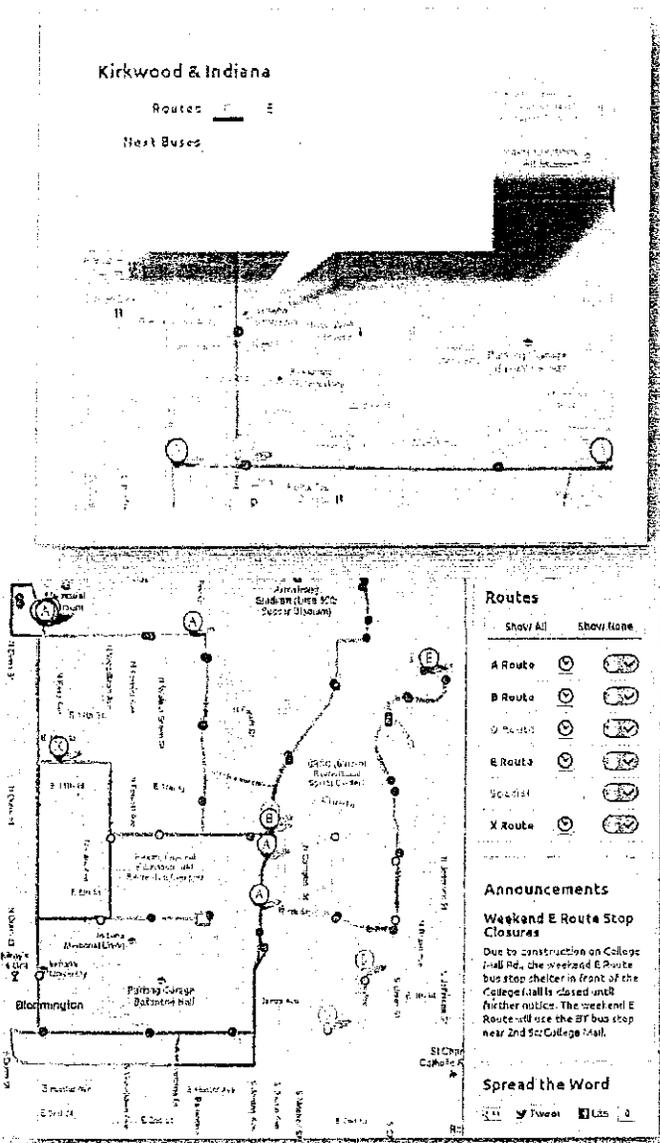
Columbia Transit



f. Group building to create groups based on different parameters  
 DoubleMap provides access levels for a multiple pre-defined security levels such as operations managers, dispatchers, bus drivers, maintenance workers, and minimal clearance level employees.

g. Navigational map tool/customer (passenger) interface module  
 DoubleMap provides an optimized solution for riders to access vehicle locations for free via a website address such as bt.doublemap.com, and is able to exceed expectations by providing 1-2 second GPS updates and a proprietary smoothing algorithm to ensure that buses do not "jump" or "skip" over any stops on the map.

The smoothing algorithm is a prime example of the robust capabilities included in the DoubleMap passenger interface, often left out by many AVL vendors. GPS is an imperfect technology, and experiences further challenges when paired with a cellular or radio connection. In other words, all vendors will experience rare lulls in connectivity – the value-adding differentiator is how these lulls are handled. DoubleMap has extensive experience working with cellular carriers in the



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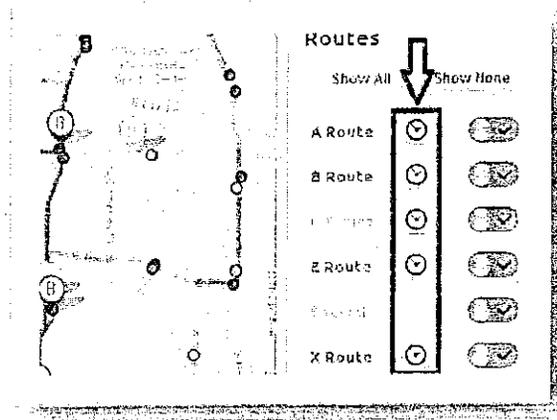
Bloomington area to allow for optimal cellular connectivity, and uses a combination of buffering, current speed, and historical traffic patterns to help 'smooth' any lulls in connectivity that may occur – which results in a seamless solution for riders and prevents buses from jumping from one location to the next.

Figure 4 provides a screenshot of Indiana University's system

The DoubleMap map interface allows riders to easily identify buses by route – using color coordination and abbreviated route letter (or number, ID, etc) within each bus icon. Additionally, riders can hover over a route outline to bring the desired route to the foreground for full path identification. Finally, riders can click the green check marks next to any route on the top right hand corner of the page to quickly isolate any number of desired routes.

Riders can also hover over a stop to retrieve the name of it, or can click a stop to find out which routes pass through it and their respective estimated arrival times. Please see figure for an example.

In this scenario, a rider has clicked on the bus stop at Kirkwood & Indiana. The rider can now see that both the D and E routes run through this stop, and that the next two D buses are arriving in 1-2 minutes and 20-21 minutes respectively. If the rider were to click on the purple E within this balloon, then the arrival predictions would reflect the next two E buses.



DoubleMap provides a link next to each route name that directs riders to route schedule information on the transit website – in this case Columbia Transit. See figure:

h. Fixed Route and Paratransit (Demand Response) scheduling and management module  
Please reference section 6. AVL Route Management Module, subsection A for detailed information and screenshots on the fixed route and paratransit scheduling and management module.

i. Vehicle location module  
DoubleMap provides administrators with an interface to ID buses by number, driver, or last update. This view provides a precise view that can locate individual vehicles in seconds.

Columbia Transit



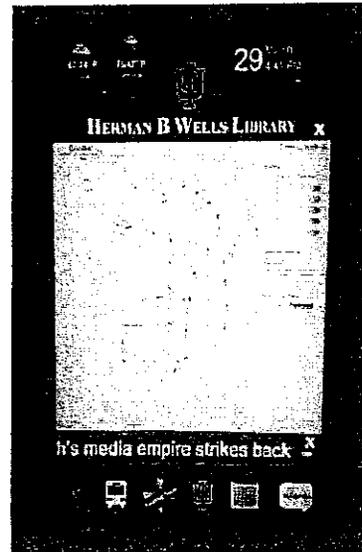
k. Website information display

DoubleMap has experience displaying website information on large indoor and outdoor displays.

DoubleMap will create custom web URL's for varying website information display types in order to best utilize the type of display being used. These custom maps, can be used with large touchscreen displays, passive LCD screens, or as a part of a third party information display.

Each screen will utilize a custom DoubleMap website in order to allow for unparalleled rider interaction and visibility. Riders will be able to view buses with real-time 1-2 second movements and isolate routes based on touch-input where available.

Additionally, DoubleMap supports dynamic message LED signs that are installed in bus shelters or transit terminals where passengers wait for their buses. These LED signs display real-time bus arrival information and informational text messages via a wireless communications link to the proposed AVL software module.



The proposed system software architecture allows for full control over the signs upon request, including configuration, real-time updates of signs, and health monitoring. In addition to showing time of day and arrival time predictions, the signs display non-commercial text messages generated by Columbia Transit system administrators. DoubleMap and Columbia Transit staff are able to view individual LED sign's operational status through the internal DoubleMap management site.

The real-time prediction arrival/departure of the next vehicle is recalculated periodically for all bus stops and the updated information is broadcasted to the message signs.

Messages are displayed with route or station identifier and arrival/departure times are shown in minutes for the next two vehicles servicing the stop location. The Columbia Transit transit system name and the current time of day information are also interleaved among other general public announcement messages.

l. Data storage and reporting

The DoubleMap administrative module provides an extensive collection of management reports. These reports are accessible through a web browser interface for viewing and accessing historical information in the internal database. The reports allow Columbia Transit system managers to gain greater insight and control over their plans, schedules and communications. For each report, the system presents a parameter web page.



Once a report has been generated, the user is able to quickly export it to an alternative format. These formats include Printable, Plain Text, and CSV Spread Sheet, which are useful for data analysis or distribution via electronic mail.

1. Garage pull out/ pull in time

DoubleMap utilizes geo-fencing technology to collect data on garage pull out and pull in time. This report provides a list of pull in and pull out times for each bus when given a user defined date range.

DoubleMap also provides similar reports for idle time.

2. Vehicle and route utilization

DoubleMap provide a robust vehicle and route utilization suite. The DoubleMap suite incorporates digitally recorded passenger counts by vehicle and has the ability to integrate with numerous APC vendors if Columbia Transit decides to add them in the future.

These reports can be viewed in real-time through the online reporting platform, but can also be exported to an Excel file.

Administrators will be able to select a specified date range and report type through the interface in figure and sort by day, month, and year.

Once a report is processed, administrators will be able to see an output similar to figure with a data set containing a bus or route ID (route ID in this example), and utilization by mileage or passenger counts (passenger counts in this example).

Passenger Data		Download CSV File						
Route ID	Route Name	2012-09-18	2012-09-19	2012-09-20	2012-09-21	2012-09-22	2012-09-23	2012-09-24
0	0	0	0	0	0	0	0	0
106	Aqua (K)	333	284	328	253	0	0	337
107	Aqua (K) Sat...	0	0	0	0	231	0	0
108	Blue (E)	216	233	237	197	0	0	215
109	Blue (E) Satu...	0	0	0	0	127	0	0
110	Brown (F)	398	373	342	396	0	0	393
113	Deadhead	114	101	208	182	134	0	103

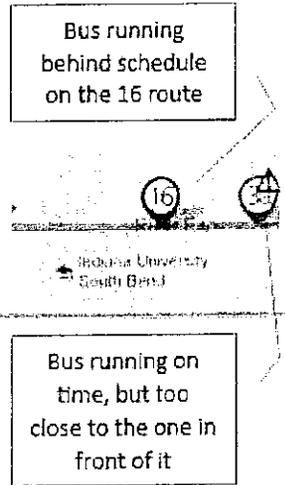
Columbia Transit



A sample output can be manipulated to produce weighted utilization results such as the ones in figure below.

Vehicle and Route Utilization for March 13 2012

Vehicle	Route					Weighted %
	A	B	D	E	X	
636		1802				9%
637	2801					14%
638			2306			11%
639				1349		7%
640					1945	10%
641	2634					13%
642			1935			9%
643		1934				10%
644					2011	10%
656				1555		9%
Weighted %	27%	19%	20%	14%	20%	100%



3. Headway analysis report

The DoubleMap report for headway analysis is tightly bound to the visual adherence module and provides a bunching notification module as a layer running in accordance with the visual schedule adherence tool. The schedule adherence tool operates autonomously from the bunching tool, but displays a warning sign on buses that are running too close (distance is user configurable for Columbia Transit' customization) to one another. An example of the alert can be seen in figure below.

Additionally, DoubleMap provides headway analysis as a report within the administrative suite. A sample print out of the headway report for route A can be seen in figure below.

Route	Direction	Avg Headway	Min Headway	Max Headway	Std Dev	Sample Count
A	To Stadium	0:30:09	0:24:05	1:01:06	4.02	194
A	To College Mall	0:29:53	0:23:10	0:37:20	3.62	234

4. Schedule adherence and on-time performance by route

DoubleMap provides an interactive on-time performance platform that utilized real-time AVL information to relate overall system performance and schedule adherence data.

The on-time tool is capable of producing reports based on the following metrics:

- Route versus bus stops by day, week, or month in average time
- All routes versus time points in on-time percentage and total (displayed below)

Columbia Transit



On-time performance for March 13 2012

Route	Percent of Timepoints			Number of Timepoints			
	Early	On Time	Late	Early	On Time	Late	Total
A Route	1%	92%	7%	1	103	8	112
B Route	0%	92%	8%	0	155	14	169
D Route	3%	96%	1%	4	130	2	136
E Route	1%	88%	11%	1	122	15	138
X Route	4%	95%	1%	7	162	1	170
Total	2%	93%	6%	13	672	40	725

5. Mileage Tracking by bus

DoubleMap provides a miles tracking reporting module which accounts for the following variable types:

- Vehicle miles or Columbia Transit service hours
- Date range
- Day, month, or year

Mileage Data Download CSV File

Bus	2012-10-18	2012-10-19	2012-10-20	2012-10-21	2012-10-22	2012-10-23	2
41	0	0	0	0	0	0	0
47	108	1629	8167	0	149	165	1
54	12222	12522	12457	16	191	183	2
55	6356	12411	0	0	60	4	0
65	12561	12489	190	0	104	120	2
67	8960	0	0	0	0	2	6
68	24872	12543	12529	6167	0	205	1
69	12547	12505	30972	0	208	226	2
70	12499	12742	12626	0	180	199	1

m. Lifetime Software Updates at no extra cost

DoubleMap will provide software updates for the duration of the contract at no charge to Columbia Transit.

4. AVL Administrator Interface Module shall:

- a. Provide system administration functions sufficient to manage the required functionality  
The DoubleMap administrative module is discussed in detail part 3: AVL Software Modules, subsections C-E.
- b. Provide sample screen shots and a high-level diagram  
*Of major menu options and administrative tools as part of the proposed web service system.*

Sample screen shots and high level diagrams for the administrative module hare detailed in part 3: AVL Software Modules, subsections C-E.

Additionally, the DoubleMap run/block schedule is detailed in with screenshots in section D below.

Columbia Transit



DoubleMap will also provide Columbia Transit with a pre-defined and free form text message module within the administrative platform. Administrators have the ability to disseminate messages new in real time and schedule upcoming messages. An example of this toolset can be seen in figure to the right.

These messages can be seen in real-time by riders using the DoubleMap website, mobile website, iPhone, and Android apps following dissemination by an administrator. Additionally, the DoubleMap announcement module allows administrators to reuse historical messages or select canned messages with ease. An example of this can be seen in figure below.

The proposed system software architecture allows for full control over signage, including configuration, real-time updates of signs, and health monitoring. In addition to showing time of day and arrival time predictions, the signs display text messages generated by Columbia Transit system administrators. DoubleMap and Columbia Transit staff are able to view individual LED sign's operational status through the internal DoubleMap management site.

The real-time prediction arrival/departure of the next vehicle is recalculated periodically for all bus stops and the updated information is broadcasted to the message signs.

Title	Content	Start	End	Actions
Waters Class	On Wednesday, 14 November 2012, the Waters Class will be held at Simwalter Fountain. This event is scheduled to be from 4:00PM to 5:45PM. During the time, the Stadium Express route buses will not be able to serve the 100 Bus Stop and 101 Audomum bus stops. Please use the 200 Bus Stop at 1000pm & 7th Street during the time of the event. The last 2 Route bus to not, other will be the 300 Bus Stop from the Stadium. The last 5 Route bus to resume the regular route will be the 8:00PM departure from the Stadium. All other departures from the Stadium between 4:00PM and 6:00PM will use the alternate bus stop location.	2012-11-13 14	2012-11-14 18:00:00	View Edit Delete
Thanksgiving Break	NY Christmas Day Service will operate Fall Semester bus service at approximately 10 PM on Friday (November 16, 2012). There will be no light rail service Friday and Saturday (November 16 and 17, 2012). During Thanksgiving Break the E Route will be the only route operating. There will be no bus service on the two consecutive holidays, Thanksgiving Day (Thursday November 22) and the day after Thanksgiving (Friday November 23). Regular Fall Semester bus service will resume on Sunday (November 25, 2012).	2012-11-17 25	2012-11-23 09:00:00	View Edit Delete
E Route College Hill Road Closure	E Route College Hill Road closure for 10/27 & 10/28 due to construction on College Hill Road between 3rd Street & 2nd Street. The E Route will operate on 3rd Street, 27 October and Sunday, 28 October 2012. Going to the north use the 100 Bus Stop from 1000am to 10:00am. The bus will travel south on 1000 Street to 1st Street. Then east on 1st Street to 2nd Street. Then west on 2nd Street to 3rd Street to College Hill Road and return to 1st Street. Then east on 1st Street to 2nd Street. Then west on 2nd Street to 3rd Street to College Hill Road and return to 1st Street.	2012-10-27 09:00:00	2012-10-28 09:00:00	View Edit Delete

Messages are displayed with route or station identifier and arrival/departure times are shown in minutes for the next two vehicles servicing the stop location. The Columbia Transit transit system name and the current time of day information are also interleaved among other general public announcement messages.

- c. Security to manage system access  
Including support for multiple security and access levels and applying different security levels to specific users.

DoubleMap provides access levels for a multiple pre-defined security levels such as operations managers, dispatchers, bus drivers, maintenance workers, and minimal clearance level employees.

Columbia Transit



- d. Incorporate the run/block numbers  
*To allow for bus switches from one run/block to another in response to traffic delays, high passenger loads, driver no-shows etc.*

One of the major advantages of the DoubleMap system is the ability to make run/block changes in a graphical system when adjusting one or multiple runs/blocks. DoubleMap software within both the scheduling and dispatching components has the ability to drag and drop a single run or multiple run between drivers. This is all done from one screen so there are no switching screens or pop windows. In addition to further make easy adjustments users can right click on blocks or routes to edit times, driver assignments, and other key trip information.

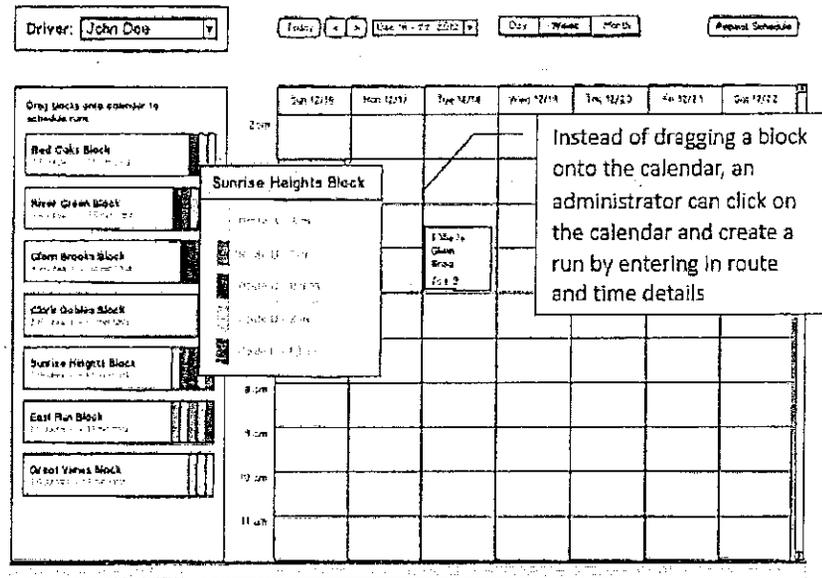
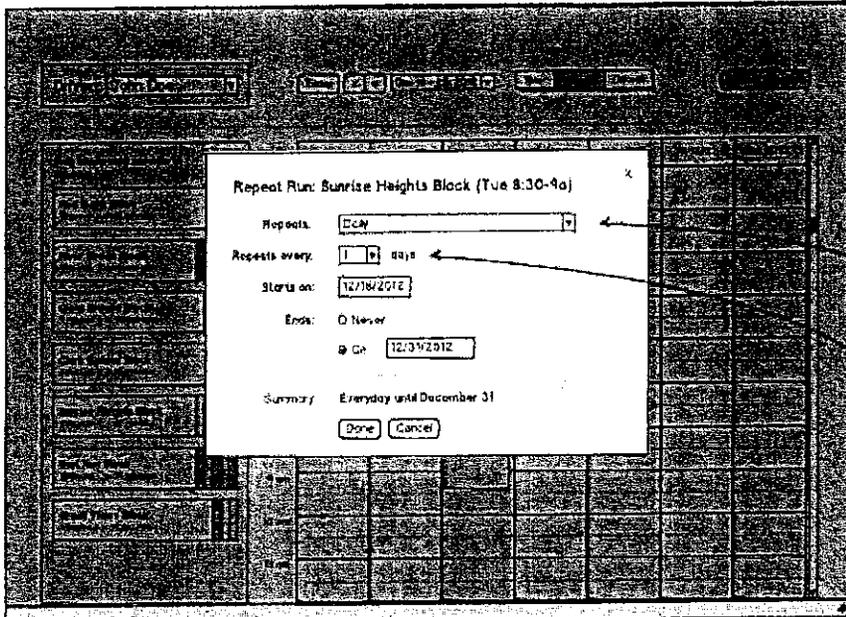
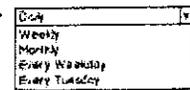


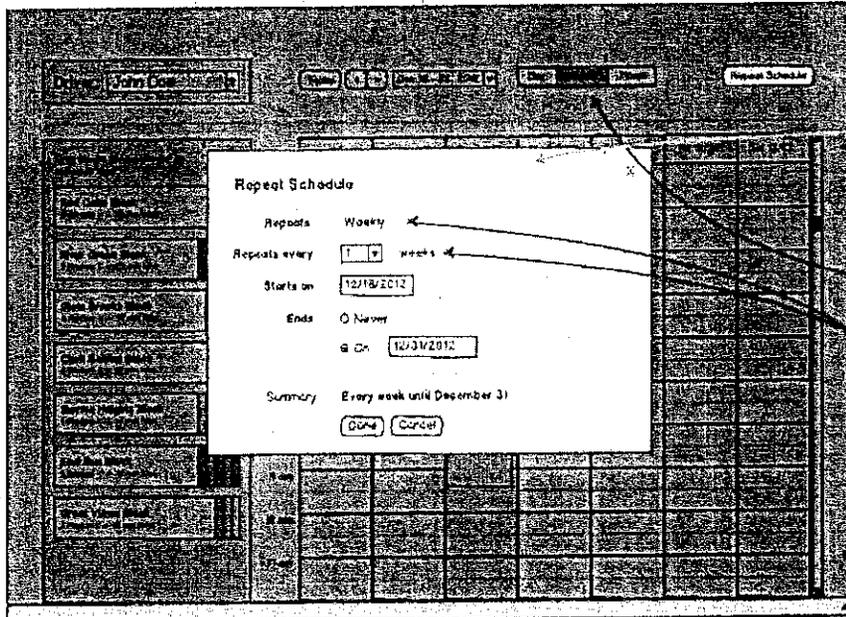
Figure 32



Repeating a single Run  
Users can schedule a repeating run. When they click Repeat Run... as in previous screen, the dialog is shown.



If Weekly is selected in the previous dropdown, the supporting text changes to "weekly" to correspond with dialog parameters.



1) User Clicks Repeat Schedule

2) "Repeat Schedule" modal appears

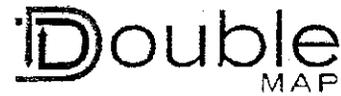
Repeating a Schedule (or group of Runs)

Users can create a repeating schedule

1) If the user has selected to view their schedule by weeks then:

2) The schedule repeat is automatically set to repeat to weekly. A repeating weekly schedule will be created.

3) If the user wished to create a daily or monthly repeating schedule, the user must switch their view to daily or monthly first.



- 5. AVL Customer (Passenger) Interface Module shall:
  - a. Provide a public interface to customers
    - indicating bus location information displayed on a map on the Columbia Transit website (or a separate dedicated website).*

DoubleMap provides an optimized solution for riders to access vehicle locations for free via a website address such as [bt.doublemap.com](http://bt.doublemap.com), and is able to exceed expectations by providing 1-2 second GPS updates and a proprietary smoothing algorithm to ensure that buses do not “jump” or “skip” over any stops on the map.

The smoothing algorithm is a prime example of the robust capabilities included in the DoubleMap passenger interface, often left out by many AVL vendors. GPS is an imperfect technology, and experiences further challenges when paired with a cellular or radio connection. In other words, all vendors will experience rare lulls in connectivity – the value-adding differentiator is how these lulls are handled.

DoubleMap has extensive experience working with cellular carriers to allow for optimal cellular connectivity, and uses a combination of buffering, current speed, and historical traffic patterns to help ‘smooth’ any lulls in connectivity that may occur – which results in a seamless solution for riders and prevents buses from jumping from one location to the next.

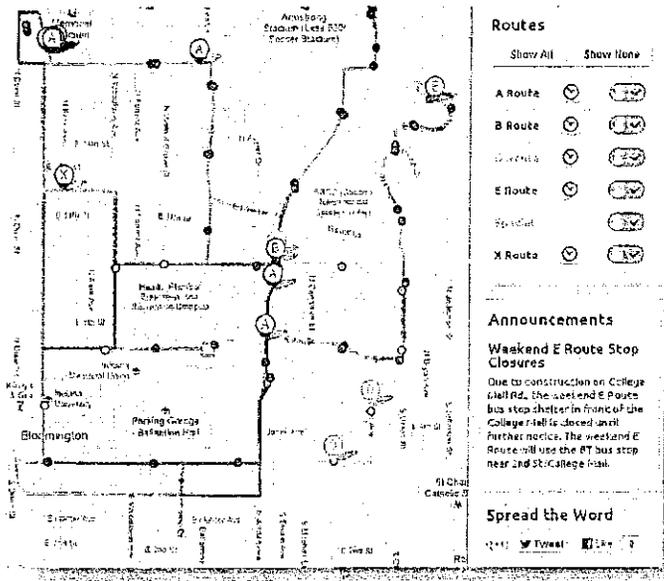


Figure 4 provides a screenshot of Indiana University’s system

The DoubleMap map interface allows riders to easily identify buses by route – using color coordination and abbreviated route letter (or number, ID, etc) within each bus icon. Additionally, riders can hover over a route outline to bring the desired route to the foreground for full path identification. Finally, riders can click the green check marks next to any route on the top right hand corner of the page to quickly isolate any number of desired routes.

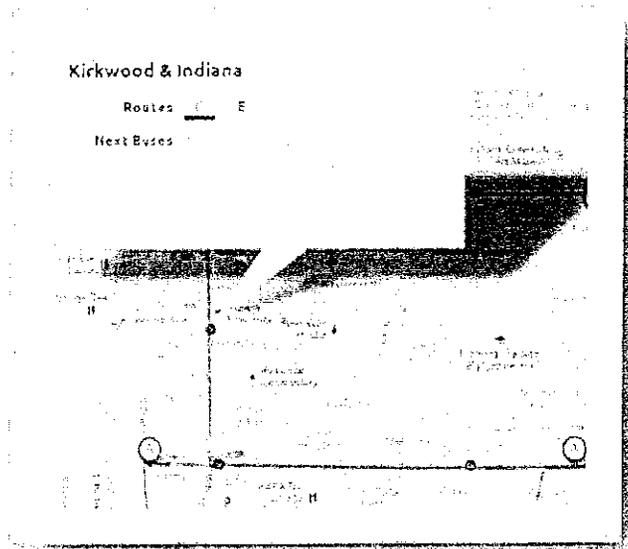
Columbia Transit



- b. Continuously update the web page  
Whenever a new estimated time of arrival [ETA] is determined, until the user closes the web page.

Riders will be able to hover over a stop to retrieve the name of it, or can click a stop to find out which routes pass through it and their respective estimated arrival times. Please see figure to the right for an example.

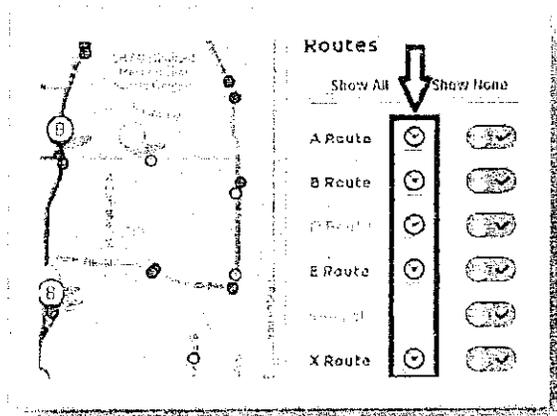
In this scenario, a rider has clicked on the bus stop at Kirkwood & Indiana. The rider can now see that both the D and E routes run through this stop, and that the next two D buses are arriving in 1-2 minutes and 20-21 minutes respectively. If the rider were to click on the purple E within this balloon, then the arrival predictions would reflect the next two E buses.



DoubleMap will also provide a link next to each route name that directs riders to route schedule information on the transit website – in this case Columbia Transit. See the appropriate figure:

- c. Shall provide predictive estimate of bus arrival times at designated stops  
Based on the average speed of the bus and traffic impacts.

The DoubleMap predicted arrival algorithm uses scheduled data as a basis for estimations, and weighs in the current situation into near-term predictions, along with historical data. Historical data is collected for each route, and aggregated based on day of week and time of day to compensate for variations in traffic and business.



Columbia Transit

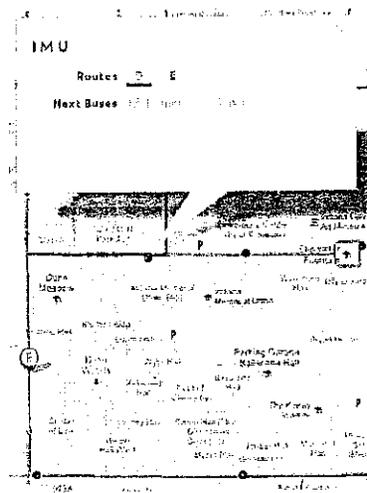


The algorithm updates the estimated time of arrival (ETA), on-demand, each time ETAs are requested. For anomalous situations,

such as off-route buses or unplanned detours, the algorithm will give a best-effort prediction and then re-do the predictions once the bus has reached its next stop, and if the detour occurs for many days or weeks, then it will be factored in with the historical data.

An example of the prediction can be seen in figure.

The algorithm has the ability to predict the next 10 vehicles are requested in this question, but DoubleMap advises Columbia Transit to display the next 2 vehicle arrival predictions for best results.





6. AVL Route Management Module:

a. Shall provide dispatcher real-time information

*To manage the routes and determine the location of any vehicle in service, route, paratransit (demand response), shuttles, terminal, or special on-demand events.*

The DoubleMap dispatcher portal is tied into the same real-time information as the administrative module. DoubleMap has provided details and screenshots of these features in section 4. AVL Administrative Interface, subsections C-E.

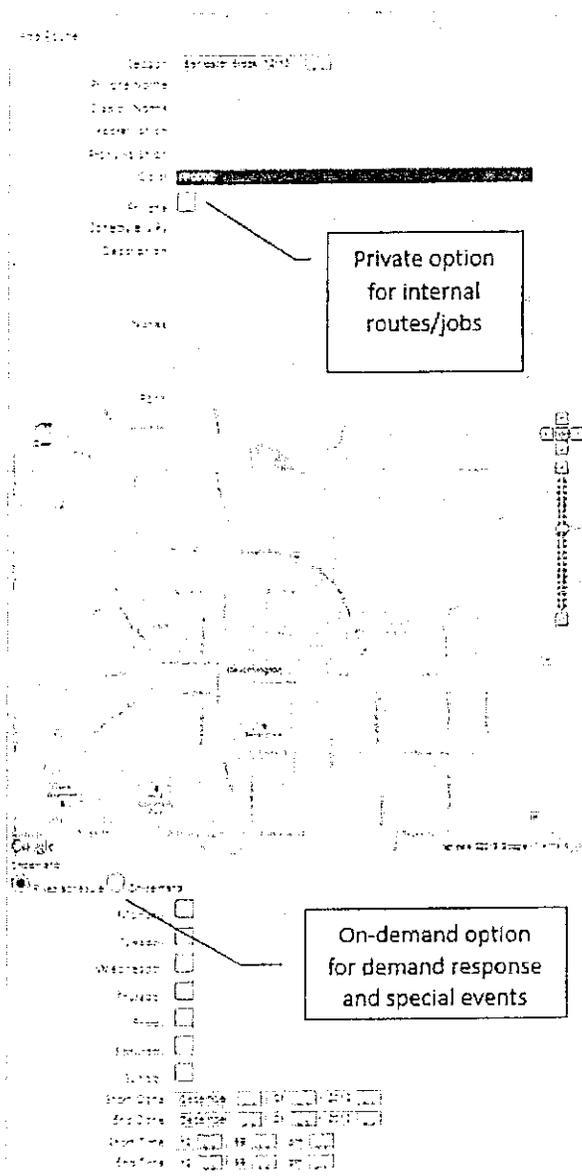
Additionally, DoubleMap has experience working with internal (non-public facing) vehicles/routes/job and paratransit systems. Each type of service has a custom way to create routes, which vary slightly from the standard routing method described in part 3. AVL Software Modules, subsection c. Ad-hoc maps and routine updates.

Specifically, administrators will be able to go through the same steps to arrive at the visual route creator screen, but will select private for an internal route or on-demand for demand response vehicles or special events shuttles.

b. Shall display the time each bus arrives at each stop

*Per route, and the "wait times" (e.g., the amount of time it will take for the bus to arrive at the stop).*

Please reference part 5: AVL Customer Interface, subsection C above.

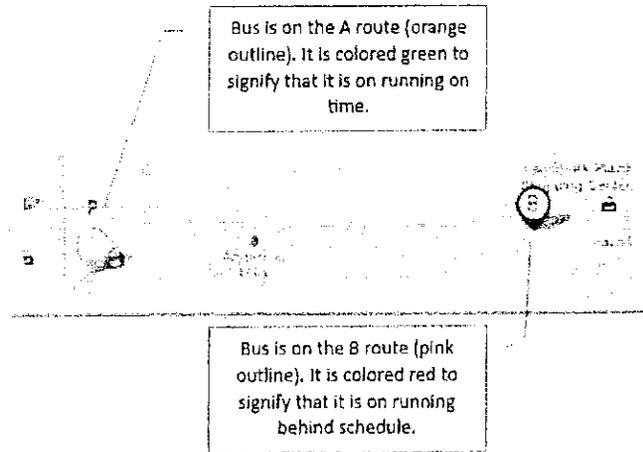


Columbia Transit



- c. Shall display real time status clearly (i.e., color-coding) With emphasis on off-route or off schedule vehicles.

The visual adherence tool displays bus movement in real time, but color codes the vehicles by adherence as opposed to route color. Figure 10 displays two buses: one running on time, and the other behind schedule. The colors used in this example are from our current implementations, but can be changed upon request to meet Columbia Transit' requests.



- d. Shall utilize the real time AVL Information Received from the vehicle To update schedule adherence in relation to its scheduled information, and display, system on- time performance statistics, relating to the overall performance of fixed route system.

DoubleMap will provides an interactive on-time performance platform that utilized real-time AVL information to relate overall system performance and schedule adherence data.

The on-time tool is capable of producing reports based on the following metrics:

- Route versus bus stops by day, week, or month in average time
- All routes versus time points in on-time percentage and total (displayed below)

On-time performance for March 13 2012

Route	Percent of Timepoints			Number of Timepoints			
	Early	On Time	Late	Early	On Time	Late	Total
A Route	1%	92%	7%	1	103	8	112
B Route	0%	92%	8%	0	155	14	169
D Route	3%	96%	1%	4	130	2	136
E Route	1%	88%	11%	1	122	15	138
X Route	4%	95%	1%	7	162	1	170
<b>Total</b>	<b>2%</b>	<b>93%</b>	<b>6%</b>	<b>13</b>	<b>672</b>	<b>40</b>	<b>725</b>

- e. Shall provide detailed explanations of route management components And how they work with other components of the system.



A detailed description of route management components can be found in part 3: AVL Software Modules, subsections C-E. Additional information is on route/run/block scheduling is available in part 4. AVL Administrative Interface, subsections A-D.

- f. Shall provide screenshots of applicable windows describing key features  
*This includes attributes and the information available within the dispatch display and the management component.*

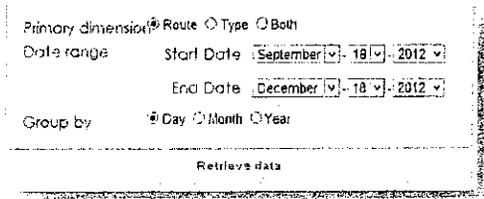
Detailed descriptions and screenshots for the dispatch and management components are coordinated with specific modules and can be found in part 3: AVL Software Modules, subsections C-E and part 4. AVL Administrative Interface, subsections A-D.

- g. Shall generate the following reports, at a minimum:  
The DoubleMap administrator module provides an extensive collection of management reports. These reports are accessible through a web browser interface for viewing and accessing historical information in the internal database. The reports allow Columbia Transit system managers to gain greater insight and control over their plans, schedules and communications. For each report, the system presents a parameter web page.

Once a report has been generated, the user is able to quickly export it to an alternative format. These formats include Printable, Plain Text, and CSV Spread Sheet, which are useful for data analysis or distribution via electronic mail.

1. *Garage pull out/pull in*

DoubleMap utilizes geo-fencing technology to collect data on garage pull out and pull in time. This report provides a list of pull in and pull out times for each bus when given a user defined date range.



DoubleMap also provides similar reports for idle time.

2. *Driver paddle and assignments*

DoubleMap will provide Columbia Transit with a list detailed driver reports to show specific routing assignments, utilization, off-route, and log in/out. Additionally, DoubleMap can provide custom MDT interfaces which are reference in part 3.4 for a detailed description of custom MDT interfaces.

3. *Vehicle and Route Utilization*

DoubleMap provide a robust vehicle and route utilization suite. The DoubleMap suite incorporates digitally recorded passenger counts by vehicle and has the ability to

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integrate with numerous APC vendors if Columbia Transit decides to add them in the future.

These reports can be viewed in real-time through the online reporting platform, but can also be exported to an Excel file.

Passenger Data		Download CSV File						
Route ID	Route Name	2012-09-18	2012-09-19	2012-09-20	2012-09-21	2012-09-22	2012-09-23	2012-09-24
0	0	0	0	0	0	0	0	0
106	Aqua (K)	334	284	328	263	0	0	337
107	Aqua (K) Sal...	0	0	0	0	231	0	0
108	Blue (E)	216	233	237	197	0	0	215
109	Blue (E) Salu...	0	0	0	0	127	0	0
110	Brown (F)	396	373	342	395	0	0	398
112	Deadhead	114	101	208	182	134	0	109

Figure 23

A sample output can be manipulated to produce weighted utilization results such as the ones in figure.

Vehicle and Route Utilization for March 13 2012

Vehicle	Route					Weighted %
	A	B	D	E	X	
636		1802				9%
637	2801					14%
638			2206			11%
639				1349		7%
640					1945	10%
641	2634					13%
642			1835			9%
643		1934				10%
644					2011	10%
656				1555		8%
Weighted %	27%	15%	20%	14%	20%	100%

DoubleMap administrators will be able to select a specified date range and report type through the interface in figure to the right and sort by day, month, and year.

Once a report is processed, administrators will be able to see an output similar to the appropriate figure with a data set containing a bus or route ID (route ID in this example), and utilization by mileage or passenger counts (passenger counts in this example).

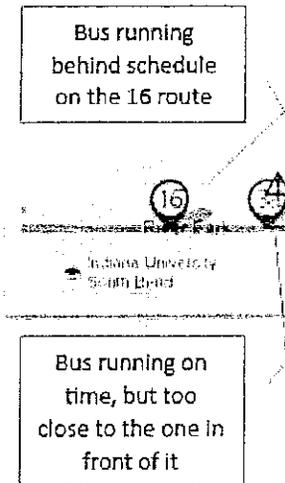
4. Headway analysis report

The DoubleMap report for headway analysis is tightly bound to the visual adherence



module and provides a bunching notification module as a layer running in accordance with the visual schedule adherence tool. The schedule adherence tool operates autonomously from the bunching tool, but displays a warning sign on buses that are running too close (distance is user configurable for Columbia Transit' customization) to one another. An example of the alert can be seen in appropriate figure.

Additionally, DoubleMap provides headway analysis as a report within the administrator suite. A sample print out of the headway report for route A can be seen in the appropriate figure.



Route	Direction	Avg Headway	Min Headway	Max Headway	Std Dev	Sample Count
A	To Stadium	0:30:09	0:24:05	1:01:06	4.02	184
A	To College Mall	0:28:53	0:23:10	0:37:20	3.62	234

5. Schedule adherence and on-time performance

DoubleMap will provide a robust reporting suite that includes all of the reports mentioned in this section. Each report is detailed above in section: B. Component #1 – AVL System, subsection 3. AVL Software Modules, part L: Data storage and reporting.

h. Shall integrate with current, and future, electronic fare boxes and external signs on the buses. DoubleMap has the ability to integrate with Luminator and Twinvision signage. However, both signs utilize proprietary software and were designed to operate with a central data input unit. The ideal scenario is one where DoubleMap can bypass the existing input unit and communicate directly with the signage. However, the age/make/model of each specific sign provides varying hardware limitations which vendors (including DoubleMap) cannot overlook.

If this situation presents itself DoubleMap advises Columbia Transit to upgrade to a newer sign, or one that has the ability to integrate directly into the data input unit. Integration into the data unit

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allows DoubleMap to automatically change information, but requires Columbia Transit to preconfigure the data input units with software that will accept DoubleMap's command text.

Additionally, DoubleMap has the ability to integrate with electronic fare boxes. Fare box providers have historically provided a usable feed for AVL integration, but DoubleMap will be reliant on a usable data feed in order to provide proper integration.

Columbia Transit can help ensure that both external signage and fareboxes are integrated properly by facilitating a conversation when DoubleMap can ask specific questions of the manufacturer of each component.

7. AVL LCD Monitors:

a. Shall provide and install LCD monitors at various Columbia Transit offices/locations

1. *Two (2) monitors will be installed in the Columbia Transit Bus Terminal Transfer Center. One (1) monitor will be installed in the Student Center on the University of Missouri Campus*

DoubleMap agrees to meet the requirements set forth in this section.

2. *Vendor shall include the cost of the monitor as well as any other equipment necessary for installation mounting such as cables, brackets, electrical outlets, etc.*

Please note the pricing attachment for LCD costs.

3. *All labor installation cost must be reflected separately on the price & fee forms*

Please note the pricing attachment for LCD costs.

b. Monitors shall display the location of each bus and arrival information in real time  
*Per route or a combination of routes.*

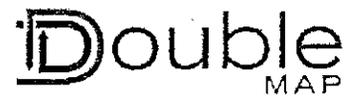
DoubleMap has experience displaying website information on large indoor and outdoor displays.

DoubleMap will create custom web URL's for varying website information display types in order to best utilize the type of display being used. These custom maps, can be used with large touchscreen displays, passive LCD screens, or as a part of a third party information display.

Each screen will utilize a custom DoubleMap website in order to allow for unparalleled rider interaction and visibility. Riders will be able to view buses with real-time 1-2 second movements and isolate routes based on touch-input where available.

Additionally, DoubleMap supports dynamic message LED signs that are installed in bus shelters or transit terminals where passengers wait for their buses. These LED signs display

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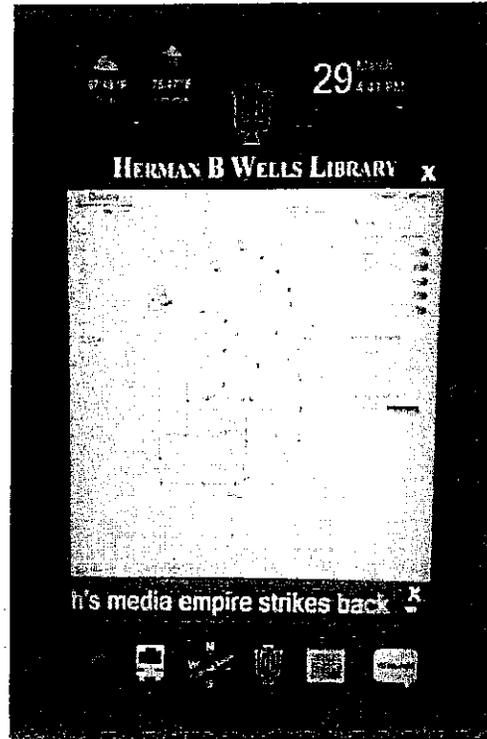


real-time bus arrival information and informational text messages via a wireless communications link to the proposed AVL software module.

The proposed system software architecture allows for full control over the signs upon request, including configuration, real-time updates of signs, and health monitoring. In addition to showing time of day and arrival time predictions, the signs display non-commercial text messages generated by Columbia Transit system administrators. DoubleMap and Columbia Transit staff are able to view individual LED sign's operational status through the internal DoubleMap management site.

The real-time prediction arrival/departure of the next vehicle is recalculated periodically for all bus stops and the updated information is broadcasted to the message signs.

Messages are displayed with route or station identifier and arrival/departure times are shown in minutes for the next two vehicles servicing the stop location. The Columbia Transit transit system name and the current time of day information are also interleaved among other general public announcement messages.



- c. Monitors will also be capable of displaying bus and other mass transit information  
*Such as advertising and promotional videos provided to the vendor by Columbia Transit.*

DoubleMap has full control over the content displayed on the signage, so advertising and promotional videos are avenues when Columbia Transit will have extensive flexibility.

#### 8. AVL Functional Requirements:

- a. Accurately track bus locations en-route in real-time (delay not more than 15 seconds) and provide visual mapping displays.  
DoubleMap will provide Columbia Transit with 1-2 second, real-time, bus tracking in a user-friendly visual mapping display.

Additional information about the DoubleMap visual mapping display can be found in section 5: AVL Customer (Passenger) Interface Module above.

- b. Software design shall be expandable  
*Include all necessary interfaces to support the subsystems as well as other future functions.*

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The primary fear that buyers have when spending money on a piece of technology is about its life expectancy and the fear that it may be outdated and unsupported the second a purchase is consummated. Unfortunately, this sentiment is true too often; which is why DoubleMap has designed the AVL systems to be scalable for tomorrow and into the future.

DoubleMap was created as a direct result of this frustration in the GPS-fleet management space. Many vendors operate under a short-sighted vision to win a contract, but many not think of how they plan to account for change in the future.

Specifically, the concerns listed below, stemming from hardware, software, and intellectual property, are those which Columbia Transit should anticipate:

1. Hardware software updates

The hardware that AVL and AVA vendors utilize operates a specific type of internal software, which provides the core functionality required for proper GPS and voice announcement functionality. Often times, this software will need to be updated – which will occur over a five year contract.

When an upgrade occurs, how does a vendor's system implement? Will they require interaction with every bus in person? If so, they may cause service interruptions, or an inconvenience at the very least.

This is where DoubleMap excels - The DoubleMap system is intelligently designed to "wake up" every night to check for a system update using an internal battery to avoid draining the buses battery. If there is an update, then it automatically downloads and installs the necessary software update without any driver/maintenance/dispatcher interaction.

2. System software updates

Many vendors may require Columbia Transit to install proprietary computer software in order to manage the system. This type of solution has many downsides, including manual updates, incompatibility with future operating system upgrades, and a potential delay for real-time data.

DoubleMap is 100% cloud hosted and compatible with major web browsers; which means that our data is fresh, our updates are seamless, and you don't have to reinstall anything if you want to access DoubleMap from a personal computer/iPad/Mac/etc.

3. Service changes (routes, number of buses, number of users)

Public Transportation is not a perfect science, so why would a vendor charge Columbia Transit for tweaks and improvements? We understand and expect Columbia Transit to enact changes for road construction, seasons, semesters, and sporting events. We also understand that your staff may have turnover, and that rider usage will fluctuate.

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Ultimately, our goal is to provide a system that you don't have to think about – it just works. This means that you can add as many bus stops as you need, change routes on the fly, and create user accounts for onboarding team members – all without additional costs.

- c. AVL hardware shall not interfere with other equipment installed (such as the camera system). DoubleMap is currently in service at numerous transit agencies that have other equipment, such as camera systems, without interference.

- d. Vehicle location information posted on a GUI map display  
*Available on Columbia Transit public website and viewable through various devices such as Smart-Phone, Kiosk, and PC.*

DoubleMap will provide a GUI map for the Columbia Transit public website that will use the same specifications as the public-facing website described in detail in section 5: AVL Customer (Passenger) Interface Module above.

- e. Shall integrate with current, and future, electronic fare boxes and external signs on the buses. Please reference part 6. AVL Route Management Module, subsections G, section H for this information.

- f. Develop the tracking website using internet mapping service such as Google maps including:
  1. *One integrated map with a detailed map of the Columbia streets and buildings, local and regional areas, and major landmarks,*

DoubleMap will be able to meet the requirements of this section through a tight integration with Google Maps. Additional information about the DoubleMap visual mapping display can be found in section 5: AVL Customer (Passenger) Interface Module above.

2. *Standard map display features (zoom in/out panning etc.)*

The mapping infrastructure for DoubleMap is provided by Google and will provide Columbia Transit riders with the same map features as standard Google Maps. An example can be found at [IUB.doublemap.com](http://IUB.doublemap.com)

3. *An automatic refresh feature with the option of refreshing the map views 'upon-demand' by the dispatcher*

The dispatcher dashboard module provides a real-time view of routed buses and allows administrators to override any inaccurate MDT login information. This results

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in an automatic refresh on the public facing map as well and is available upon-demand.

The screenshot shows a web interface with a navigation menu (Dashboard, Buses, Announcements, Routes) and a table of bus information. The table has columns for 'Bus' and 'Route'. Three rows are visible: Bus 41 with route 'Deadhead', Bus 47 with route 'Garage', and Bus 64 with route 'Brown (F)'. Each row has a 'Status' field (currently 'ON') and a 'Save' button. Callout boxes provide the following information:

- Top Callout:** Dispatchers can select a route from a dropdown menu to reassign a bus. The field turns yellow to inform admins of a change.
- Bottom Left Callout:** Buses can be turned off in cases of accidents or breakdowns in order to avoid rider confusion.
- Bottom Right Callout:** Dispatchers must click save in order for changes to take effect, and the field will turn green to inform admins of a change.

4. Capabilities to trace routes, place stops and landmarks on the map. GIS layers of Columbia Transit routes will be provided in shapefile format upon contract award for routes and bus stops.

DoubleMap will provide Columbia Transit with a point-and-click visual route and stop creator toolset for this type of functionality.

All route and stop information can be imported from the provided shapefile and edited in on an ad-hoc basis in real-time.

Additional information on these toolsets can be found in the Ad-hoc maps and routes section located with part 3: AVL Software Modules section.

- g. Predict the arrival of the bus (both outbound and inbound)  
At a selected bus stop on a particular fixed route

The DoubleMap predicted arrival algorithm uses scheduled data as a basis for estimations, and weighs in the current situation into near-term predictions, along with historical data. Historical data is collected for each route, and aggregated based on day of week and time of day to compensate for variations in traffic and business. The algorithm updates the estimated time of arrival (ETA, on-demand, each time ETAs are requested).

For anomalous situations, such as off-route buses or unplanned detours, the algorithm will give a best-effort prediction and then re-do the predictions once the bus has reached its next stop, and if the detour occurs for many days or weeks, then it will be factored in with the historical data.



DoubleMap is also able to handle outbound and inbound stop differentiation through a sequencing and buddy-style system, which pairs two stops together from a visibility standpoint, but allows for directional ETA differentiation.

- h. Dispatch ability to send text messages to the electronic signs  
*To be located at Columbia Transit terminal and Operations Offices and to future bus stops.*

DoubleMap will provide a pre-defined and free form text message module within the administrative platform. Administrators have the ability to disseminate messages new in real time and schedule upcoming messages. An example of this toolset can be seen in figure below.

These messages can be seen in real-time by riders using the DoubleMap website, mobile website, iPhone, and Android apps following dissemination by an administrator. Additionally, the DoubleMap announcement module allows administrators to reuse

historical messages or select canned messages with ease. An example of this can be seen in figure below.

The proposed system software architecture allows for full control over the signs, including configuration, real-time updates of signs, and health monitoring. In addition to showing time of day and arrival time predictions, the signs display text messages generated by Columbia Transit system administrators. DoubleMap and Columbia Transit staff are able to view individual LED sign's operational status through the internal DoubleMap management site.

The real-time prediction arrival/departure of the next vehicle is recalculated periodically for all bus stops and the updated information is broadcasted to the message signs.

Announcements

Currently display 14 announcements with highlighted

Title	Content	Start	End	Actions
E Route	On Wednesday, 14 November 2012, the Metro Classic will be held at Sunnyside Park. This event is scheduled to be from 4:00 PM to 8:00 PM. During this time, the Stadium Express route buses will not be able to serve the 18th St & Sunnyside and 18th St & Audin bus stops. Please use the alternate bus stop at 16th St & 7th Street during the time of the event. The last E Route bus to not depart will be the 4:12 PM departure Sunline Station. The last E Route bus to resume the regular route will be the 5:32 PM departure from the Stadium. All other departures from the Stadium between 4:00 PM and 6:00 PM will use the alternate bus stop location.	2012-11-13 14:00:00	2012-11-13 18:00:00	View Edit Delete
Thursdays	Stadium Bus Service will not regular full Sunnyside bus service at approximately 10 PM on Friday/November 16, 2012. There will be no regular service on Friday and Saturday November 16 and 17, 2012. During Thanksgiving Eve at the E Route will be the only route operating. There will be no bus service on the two University holidays, Thanksgiving Day (Thursday November 22) and the day after Thanksgiving (Friday November 23). Regular full Sunnyside bus service will resume on Sunday November 25, 2012.	2012-11-13 18:00:00	2012-11-25 00:00:00	View Edit Delete
E Route	E Route Gateway Mail Road closure for 10/27 & 10/28 Due to construction on Gateway Mail Road between 3rd Street & 2nd Street, the E Route will operate on Gateway, 21 October and Sunday, 26 October 2012. Buses in the north end from Esplanade Apartments the bus will travel south on Union Street to 2nd Street. Buses that are not on Gateway on Monday, 22 October will be on Monday on 3rd Street. Buses that are on 3rd Street on Friday, 26 October will return to Gateway.	2012-10-27 00:00:00	2012-10-28 00:00:00	View Edit

Messages are displayed with route or station identifier and arrival/departure times are shown in minutes for the next two vehicles servicing the stop location. The Columbia Transit transit system name and the current time of day information are also interleaved among other general public announcement messages.

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- i. Software to allow Columbia Transit management to continuously track and monitor vehicles and bus operators  
*Both in real-time and by using archived information. The following reports are required:*

*Vehicle Location Data (replay map)*

DoubleMap is able to provide bus and route data

**Bus History Module**

DoubleMap provides a robust “DVR-Style” replay map displaying historic bus locations. The history tool empowers Administrators to rewind a single bus location or select a route and view the exact locations of multiple buses over a precise period of time.

Administrators select a specific, date, time, route, and range to observe a vehicles exact location. DoubleMap displays the actual GPS point, so DoubleMap administrators and DoubleMap have millions of data points to utilize when determining a vehicle’s location, speed, idle time, and heading.

For example, Figure 40 shows where bus 640 was located in the fifteen minute span between 11:00am and 11:15am on 12/12/12.

**Route History Module**

The bus history module is vital to driver management and route improvements, but DoubleMap also provides a route history module to aid dispatchers in answering incoming rider calls.

The route history example in the figure on the right displays information for all three vehicles servicing the D route at 11:18am. The vehicles are color coded on the rider side of the image, and correlate with heading by turning the vehicle icon color progressively darker as movement occurs. This results in figure on the right would equip a Columbia Transit employee with an invaluable snapshot for dispatchers to instantly answer and remedy any rider call-ins or complaints.

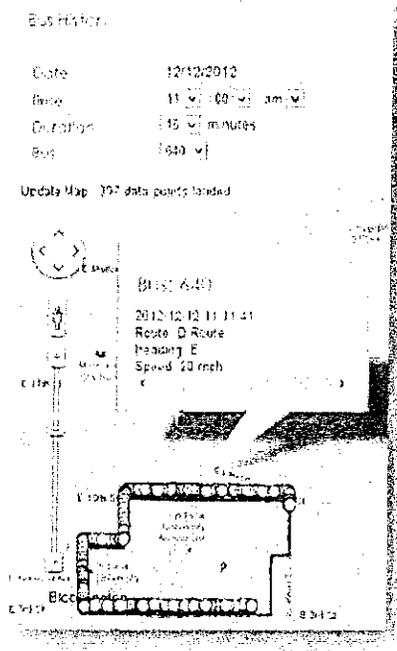


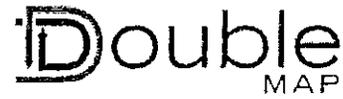
Figure 40

*Management reports that will optimize timetables and efficiency of service*

DoubleMap will provide a robust management reports suite that will greatly aid administrators in day-to-day efficiency. These reports are described in detail with



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Access to all realtime and archived vehicle location data must be available to third party applications (i.e. transit planning software, consumer mobile applications) for external development purposes. API to be used in development with customer interfaces to include:

- i. iOS apps
- ii. Android apps
- iii. Mobile Web apps
- iv. Websites

DoubleMap uses its own JSON format for providing transit data, and this is documented and shared by all of our client applications.

Indiana University and Georgetown University have utilized DoubleMap's API to develop third party applications for their rider base. DoubleMap can also provide data in GTFS format as well for integration with Google services for both static and live data.

Please reference part 3. AVL Software Modules, section B: web-based mapping for screenshots and detailed information on the DoubleMap iPhone, Android, and mobile-compliant website.

- j. Web server and database server for this project will be located at City of Columbia Data Center

DoubleMap has a proven server infrastructure that has redundancy in multiple geographic locations, so DoubleMap strongly encourages Columbia Transit to consider using the existing server arrangement.

This will take unneeded dependencies off of Columbia staff and provide 99.999% update.

DoubleMap can also provide Columbia Transit with legacy data to be housed in the City of Columbia Data Center.

- k. ADA Para-Transit Component

- 6. The vehicle tracking system installed on Columbia Transit Para-Transit vehicles (see Attachment C • Inventory List) shall not provide information to the public, only to Columbia Transit.

DoubleMap has experience with differentiating public and private-facing vehicles, and can meet the requirements set forth in this section.

- 7. Information to be provided shall include the location of the vehicle related to ADA service area, wait time of a vehicle at a particular location miles and hours traveled by each vehicle per day, and, for the past 30 days.

The information requested in this section will be available in the UTA reporting suite and cross-checked by an in-house statistician for NTD-certified accuracy.

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8. *Tools and wizards that will allow users to create, edit and save reports, interface with reporting requirements of NTD and generate a range of management and service reports to permit sufficient oversight of ADA Paratransit service.*

DoubleMap will provide this functionality through a partnership with UTA for a robust NTD reporting platform. The platform will provide the tools and wizards described in this requirement and is currently in use by over 300 transit agencies.

C. COMPONENT #2 - Automatic Voice Announcement (AVA) System

*AVA Functional Requirements:*

- a. Shall integrate with the proposed AVL and APC components and be utilized for all routes and stop locations.

The DoubleMap AVA solution is fully integrated with the AVL component and utilizes a single-source hardware for both modules. This integration allows for automatic GPS-triggered voice announcement in a time-critical fashion and employs all route and bus stop configuration data to work seamlessly with AVA and AVL functionality. Additionally, DoubleMap's unique ability to utilize a single piece of hardware results in several notable benefits: reduced costs for BTPC, less invasive wiring in buses, over-the-air updates to the hardware, and a general simplicity for administrators and drivers using the system.

DoubleMap ensures that the AVA system is fully compliant under the Americans with Disabilities Act of 1990 (ADA) and has designed an industry leading audio-based channel switch to differentiate internal and external speakers based on GPS location and administrative-side settings.

The combination of DoubleMap's software and hardware components will allow BTPC to manage announcements and routing data from a single portal and configure location, timeliness, and speaker arrangement for specific stops/transfer locations/points of interest from a web-based portal on any internet-enabled computer.

- b. Shall integrate with current, and future, electronic fare boxes and external signs on the buses.

DoubleMap has the ability to integrate with Luminator and Twinvision signage. However, both signs utilize proprietary software and were designed to operate with a central data input unit. The ideal scenario is one where DoubleMap can bypass the existing input unit and communicate directly with the signage. However, the age/make/model of each specific sign provides varying hardware limitations which vendors (including DoubleMap) cannot overlook.

If this situation presents itself DoubleMap advises Columbia Transit to upgrade to a newer sign, or one that has the ability to integrate directly into the data input unit. Integration into the data unit allows DoubleMap to automatically change information, but requires Columbia Transit to preconfigure the data input units with software that will accept DoubleMap's command text.

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Additionally, DoubleMap has the ability to integrate with electronic fare boxes. Fare box providers have historically provided a usable feed for AVL integration, but DoubleMap will be reliant on a usable data feed in order to provide proper integration.

Columbia Transit can help ensure that both external signage and fareboxes are integrated properly by facilitating a conversation when DoubleMap can ask specific questions of the manufacturer of each component.

c. Shall provide the following key vehicle hardware components:

1. *Automatic bus stop annunciator*

DoubleMap will provide the hardware necessary for automated bus stops announcements. Additionally, but has developed an industry-first component that will provide Columbia Transit additional control over interior vs. exterior announcements.

DoubleMap proposes Columbia Transit utilize a DoubleMap-specific module that differentiates a correct speaker set based on a "bing" sound proceeding the announcement. Administrators will be able to identify announcements based on the following criteria in the administrative back-end:

- Should this stop be announced?
- How far in advance should this stop be announced?
- Should this announcement be made inside, outside, or both?
- If this stop to be made outside-only, then should it only be made when the bus is stopped at a bus stop, or anytime it passes by a stop?
- If this announcement is set to announce outside, then are there time restrictions that should be placed on the announcement? (i.e. only announce between the hours of 8am-9pm, or only announce when multiple routes are scheduled to run through this stop)

The riders will hear a low-volume bing in advance of announcements, and a slightly higher octave bing when announcements are intended to be heard on exterior speakers. Additionally, the DoubleMap system can sense if a bus is in motion or stopped at a bus stop to provide Columbia Transit the flexibility of only announcing bus stops outside when a bus stops to let a passenger board or exit – meeting the same requirements of using the door as a trigger for external announcements, but adding numerous features for automating announcing of bus stops or transfer points.

2. *Gooseneck microphone and interface for vehicle operator public address functionality. The microphone shall integrate with the AVL system for amplification and programming automatic prioritization of messages. This microphone or an additional microphone shall automatically activate when the emergency alarm is*

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*in use. The location, directionality and sensitivity of this microphone shall be subject to Columbia Transit written approval.*

DoubleMap has developed a proprietary switch which will allow the Gooseneck microphone to operate in the same fashion that Columbia Transit has become accustomed to.

3. *No "facial" change, to any display or indicators, will take place when monitoring occurs.*

DoubleMap confirms that there will be no facial, display, or general indicator when monitoring occurs.

4. *Communication to the internal display sign shall be done via standard J1708/J1587 interface.*

DoubleMap can communicate over the J1708 protocol as long as the destination signage has available documentation for integration.

5. *Display should be one Internal LED Sign approximately 30" x 6", on each bus, located above the windshield to allow clear visibility to all on-board passengers without distraction to the driver. Signs must meet all ADA requirements for internal signage.*

DoubleMap will comply with the requirements set forth in this section.

6. *AVA and internal sign display shall be programmable with the same software/hardware tools.*

The DoubleMap AVA solution powers provides information for the internal sign and relies on the same administrative platform as the AVL system.

7. *Vendor shall provide all hardware equipment including enclosures. Sign enclosure should be aluminum with welded and sanded seams, black powderpaint. Signs are to be constructed to withstand the harsh environmental conditions of transit applications*

DoubleMap will be able to comply with the requirements in this section.

- d. Shall include all database programming and route mapping services necessary for the system to be fully functional and operational.

DoubleMap will provide Columbia Transit with a completely turnkey solution that will have all database programming and route mapping services necessary for the system to be fully functional from day 1.

- e. Shall provide a means for Columbia Transit to manage passenger announcements

BNPTS will be able to edit the AVA script to include additional announcement points or redact selected portions of any announcement. This is accessible from the administrative



announcement interface and will work with the announcement module discussed in the AVL Functional Requirements section above.

DoubleMap will provide a pre-defined and free form text message module within the administrative platform. Administrators have the ability to disseminate messages new in real time and schedule upcoming messages. An example of this toolset can be seen in figure.

These messages can be seen in real-time by riders using the DoubleMap website, mobile website, iPhone, and Android apps following dissemination by an administrator. Additionally, the DoubleMap announcement module allows administrators to reuse historical messages or select canned messages with ease.

- f. Audio and visual announcements of each stop are to be synchronized to allow the same information to be concurrently presented to the passengers  
Both audio and visual announcements are tied to the unified MDT and administrative module, so they will work simultaneously to provide audio and visual announcements of each stop.
- g. The announcements must be made in a timely manner to allow the passenger adequate time to activate the stop request signal  
DoubleMap utilizes a unified back-end in order to facilitate synchronization of all ADA information. The system is designed to permit administrators logical information entry; in other words, after a bus stop is made available for the AVL front end, it also becomes available for in-bus voice announcements and LED signage displays.  
DoubleMap ensures that all announcements and signage displays are made with ample time for riders to make an informed boarding decision and will provide BTPC the flexibility of setting preconfigured distances for announcements to be made.
- h. All announcements shall be automatically triggered using location cues provided by the system's AVL component  
DoubleMap will utilize a unified MDT for both AVA and AVL functionality, so announcements will be triggered using the GPS location and bus stop cross-references provided from the AVL system.
- i. The operator shall have the ability to select where the (PA) announcements are heard: inside, outside and/or both, via integration with the existing toggle switch  
DoubleMap has designed the AVA wiring to integrate fully with preexisting gooseneck mic and inside/outside/both toggle switch functionality.

Additionally, DoubleMap proposes Columbia Transit utilize a DoubleMap-specific module that differentiates a correct speaker set based on a "bing" sound preceding the announcement. Administrators will be able to identify announcements based on the following criteria in the administrative back-end:

Columbia Transit



- 
- Should this stop be announced?
  - How far in advance should this stop be announced?
  - Should this announcement be made inside, outside, or both?
  - If this stop to be made outside-only, then should it only be made when the bus is stopped at a bus stop, or anytime it passes by a stop?
  - If this announcement is set to announce outside, then are there time restrictions that should be placed on the announcement? (i.e. only announce between the hours of 8am-9pm, or only announce when multiple routes are scheduled to run through this stop)

The riders will hear a low-volume ping in advance of announcements, and a slightly higher octave ping when announcements are intended to be heard on exterior speakers. Additionally, the DoubleMap system can sense if a bus is in motion or stopped at a bus stop to provide Columbia Transit the flexibility of only announcing bus stops outside when a bus stops to let a passenger board or exit – meeting the same requirements of using the door as a trigger for external announcements, but adding numerous features for automating announcing of bus stops or transfer points.

- j. Vendor shall provide training for Columbia Transit staff and acceptance testing of the system. DoubleMap's implementation training stems from implementing software as a service (SaaS) platforms at the enterprise level. The project manager, Ilya Rekhter, leads all training and implementation support. His experience combines a variety of training programs from a number of blue-chip organizations and includes the effective organization of implementations. During prior employment, Ilya managed implementations for US AID in three pan-African countries and two fortune 500 companies. In all of DoubleMap's prior installations, the training strategy proves invaluable for synchronizing all parties, and the application of the enterprise-level installations enables for the execution of specialized installations and training experiences at transit agencies, including: Georgetown University (GUTS), University of Cincinnati (Croswell transportation), Indiana University (IU Campus Bus), Connect Transit in Bloomington/Normal Illinois (Illinois State University, Lincoln College, Tri-Towers), South Bend Transpo (Notre Dame, College of St. Mary, IU South Bend, Holy Cross), State University of New York (SUNY) at Cortland, Xavier University (Croswell transportation), and Butler University (Carey transportation).

A complete video tutorial is recorded highlighting the key functionality of the DoubleMap system. The video-based tutorial will be beneficial to the Columbia Transit team, which is complemented with in-person instruction from Ilya and his team. In combination, the in-house and video instruction offers a dynamic learning opportunity. Because the acceptance by drivers differs substantially from transit system to transit system, Ilya's commitment to on-site support for three months following installation ensures a concrete foundation of understanding. In addition to the video tutorials, DoubleMap is capable of providing an overview of the system remotely to new members of the Columbia Transit team. As

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DoubleMap adds additional features on its own accord or at the request of Columbia Transit, video tutorials or in-person instruction will also be provided to the extent necessary.

Confirmation regarding the effectiveness of the DoubleMap training program is possible within the Columbia Transit garage through discussions with IU Campus Bus employees and management. IU Campus bus has full control and a deep understanding of DoubleMap modules ranging from a DoubleMap administrative-level to incoming employees. Additionally, IU Campus can verify the responsiveness and helpfulness of multiple DoubleMap employees when questions arise. DoubleMap has multiple staff members located in the Bloomington area which visits the garage on a regular basis.

k. Shall include, but not be limited to, the following announcements:

8. *scheduled vehicle stops*
9. *major intersections*
10. *key transfer points*
11. *cautionary warnings*
12. *public service information*
13. *advertising*

DoubleMap is able to exceed all of the requirements in this section. One of the unique DoubleMap is the aforementioned functionality and capability with the AVL platform. This is key in streamlining day-to-day operations and reducing the necessity of repetitious



work that is associated with recreating material for multiple functions/platforms.

Columbia Transit staff will be able to access stops from within the routing module in the DoubleMap back-end and enable/disable major stops, major intersections, and transfer points with a simple checkbox.

Additionally, the announcement portion of the DoubleMap back-end enables easy dissemination of cautionary warnings, public service information, and advertising. This is the same module that DoubleMap uses for public-facing announcements in the AVL portion.

D. COMPONENT #3 - Automatic Passenger Counter (APC) System

APC Functional Requirements:

- a. System shall integrate with the proposed AVL and AVA components and be utilized for all routes and stop locations.

DoubleMap works with a strategic partner, Urban Transportation Associates (UTA), for this APC requirement. DoubleMap has developed an off-the-shelf Bluetooth solution for wireless communication with UTA's APC hardware. DoubleMap was the first, and only, vendor to successfully integrate UTA's APC's wirelessly into an MTC; which allowed for a less invasive install for UTA, lower cost for the client, and real time passenger data transmission to the administrative module.

This wireless integration will allow for seamless communication between the APC, AVL, and AVA components. This will result in real-time passenger loads being sent to the administrative platform for timely use by Columbia Transit staff.

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UTA will provide the Columbia Transit with a mature Automatic Passenger Counting (APC) Software Package consisting of proven APC Software modules and APC Support procedures applied to the APC data generated by the DoubleMap AVL system present on Columbia Transit vehicles. The UTA APC Software application being proposed for Columbia Transit has been implemented at approx eighty (80) large and small transit agencies using UTA on-bus APC hardware along with an additional ten (10) sites where UTA APC Software has been applied to APC data generated by non-UTA APC on-bus hardware.

b. Sensors:

- 1. Shall be discreet, optical, non-contact design

The APC system will comply with these requirements.

- 2. Shall detect presence and direction of passenger movement at each vehicle door whether boarding or alighting from the bus.

The APC system will comply with these requirements.

- 3. Shall accurately count passengers simultaneously boarding and alighting from the same door.

The APC sensors will comply with these requirements.

- 4. Shall use infrared or other similar sensors that have a high level of reliability

The APC sensors will comply with these requirements.

- 5. Shall be designed to operate within a transit environment

The APC sensors will comply with these requirements.

- 6. Proper alignment shall not be susceptible to normal vibrations found on a bus.

The APC sensors will comply with these requirements.

c. System shall count all boarding and departing passengers at each stop and calculate the number of riders on-board after each stop

The APC sensors will comply with these requirements.

d. System shall include a means to verify proper operation of count sensors and to diagnose problems. The measured accuracy for each stop for a given trip shall be at least 95 percent.

UTA provides the most dependable and accurate APC system available, so the The APC sensors will comply with these requirements.

e. System processing unit shall connect to door open sensors and count only when doors are open.

The APC sensors will comply with these requirements.

Columbia Transit



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f. System must be capable of determining when each doorway of the bus is open or closed. *Since boarding and alighting activity must be provided separately for each doorway, the door open/close sensor must be capable of differentiating between each doorway.*

The APC sensors will comply with these requirements.

g. System shall acquire necessary input information *Such as route, block, run, stop ID, and latitude/longitude from the AVL system and connect to the AVL system using the SAE J-1708 interface standard and J-1587 messaging standard.*

DoubleMap views the ability to interface the MTC with additional components as a core pillar of strength and a main differentiator in relation to other vendors.

The DoubleMap MTC has the capability (and positive track record) to integrate numerous components wirelessly via Bluetooth, and has done so with UTA's APC equipment. DoubleMap was the first, and only, vendor to successfully integrate UTA's APC's wirelessly into an MTC; which allowed for a less invasive install for UTA, and lower cost for the client. Additionally, DoubleMap is able to interface with the MTC with VAS components to provide Next Stop Annunciation.

DoubleMap is able to interface with equipment using J1708, but recommends the Bluetooth to RS232 protocol that has been working successfully with UTA's APC hardware.

h. System should be integrated with the vehicle location data that is collected and transferred via the wireless communications network to the dispatch center after each stop

One of the core advantages that DoubleMap is able to provide with the wireless communication protocol with APC equipment is realtime data transmission. The DoubleMap system has provided UTA with unprecedented data quality at a blazing pace that is second to none. This means that vehicle location data is sent every 1-2 seconds to the dispatch center and includes stop, adherence, passenger load, and speed data.

i. Vendor should include a clear description of how the passenger count data is obtained, and stored, as well as the hardware and software required for storage and transmission to dispatch.

Passenger data is collected in real time by the DoubleMap and sent back every 1-2 seconds. The real-time loads become available to dispatch using the dashboard view in the administrative platform by selecting an individual vehicle.

Passenger data is simultaneously sent to UTA for processes and NTA-certification. UTA then proactively disseminates the cleansed data back to dispatch and Columbia Transit administrators in an easy-to-use report for filtering and further manipulation.



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j. Sample reports available from the passenger count data should be submitted.  
Please see attachment A for passenger reporting data.

k. Proposers must document that memory is sufficient to store all data for three (3) days of vehicle operation.  
DoubleMap can greatly exceed this requirement.

l. A backup system for data recovery and transmission is required. Describe the backup system to be used in the event of a system failure  
DoubleMap has server redundancy in multiple geographic locations. This allows for continuous backup and industry-leading uptime for the service.

m. All data shall be processed in real time.  
DoubleMap will comply with the requirement set in this section.

n. System shall generate passenger boarding data for NTD reports.  
DoubleMap and UTA will comply with this requirement.

o. Provide training for Columbia Transit staff and acceptance testing of the system.  
*Please reference section 3.2 for training methodology information.*

p. System must have adequate protection against vandalism.  
*DoubleMap and UTA both comply with this requirement and have proven durability at multiple blue-chip transit agencies.*

E. Optional Scalable AVL for Fleet:

*Vendor response to this part of the proposal is strictly optional. The City of Columbia's primary interest is in securing and implementing an AVL system for Transit. Evaluation and subsequent award of this RFP are solely dependent on the Transit solution. However, the City is also interested in receiving proposals from vendors on the scalability of their system to provide AVL for municipal fleet management of about 500 vehicles involved in solid waste, snow removal, public safety, and other applications. This option may or may not be awarded as part of the RFP.*

*If the vendor elects to respond to this part of the request, the vendor should provide detail about possible solutions and modular implementations which includes pricing.*

DoubleMap is interested participating in discussions with the city of Columbia about an AVL system for the municipal fleet. Additional information about the specific update interval requirements, driver communication needs, and reporting goals are required in order for DoubleMap to provide a bid for this proposed project.

Columbia Transit



3. TECHNICAL PROPOSAL

3.1 VENDOR INFORMATION/EXPERIENCE

- A. Provide a brief synopsis of the firm, including when and where incorporated, major business activities, and a listing of officers of the company. State whether the firm is local, regional, or national and how long the firm has been in existence under current ownership/management.

DoubleMap was founded and is headquartered in Indiana. DoubleMap is a partnership incorporated in the state of Indiana. DoubleMap has attained over \$1.2 million dollars in contracts in 2012. The current clients DoubleMap has a total of 15 employees who work in a variety of capacities on DoubleMap projects. Ilya Rekhter is an officer of the business, and he'll be constantly communicating with the team in Columbia as the project manager. DoubleMap's clients span from California to New York.

- B. This section should demonstrate the Proposer's experience, skills and qualifications of the Project Manager and other key personnel in providing the solutions requested in the RFP and in meeting client goals, objectives and schedules. Describe direct experience. Detail any plans on services the Proposer will provide that are not specifically required in this RFP.

Key Personnel Credentials and Availability Statement

DoubleMap has assigned personnel who were responsible for management and successful delivery of major project at with IU Campus Bus, Butler University, and South Bend Transpo, Xavier University, Georgetown University, and SUNY Cortland. The individuals identified as key personnel will be available for the duration of this project. No person on the DoubleMap team designated as "key" to the project will be removed or replaced without the prior written consent of Columbia Transit.

Staff Name	Responsibility on project	Current Location	Current Assignment	# of Years with DoubleMap
Ilya Rekhter	Project Manager	Indianapolis, IN	Lead Project Manager	4
Eric Jiang	Program Manager	Bloomington, IN	Dir. of Product Development	3
Jacob Henderson	Support and Field Service Manager	Bloomington, IN	Dir. Of Support and Technical Helpdesk Inquires	3
Peter Servaas	Training	Indianapolis, IN	Dir. of Sales and Training	3
Matthew Lorentz	Assistant Project Manager	Bloomington, IN	Project Manager	1



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Ilya Rekhter – Lead Project Manager

Mr. Rekhter is responsible for overseeing all aspects of operations for DoubleMap, including customer support during and post system implementations. He has a diverse background in customer service, project management and finance. Prior to joining DoubleMap, Mr. Rekhter was an international strategy consult at Abt Associates and Zanett. He has managed enterprise software implementations for government organizations in over 15 countries with specific focus on the remote management of site offices in pan-Africa. Mr. Rekhter has worked with IU Campus Bus, Butler University, and South Bend Transpo, Xavier University, Georgetown University, and SUNY Cortland in a project management capacity to ensure custom features met the organizations' specific requests.

Eric Jiang – Director of Product Development

Mr. Jiang is responsible for overseeing the development of new DoubleMap product features. This includes preparing design requirements and monitoring project plans across multiple development platforms. Mr. Jiang is also responsible for the project management of software and system customization for individual client needs. He participates in the implementation process by advancing the project life cycle in the areas of design, development, quality assurance, system acceptance and system production. Prior to joining DoubleMap, he was a product manager at Google within the maps vertical. Mr. Jiang has worked with IU Campus Bus, Butler University, and South Bend Transpo, Xavier University, Georgetown University, and SUNY Cortland in the implementation of custom interfaces and routing methodologies.

Jacob Henderson – Lead Support and Field Service Manager

Mr. Henderson joined DoubleMap in 2009. He is responsible for overseeing the support activities of all engineers and technicians. This includes providing guidelines and action plans in addressing issues arising from the DoubleMap system implementation. He is also responsible for closely monitoring the performance of the system by analyzing issues and determining the type of resources required for a resolution. He oversees the tracking and recording of trouble tickets and provides feedback and progress updates to clients. Mr. Henderson is also responsible for project management of system engineers and technicians for delivering customized solutions. He participates in the implementation process of hardware installation, quality assurance, system acceptance and system production. His clients include IU Campus Bus, Butler University, and South Bend Transpo, Xavier University, Georgetown University, and SUNY Cortland. Prior to joining DoubleMap, he worked at RightRezIncin developing applications for managing travel ticket inquiries and log systems. Jacob is proficient in the following areas: Java & Scheme Programming Languages, C Programming language, Combinatorial mathematics, Embedded ARM programming, Data structures and Algorithms, Network and web server development.

Peter SerVaas – Director of Sales and Training

Mr. SerVaas joined DoubleMap in 2009. He is responsible for overseeing the activities related to providing the DoubleMap platform to transit agencies and universities. Mr. SerVaas covers all

Columbia Transit



universities in the top 100 according to the US News and World Report. For those clients, he handles the initial contract discussions, and he supports the DoubleMap team during the final stage of installation by training drivers, dispatchers and administrators. Prior to DoubleMap, Mr. SerVaas worked as an investment banking analyst at Lazard. He went on to serve as Vice President of Corporate Development at Bar Keepers Friend.

Matthew Lorentz – Assistant Project Manager

Mr. Lorentz joined DoubleMap in 2011. He is responsible for overseeing the activities for system implementations at transit agencies and universities by planning, organizing and scheduling with the client’s project team and DoubleMap staff. He leads the implementation team in the areas of installation, quality assurance, system acceptance and system production. He defines requirements to maximize customer satisfaction by ensuring all functions are delivered in accordance to project plan and schedule. He monitors daily performance of client systems in an effort to maintain the level of service promised in the agreements. He analyzes issues and determines the appropriate resources required for resolving the issues. He coordinates with DoubleMap support personnel in resolving hardware and technical issues where necessary during and after implementation.

- C. *The offeror shall demonstrate past performance related to the scope of work. The offeror shall provide a minimum of five (5) contract references both for itself and for any major subcontractor to enable the City of Columbia to assess the quality of the offeror’s and major subcontractors’ past performance. The referenced contracts shall be similar in scope, magnitude and complexity to that contemplated in this RFP.*

Connect

– Bloomington-Normal Public Transit System - 351 Wylie Drive, Normal, IL 61761

Contact: Andrew Johnson – General Manager, (812)855-8961 -- [ajohnson@bnpts.com](mailto:ajohnson@bnpts.com)

Fleet Breakdown: 32 buses, 3 repair vehicles

Services Offered: AVL, AVA, APC, Digital APC

Current Status & and System Overview:

DoubleMap’s AVL and AVA system were implemented over two back-to-back weekends. The APC Installation by UTA required an on-going installation process for two weeks. The system is now fully-operational.

Transpo -

– Notre Dame University, Saint Mary’s College, Holy Cross College, Bethel College, City of South Bend, City of Mishawaka - 1401 South Lafayette Boulevard - South Bend, IN 46613

Contact: Chris Kubaszak (Chief Financial Officer),(574) 239-8903 -- [CKubaszak@sbtranspo.com](mailto:CKubaszak@sbtranspo.com)

Fleet Breakdown: 56 buses, 9 access shuttles

Services Offered: AVL, APC, Upcoming RFP includes AVA

Current Status & System Overview:

DoubleMap implemented the solution over a one week period. After installation, TRANSPO requested an auto-routing interface to eliminate need for dispatcher interaction with DoubleMap.

Columbia Transit



DoubleMap delivered on this functionality. Through this feature, the “system just works” based on the GPS locations of the tablets. TRANSP0 then requested DoubleMap to create custom user interface for driver interaction with the tablet. Both features were done at no cost to TRANSP0, and have resulted in an RFP due in January 2013. The final result is an integrated system of six systems (four universities and two cities) into one site that is viewable by all riders.

Campus Bus

– Indiana University - 120 W. Grimes Lane - Bloomington, Indiana 47403

Contact: Perry Maull (Operations Manager), (812)855-8961 -- [pjmaull@indiana.edu](mailto:pjmaull@indiana.edu)

Fleet Breakdown: 27 buses

Services Offered: AVL, AVA, Digital APC

Current Status & and System Overview:

DoubleMap installed during one week of Christmas Break between 2011 and 2012. The entire system was installed in time for the return of students. The website and iphone gained immediate acceptance, and DoubleMap has since extended into the IU Mobile application and released an Android app. The DoubleMap service is accessed over 300,000 unique times throughout Bloomington each month and has experienced consistent year-over-year growth.

GUTS

-Georgetown University - 37th and O Streets, N.W.- Washington D.C. 20057

Contact: Ronald Brumley (Director, IT Systems), (202)687-2678 -- [rrb27@georgetown.edu](mailto:rrb27@georgetown.edu)

Fleet Breakdown: 16 Georgetown-owned buses, 14 3<sup>rd</sup>-party vendor buses

Service Offered: AVL

Current Status & System Overview:

DoubleMap competed in a competitive RFP and was awarded the contract for its ability to offer a “unique solution”. The installation occurred over a four day period in November. The solution includes a custom battery-based enclosure for 3<sup>rd</sup> party buses, which is completely mobile. DoubleMap fulfilled its promise regarding the unique solution, which is combined with the standard platform. Both are now operational at Georgetown. Finally, DoubleMap provided three different custom tablet interfaces, based on the Director’s requests. Each interface was created based on her request and delivered with 24 hours at no additional cost. The most trying complexity was the fact that the bus garage is located five stories underground without any cellular, wifi or Ethernet connections available to the DoubleMap team.

SUNY Cortland

Contact: Linette Mowers : Assistant Physical Plant Director, 607-753-2509 -- [Linette.Mowers@cortland.edu](mailto:Linette.Mowers@cortland.edu)

Fleet Breakdown: 12 SUNY Cortland-owned buses

Service Offered: AVL

Current Status & System Overview:

The agreement was consummated within two months from the first call. The DoubleMap installation team headed to New York the second weekend after the official request was received.

Columbia Transit



The system was installed over a weekend and operates using DoubleMap's innovative "auto-router". This feature requires no involvement from the drivers and transportation team. Linette recently shared with DoubleMap that students love the system, and she keeps finding new, exciting features on the back end. DoubleMap typically penetrates 25% to 50% of the student body based on unique viewers. The popularity is attributed to the smooth interface on both iPhone/Android and the DoubleMap website.

Additional References Available Upon Request

### 3.2 PROGRAM MANAGEMENT/PROJECT APPROACH

- A. *Present the management approach to be followed and the management techniques required for implementation and control of the work. At minimum address and include a service start-up plan and schedule.*

DoubleMap is committed to providing Columbia Transit with top-tier project management through a combination of an experienced implementation team and proven process-control methodology.

Project management personnel information can be found in the Qualifications and Capabilities section of this RFP. DoubleMap's standard project methodology and control process is designed to identify and discover issues and challenges early. DoubleMap will be able to meet and exceed the requirements through the use of a closed-loop management strategy that has resulted in numerous successful implementations.

The schedule and budget of any project is subject to errors, changes, and other unpredictable events that are not foreseen by the planners of the project. For example, DoubleMap may experience a shipping delay or Columbia Transit may wish to expand the project scope to satisfy new business requirements. These and other unpredictable events can significantly affect the project schedule and budget. In the spirit of cooperation and partnership with Columbia Transit, and within reasonable limits, DoubleMap will manage the unpredictable and deliver the project on time and on budget.

Major project changes requested by Columbia Transit, or caused by Columbia Transit, are contractual issues that the Project Manager must resolve by obtaining Columbia Transit's agreement and/or change the project schedule, or by engaging in the contract resolution procedures specified by the contract. The standard project methodology may reveal contractual issues, but it does not address them directly.

The purpose of DoubleMap's standard project methodology is to deliver on time and on budget when there are no contractual issues. DoubleMap manages this unpredictable by a control process. In the DoubleMap control system, the progress of the project is periodically compared with the planned schedule. Errors in the project are corrected accordingly until the system is delivered. The process is a closed-loop system that converges upon the project commitments with a sampling and correction period of one week.

The correction of the project occurs in the weekly "PM meetings". The meetings are compulsory and are attended by all members of the project team. The Project Manager updates the Gantt

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and organizes the meeting. In the PM meeting, the Project Manager polls each participant whose name appears on a Gantt chart and asks whether the Gantt correctly states the progress of the participant for that week. If not, each participant explains why not and makes a new projection of the completion schedule. The Project Manager corrects the chart. It is the responsibility of the Project

Manager to ensure that any schedule slippage is discussed by the group and resolved before moving on to the next participant.

When a problem is discovered early enough, a wide range of corrective reactions are available to the participants, ranging from solving the problem on the spot to adding more people to the project.

Project Manager records the changes instituted at the PM meeting on the Gantt charts so that new charts can be provided at the next meeting. This set-up insures that all project-tracking tools are updated by the changes.

Please reference attachment B to review the proposed installation strategy.

- B. *Provide an organizational chart showing how the project will be staffed in all functional areas. Indicate the number of employees of each type. Indicate how the on-site staff will be supported by other regional or national staff and the reporting relationships between on-site staff and other firm management staff, if applicable.*

Please reference question 3.1 and subsection B for the information regarding the team assigned to work with Columbia Transit along with the organizational table. All staff working on behalf of DoubleMap will be full-time employees of DoubleMap. From technical development to installation, an internal team enables DoubleMap to provide premium service through every step of the process. The support staff receives calls and works at any hour of the day or night – particularly during installations. The on-site staff will simply be supported on an as needed basis by the off-site team. At times, the client will request special modifications to hardware or software that are communicated via the on-site representative to members who are either on-site or at the headquarters. All of the preparation work is completed at DoubleMap headquarters, which enables a rapid installation. DoubleMap even sends all of the equipment with the proprietary software loaded for clients who wish to install on their own buses. This type of operation requires a meticulous methodology related to the execution of an installation. DoubleMap prides itself in always having installed the hardware in the allocated amount of time or less. This achievement requires a significant amount of preparation.

Additionally, DoubleMap utilizes a digital scorecard in order to provide a status overview for project component, an expected impact for the next phase of the implementation, and requirements for DoubleMap and Columbia Transit staff for continued success.

Columbia Transit



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- C. *Define and identify the proposed key on-site project staff. Provide resumes and references for all key staff. Indicate whether each has worked in operations similar to what is requested in the RFP and in what capacity they served at these other operations.*

Please reference question 3.1 and subsection B for the information regarding the team assigned to work with Columbia Transit along with the organizational table. The short resumes provide insight into each members experience with the team, which highlights each person's potential role at Columbia Transit.

- D. *Please provide a detailed description the offered training for proposed solution, to include staff training for; 1) Supervisors, 2) IT Director and IT Staff, 3) Office Staff, 4) Driver Operators, and 5) Vehicle Technicians.*

DoubleMap's implementation training stems from implementing software as a service (SaaS) platforms at the enterprise level. The project manager, Ilya Rekhter, leads all training and implementation support. His experience combines a variety of training programs from a number of blue-chip organizations and is effective in organizing implementations. During prior employment, Ilya managed implementations for US AID in three pan-African countries and two fortune 500 companies. In all of DoubleMap's prior installations, the training strategy proves invaluable for synchronizing all parties, and the application of the enterprise-level installations enables for the execution of specialized installations and training experiences at transit agencies, including: Georgetown University (GUTS), University of Cincinnati (Croswell transportation), Indiana University (IU Campus Bus), Connect Transit in Bloomington/Normal Illinois (Illinois State University, Lincoln College, Tri-Towers), South Bend Transpo (Notre Dame, College of St. Mary, IU South Bend, Holy Cross), State University of New York (SUNY) at Cortland, Xavier University (Croswell transportation), and Butler University (Carey transportation).

DoubleMap is committed to providing in-person training for Columbia Transit, and will do so in group settings and on a person-by-person basis. Additionally, a complete video tutorial will be provided highlighting the key functionality of the DoubleMap system. The video-based tutorial will be beneficial to the Columbia Transit team, which is complemented with in-person instruction from Ilya and his team. In combination, the in-house and video instruction offers a dynamic learning opportunity. Because the acceptance by drivers differs substantially from transit system to transit system, Ilya's commitment to on-site support for three months following installation ensures a concrete foundation of understanding. In addition to the video tutorials, DoubleMap is capable of providing an overview of the system remotely to new members of the Columbia Transit team. As DoubleMap adds additional features on its own accord or at the request of Columbia Transit, video tutorials or in-person instruction will also be provided to the extent necessary.

Further validation for the DoubleMap training program can be seen within the Columbia Transit garage through discussions with IU Campus Bus employees and management. IU Campus bus has full control and a deep understanding of DoubleMap modules ranging from an administrative-level to incoming employees. Additionally, IU Campus can verify the responsiveness and helpfulness of multiple DoubleMap employees when questions arise. DoubleMap has multiple staff members located in the Bloomington area which visits the garage on a regular basis.

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The DoubleMap system has been designed to be user-friendly and employ an industry-low learning curve. Because of this, DoubleMap is willing to provide 30 hours of on-site training in a mix of classroom and hands-on training that Columbia Transit can choose.

The training program includes, but is not limited to, the following core sections:

1. Driver interaction with MDT
  - a. How the MDT works (turns on/off automatically & doesn't require driver interaction)
  - b. How to use MDT interface (login, route assignments)
2. Dispatch management toolset
  - a. Viewing real-time vehicle location information
  - b. Routing vehicles through web interface (secondary/fallback option to driver run inputs)
    - c. Viewing current routes
    - d. Creating daily route exceptions
    - e. Editing routes (add/remove stops, change route course)
    - f. Planning for upcoming route changes
    - g. Dispatching public detour or delay announcements
3. Accountability management toolset
  - a. View "DVR-style" historical locations of vehicles by route, driver, or bus number
  - b. View metrics by driver (average speed, average route time)
4. Reporting toolset
  - a. How to view and user reports
  - b. How to extract raw reporting data

### 3.3 FUNCTIONALITY

- A. *Provide a detailed description of how your proposed solution will meet each of the Technical Requirements.*

Section 2.4 above provides an in-depth breakdown of the DoubleMap system and each module's technical capability.

Columbia Transit

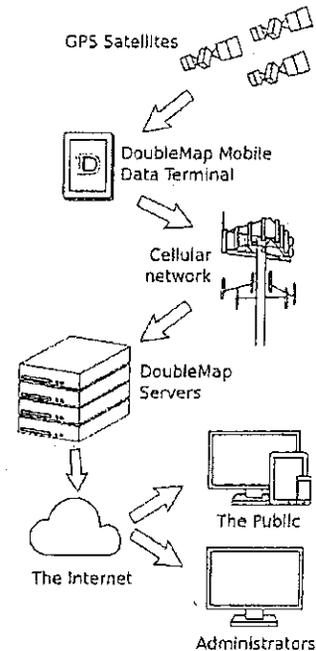


B. Provide detailed information regarding the following; 1) dataflow diagram for proposed solution, 2) network diagram of proposed solution (to include parts that need to be opened), and 3) system requirements of proposed solution (both server and workstation).

1) The hardware MDT installed on each bus sends data directly to DoubleMap servers over a 3G cellular network. Data is stored and processed on DoubleMap servers, and the agency can access the data through the online administration portal using an ordinary web browser.

2) DoubleMap's solution is cloud hosted, requiring no special network configuration or software installation for the transit agency.

3) The DoubleMap administration portal requires a recent, standards-compliant web browser, which includes Microsoft Internet Explorer version 8 or higher, Mozilla Firefox version 3 or higher, or Google Chrome.



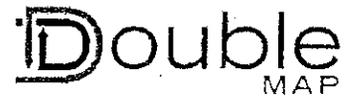
C. Provide a detailed explanation regarding the compatibility of your proposed solution with the City of Columbia's current IT environment.

All DoubleMap management tools have been designed with ease-of-use a, simplicity, and integration with current IT infrastructure in mind. This results in a platform that is able work on any internet-enabled computer without the need to install any additional software, and a learning curve that is significantly lower than any other software platform our current client base has ever used (references available upon request). Furthermore, the chief architect of the DoubleMap platform is a former Google employee and has extensive experience working with mapping and Google Transit.

Additionally, the web-based design of the DoubleMap administrative platform allows a DoubleMap administrator to make changes in real-time on office computers, or on devices such as the Apple iPad from the field. This places real-time capability in the hands of Columbia Transit and allows for immediate system updates. This seamless approach is a fundamental change from many vendors who require a written notice for system route/stop changes and often set thresholds for the number of changes that are included before additional costs are incurred.

DoubleMap is committed to providing a comprehensive solution to Columbia Transit with unlimited changes and simultaneous user access. DoubleMap will provide an in-person training program to ensure Columbia Transit has a deep understanding of the management controls available and is confident in an in-house ability to make changes or additions to the system in addition to provide periodic on-site visits to ensure ongoing accuracy (numerous site visits can be verified by IU Campus Bus).

Columbia Transit



- D. Offer a detailed description of the availability and compatibility of the proposed with any wireless mobile applications for smartphones and tablets.

Please reference part 3. AVL Software Modules, section B: web-based mapping for screenshots and detailed information on the DoubleMap iPhone, Android, and mobile-compliant website.

- E. Provide an explanation of the proposed solutions functionality in a virtual environment.

DoubleMap is built entirely on a cloud-hosted infrastructure and is compliant with Html5, Ajax, and Google Maps V3. This results in full compliance in a virtual environment.

- F. Explain whether your application will run on a workstation as non-administrator. Will the proposed application run as a standard user?

The DoubleMap system is designed to work for multiple user levels, which can be defined by Columbia Transit.

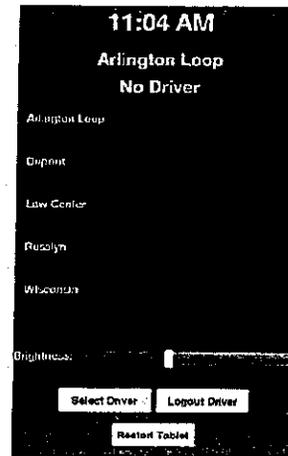
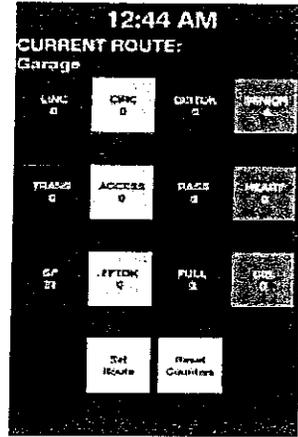
Additionally, the web-based design of the DoubleMap administrative platform allows a DoubleMap administrator to make changes in real-time on office computers, or on devices such as the Apple iPad from the field.

### 3.4 VALUE ADDED FEATURES

- A. Describe any unique, no-cost features of your proposed solution, outside the scope of this request, which will provide benefit to the City of Columbia.

DoubleMap maintains positive relationships with its clients by constantly offering and presenting new features. The most popular feature that is provided at no cost is custom Mobile Data Terminal (MDT) interface. As was stated with Georgetown, DoubleMap provided three different custom tablet interfaces – all based on the Director’s requests. Each interface was created based on her request and delivered within 24 hours at no additional cost. Ultimately, she decided upon having a driver listed immediately populate when the bus is turned on and requiring a driver to enter a 5 digit password. After the password is selected, the driver may select a route, as displayed in Figure [X]. For public systems, such as Columbia Transit and Connect, the routes are managed by the dispatcher, so other options are more appealing. Connect prefers using it to complement its APC solution to count passengers by type – twelve (12) in total. DoubleMap created numerous buttons representing unique riders, e.g., students, elderly, handicapped, to record ridership by type, as displayed in Figure [X]. This ridership data can also be used to validate the APC data that DoubleMap receives from the doors.

Columbia Transit



Additionally, DoubleMap could potentially provide its iphone/android application interface within a native application for any of the three universities whom Columbia Transportation serves: University of Missouri, Stephens College and Columbia College. For example, Notre Dame requested to implement a page within its Notre Dame application of the DoubleMap information for Transpo. The same was achieved at Illinois State University with the information from Connect, the public transit system. DoubleMap is currently in discussions with the public system in Bloomington, Indiana, whose ridership consists of 70% of the riders associated with the university. If DoubleMap installs, it will integrate the public transit system information into the Indiana University application.

3.5 SUPPORT/WARRANTY

A. Provide a full and detailed description of any and all warranties that are provided with the proposed solution.

Limited Equipment Warranty. The Equipment is warranted against defects in workmanship and material for the duration of the warranty period after the installation of such Equipment in the vehicles. DoubleMap may, at its discretion, replace, modify, or repair any or all components of the Equipment.

Columbia Transit shall be solely responsible for any DoubleMap equipment that is lost, stolen, misplaced, damaged, destroyed, or otherwise made unavailable to DoubleMap while in the possession of Columbia Transit. Columbia Transit shall be solely responsible for the actual cost of damages to the Equipment resulting from negligence, abuse, accident, acts of God, acts of third parties, theft, loss, or destruction up to the original cost of the unit.

Columbia Transit



- 
8. *Provide a full and detailed description of all levels of service, maintenance, and support available for the proposed solution. This should include ongoing and extended plans.*

DoubleMap intends to fulfill the same quality of service it does outside of the warranty period. DoubleMap stands behind its service, and the most powerful way to understand the depths in which DoubleMap will go is to call the clients. DoubleMap accommodates for clients in all situations.

DoubleMap will provide a live agent for help desk technical support during the following eastern standard business hours: 8am-6pm.

Additionally, DoubleMap's utilizes an email ticket system to quickly address tier 1, tier 2, and tier 3 issues with proper personnel.

DoubleMap has demonstrated responsiveness through the IU Campus Bus implementation and will continue to provide elite customer support if awarded this contract. DoubleMap is also familiar with numerous Columbia Transit staff members through interaction during past site visits to IU Campus Bus, so they can serve as impartial sounding boards about the responsiveness and effectively of DoubleMap personnel.

DoubleMap will charge a fee of \$50 dollars per hour for a technician to visit for matters outside of the warranty coverage or period. Due to the proximity of Indianapolis to Columbia, DoubleMap will reduce its on-site visit charge to only \$400 per visit. DoubleMap trains its customer's staff to a point where the staff's proficiency enables the resolution of issues without a visit or call to DoubleMap -- typically after the first three (3) months of implementation.

### 3.6 PRICING TO BE QUOTED

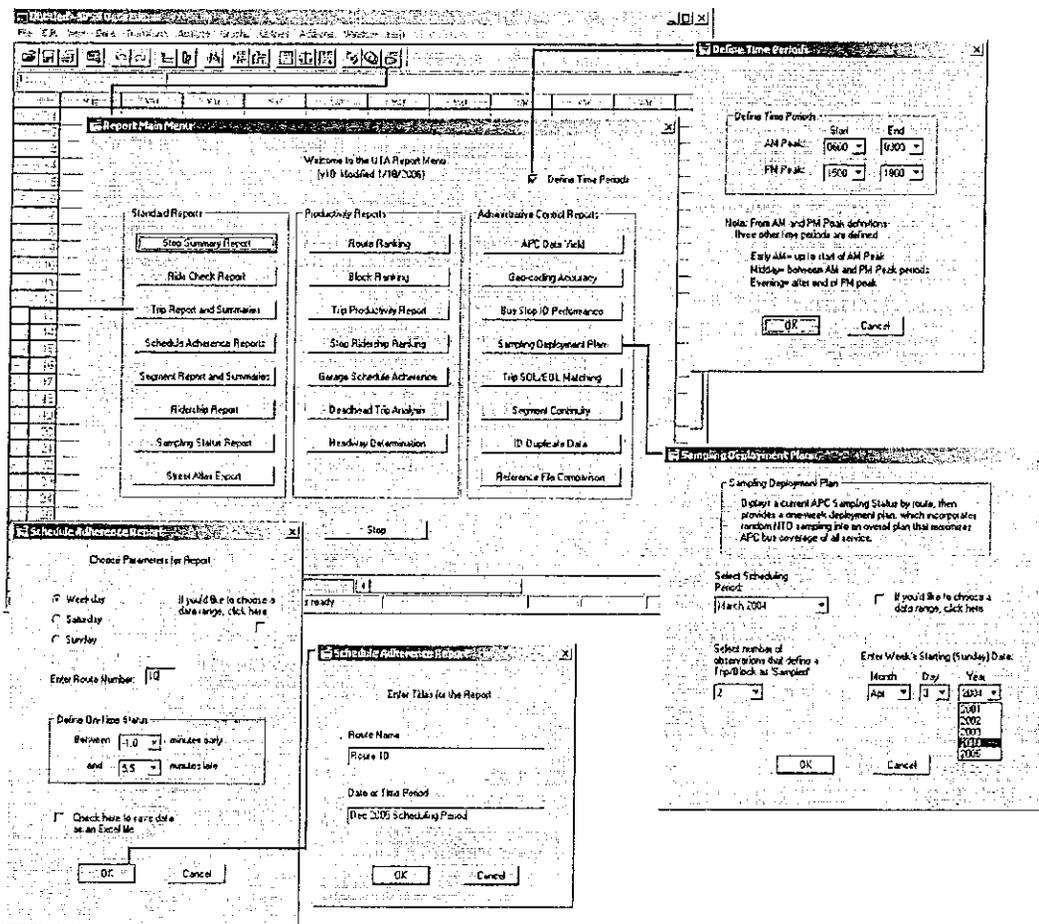
- A. *The City of Columbia anticipates awarding a fixed price contract.*
- B. *The City of Columbia will evaluate cost/price proposals for reasonableness, completeness, and realism as appropriate.*
- C. *Detailed and summary cost proposal forms are attached as Attachment B. The costs/prices included in the cost/price proposal should include all items of labor materials, and other costs necessary to perform the contract. Any items omitted from this RFP which are clearly necessary for the completion of the work being proposed should be considered part of the work though not directly specified or called for in this RFP.*

Please refer to the pricing sheet.

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### 3.8. Report Generation Software

It has been UTA APC Software philosophy to create unique APC data files from which flexible report generators can be easily adapted to create unique formats and summary statistics for the various APC users. APC report generators will be installed on the APC computer system. Included in this proposal is installation of IBM's Statistical Package for Social Science (SPSS) and DTC staff training in the area of APC Report Generation. Below, find an example of the Graphical User Interface (GUI) available to run reports. This GUI queries various database formats, from ASCII text to SQL databases.



This section will outline the specific reports/plots that will be provided as part of UTA standard APC Software package. Examples of each report are presented in Appendix A.

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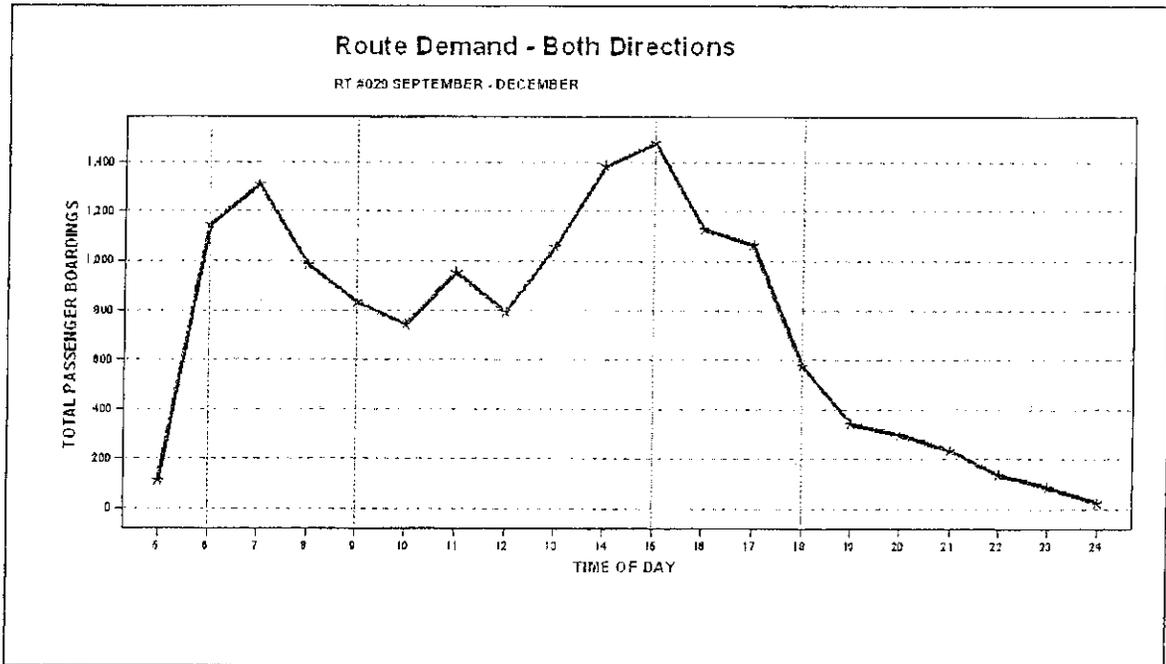
### APC REPORTS

#### Route/Historical Summary

Presentation of all APC variables for each block and each route sampled.

#### Route Demand Plot

Route Ridership illustrated for each revenue hour.



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**Trip Report/Summary**

Presentation of all variables for each trip in each direction of a given route.

*Trip Report*

This report gives individual observations for trips on a given day. Variables reported include block, riders, running time, velocity, 120% load duration, door cycles, passengers per hour, passenger miles, and max load. Averages are then reported on these variables for each trip time.

TRANSPO												
ROUTE 10												
Weekday - LOOP												
TRIP REPORT INDIVIDUAL OBSERVATIONS												
SUMMER 2008												
TRIP DEPART TIME	BUN	DATE	DAY OF WEEK	RIDERS	TRIP TIME	VEL (MPH)	LOAD FACTOR	120% LOAD DURN	DOOR CYCLES DURING TRIP	PASS PER HOUR	PASS MILES	MAX LOAD
07:40	15	06/03/08	TUE	15	18.4	15.1	.155	.0	11	22.8	32.1	19
		06/09/08	MON	22	21.0	13.1	.241	.0	16	34.3	46.0	13
		06/13/08	FRI	17	19.7	14.5	.113	.0	17	16.5	14.2	8
		06/16/08	MON	27	23.4	12.4	.386	.0	18	43.6	76.8	19
		06/23/08	MON	12	17.0	16.8	.162	.0	11	25.1	34.1	11
		07/02/08	WED	21	26.7	13.7	.254	.0	13	45.5	49.5	18
		07/08/08	TUE	13	18.1	15.7	.139	.0	10	33.1	28.3	11
		07/12/08	FRI	13	17.7	16.0	.178	.0	14	44.2	34.2	11
AVG				18	19.5	14.7	.204	.0	14	35.0	40.6	12

*Trip Summary Report*

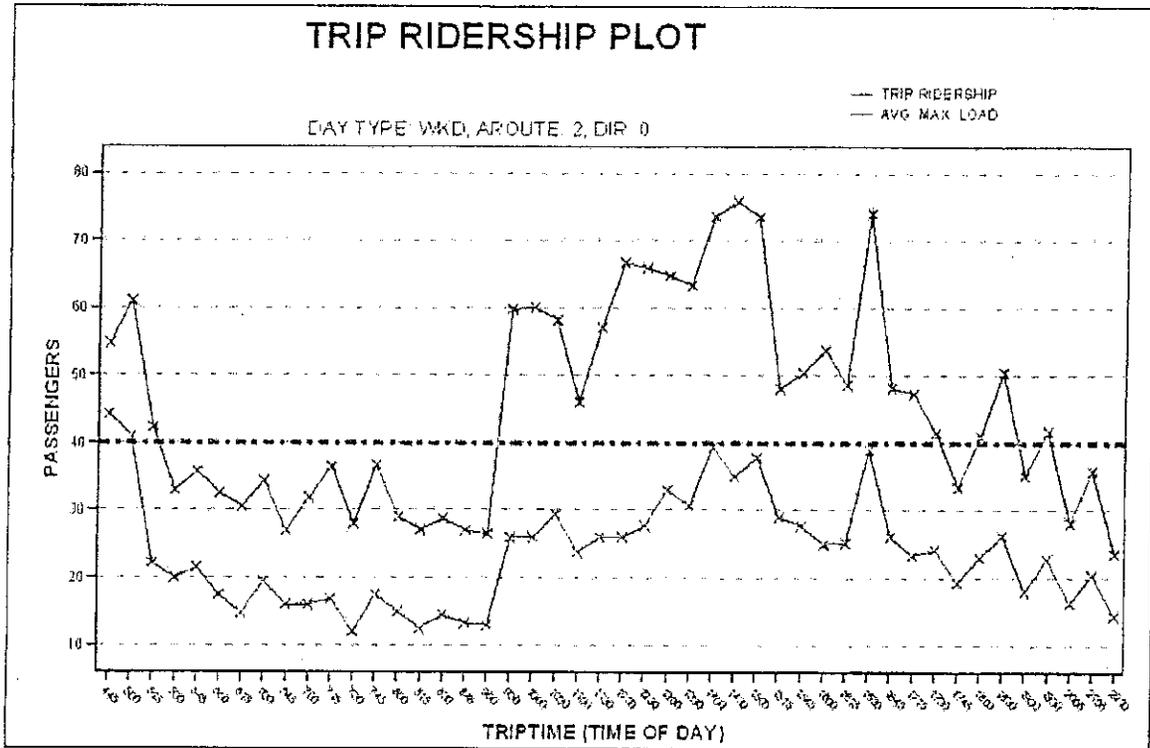
The trip summary report essentially reports the averages generated in the trip report along with the number of samples, however the individual observations are not listed. The report variables are then averaged over all trip times.

SAN FRANCISCO - MUNI													
ROUTE 13													
Weekday - OUTBOUND													
TRIP SUMMARY REPORT													
AUGUST 2008													
TRIP DEPART TIME	BLOCK	PATTERN	RIDERS	TRIP TIME	VEL (MPH)	LOAD FACTOR	120% LOAD DURN	DOOR CYCLES DURING TRIP	PASS PER HOUR	PASS MILES	MAX LOAD	NUMBER OF SAMPLES	
05:34	1801	180B1	9	32.3	16.9	.045	.0	14	16.6	29.3	8	8	
06:04	1801	180B1	13	39.0	15.2	.076	.0	12	19.9	50.1	9	5	
06:29	1803	180B1	16	35.1	15.7	.092	.0	16	28.5	61.1	11	7	
06:49	1801	180B1	34	40.0	14.2	.159	.0	27	61.1	101.4	21	6	
07:10	1804	180B1	22	41.6	13.9	.117	.0	21	34.1	82.8	16	6	
07:25	1802	180B1	44	41.1	14.2	.226	.0	27	63.8	145.5	27	8	
07:40	1805	180B1	28	40.8	13.4	.147	.0	23	41.5	93.7	16	10	
07:55	1803	180B1	27	39.8	14.8	.177	.0	25	45.3	116.1	17	7	

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*Trip Ridership Max Load Plot*

The graphical presentation of the average trip Ridership and average trip max load for all trips per route per direction.



**Segment Report/Summary**

Presentation of all APC variables for each Timepoint to Timepoint segment on a given route.

***Running Time Tolerance Limit Report***

This report presents the outlier limits for each Timepoint segment for each Time Period during the day.

***Segment Runtime Scatter Gram***

This chart displays segment runtimes as individual points for each trip number.

***Segment Report***

This displays individual segment observations organized by segment. For each segment, the following variables are reported: block, route, trip number, date, depart time, on, off, actual run time, scheduled run time, actual-scheduled runtime difference, timepoint schedule deviation and maximum passenger load.

*****													
RT #004													
WEEKDAY - DIRECTION=NB													
ROUTE SEGMENT REPORT													
*****													
SEGMENT	BLOCK	ROUTE	TRIP NO	DATE	DEPART TIME	ON	OFF	RUN TIME (MIN)	SCHED RUN TIME	DIFF	TIMEPOINT SCHEDULE DEVIATION	MAX PASSENGER LOAD	POSITION NO
-----													
LCS-ANEO													
	407	4	715	03/23/06	07:28:51	40	3	13.3	12.0	1.3	-1.28	37	102
	407	4	715	01/06/06	07:28:31	29	3	11.8	12.0	-0.2	.83	27	102
	407	4	715	03/17/06	07:28:16	27	2	12.7	12.0	.7	1.07	26	102
	407	4	715	03/03/06	07:32:13	36	4	14.6	12.0	2.6	5.00	31	102
	408	4	745	02/20/06	07:55:48	20	1	10.7	12.0	-1.3	-1.23	19	102
	408	4	745	02/03/06	07:56:59	18	2	10.4	12.0	-1.6	-1.35	17	102

***Segment Ridership Summary Report***

This table displays boardings and de-boardings for each segment on a given route by time period. A separate table is generated for each direction.

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\*\*\*\*\*  
**SEGMENT RIDERSHIP SUMMARY REPORT**  
**RT #045 DIRECTION 1**  
**Weekday - Inbound**  
 \*\*\*\*\*

TRIP NO.	0102:LYONG NWH- UNINSTEI		0203:UNINST EI-UNINVT		0304:UNINV. N- UNINCOLM		0405:UNINC OLM- STOKSUTT		0506:STOKS UTT- 4STMRKT		0607:4STMR KT- TOWN,4ST		TOTAL	
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
05:38	1	0	4	1	7	1	5	6	1	5	2	9	21	21
05:55	4	0	3	2	7	2	21	6	2	18	7	16	44	44
06:03	1	0	4	0	5	1	4	4	1	5	2	8	16	17
06:12	3	0	6	0	7	3	21	5	2	22	12	19	51	50
06:22	2	0	6	0	5	1	22	5	3	20	15	26	53	53
06:31	3	0	10	2	9	3	30	6	3	20	12	31	68	62
06:40	1	0	5	0	7	1	12	4	2	15	5	11	31	31
06:48	2	0	4	1	6	2	19	5	1	19	4	10	37	37
06:57	5	0	6	1	8	4	21	8	1	23	9	14	50	50
07:06	3	0	8	1	7	2	13	8	3	15	7	15	41	41
07:14	4	0	8	1	13	2	24	11	3	23	11	26	62	62

**Segment Run Time Summary Report**

This table displays scheduled runtime and actual runtime for each segment on a given route by time period. A separate table is generated for each direction.

\*\*\*\*\*  
**SEGMENT RUN TIME SUMMARY REPORT**  
**RT #045 DIRECTION 1**  
**Weekday - Inbound**  
 \*\*\*\*\*

TRIP NO.	0102:LYONG NWH- UNINSTEI		0203:UNINST EI-UNINVT		0304:UNINV. N- UNINCOLM		0405:UNINC OLM- STOKSUTT		0506:STOKS UTT- 4STMRKT		0607:4STMR KT- TOWN,4ST		TOTAL	
	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM	ACT RNTM	SCHED RNTM
05:38	2.3	2.0	4.1	5.0	4.4	4.0	4.8	0.0	2.1	4.0	0.7	6.0	24.6	27.0
05:55	4.1	3.0	4.5	5.0	5.2	6.0	6.1	7.0	3.2	4.0	5.4	7.0	28.4	32.0
06:03	4.8	3.0	4.3	5.0	5.4	6.0	6.5	8.0	3.0	4.0	7.3	8.0	31.8	34.0
06:12	3.5	3.0	4.1	5.0	5.1	6.0	7.2	8.0	2.8	4.0	6.4	8.0	29.2	34.0
06:22	5.4	3.0	4.7	6.0	5.0	6.0	7.2	8.0	3.0	4.0	8.2	8.0	33.4	34.0
06:31	3.6	3.0	5.2	5.0	4.8	6.0	7.1	8.0	2.8	4.0	6.4	8.0	29.7	34.0
06:40	3.3	3.0	4.5	5.0	5.1	6.0	6.4	8.0	3.2	4.0	7.4	8.0	32.0	34.0
06:48	4.3	3.0	4.5	6.0	4.8	6.0	6.9	8.0	2.8	4.0	8.1	8.0	31.3	35.0
06:57	3.4	3.0	4.8	6.0	5.1	6.0	7.3	8.0	3.0	4.0	7.8	8.0	31.5	35.0
07:06	5.1	3.0	4.5	6.0	5.7	6.0	6.1	8.0	2.8	4.0	7.9	8.0	34.1	35.0
07:14	6.5	3.0	4.9	6.0	5.8	7.0	7.4	8.0	3.3	4.0	7.7	8.0	35.6	36.0
07:28	5.4	3.0	5.7	6.0	5.9	7.0	7.2	8.0	2.9	4.0	7.2	8.0	34.3	36.0
07:38	4.4	3.0	5.9	6.0	6.1	7.0	6.4	8.0	3.0	4.0	8.1	8.0	35.2	36.0
07:43	4.2	3.0	5.7	6.0	6.3	7.0	6.2	8.0	2.7	4.0	7.8	8.0	34.8	37.0
07:52	4.1	3.0	4.8	6.0	6.0	7.0	7.0	8.0	3.1	4.0	7.9	8.0	32.8	37.0
08:01	3.9	3.0	5.8	6.0	6.0	7.0	7.9	8.0	3.7	4.0	8.5	8.0	36.4	37.0
08:11	3.7	3.0	5.1	6.0	5.9	6.0	6.0	8.0	3.2	4.0	8.1	8.0	33.9	36.0
08:20	4.2	3.0	6.2	6.0	6.5	6.0	3.4	9.0	2.9	4.0	7.8	8.0	35.9	36.0
08:29	4.4	3.0	4.9	6.0	6.4	6.0	9.0	9.0	2.9	4.0	7.8	8.0	35.3	36.0
08:38	4.5	3.0	5.0	6.0	6.1	6.0	7.6	9.0	3.0	4.0	7.7	8.0	34.5	36.0
08:47	4.3	3.0	5.3	6.0	6.3	6.0	8.0	9.0	2.8	4.0	7.4	8.0	34.7	36.0
08:56	5.7	3.0	5.5	6.0	6.3	6.0	9.5	9.0	2.6	4.0	7.9	8.0	37.5	36.0
09:05	5.5	3.0	5.3	6.0	6.2	6.0	9.5	9.0	2.8	4.0	7.9	8.0	38.0	36.0

**Segment Maxload Summary Report**

This table displays the maximum passenger load for each segment on a given route by time period. A separate table is generated for each direction.

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*Segment Velocity Summary Report*

This table displays the scheduled and actual velocity for each segment on a given route by time period. A separate table is generated for each direction.

*Segment Running Time Plot*

This plot displays actual and scheduled running time for every trip. A different plot is produced for each unique segment-direction combination.

**Bi-Directional Segment Report/Summary**

Presentation of all APC variables for each timepoint to timepoint segment on a given route. Particularly applicable for scheduling purposes.

**Schedule Adherence Report**

The presentation of a number of summaries displaying the frequency of early/on-time/late observations for a given route(s) and/or location(s).

*Schedule Adherence Summary Table*

Two tables are generated. One table gives system wide on time counts and percentages for SOL, EOL, and mid route time points. The other table generates on time counts and percentages by route.

***** ALL TIME POINTS OLAX (501) SCHEDULE ADHERENCE REPORT Weekday - Inbound ON-TIME: Between -1.0 Min Early and 1.0 Min Late *****									
TIME POINT	TIME OF DAY	BLOCK	DATE	ARRIVAL TIME	DOOR CLOSE TIME	DEPART TIME	SCHDL TIME	SCHEDULE DEVIATION	STATUS
GEAR33AV	6:00-7:00 AM								
		1102	11/09/06	06:38:12	06:45:09	06:45:09	06:45	.13	ON TIME
		1102	11/10/06	06:40:13	06:44:52	06:45:11	06:45	.19	ON TIME
		1102	11/14/06	06:46:51	06:47:04	06:47:04	06:45	1.97	ON TIME
		1102	11/15/06	06:44:32	06:45:05	06:45:05	06:45	.10	ON TIME
HR AVG							.62		
	7:00-8:00 AM								
		1113	10/26/06	07:04:47	07:04:59	07:04:59	07:05	-.02	ON TIME

*Schedule Adherence Crosstabulation - Status, Time Period, Route, Day of Week*

This table reports the on time counts and percentages by route and day of week for each time period.

*Schedule Adherence Route Summary Table*

This table displays on time counts and percentages by day of week, for a given route.

*Schedule Adherence Crosstabulation - Time Point, Status, Day of Week*

This table reports the on time status of a given route at each time point. A different table is generated for each day of week (weekday, Sat, Sun).

*Schedule Adherence Individual Observations Report*

This report displays individual schedule adherence observations, which are organized by time point and time of day. Variables which are reported include arrival time, departure time, door close time, scheduled time, schedule deviation, time point location (SOL, EOL, mid route), and status (on time, late, early).

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**Bus Stop Listing/Summary**

The presentation of each observation of boardings/alightings at each stop along a trip. Summarization of Bus Stop data can take any relevant spatial or temporal dimension (by trip, route section, over numerous days, etc)

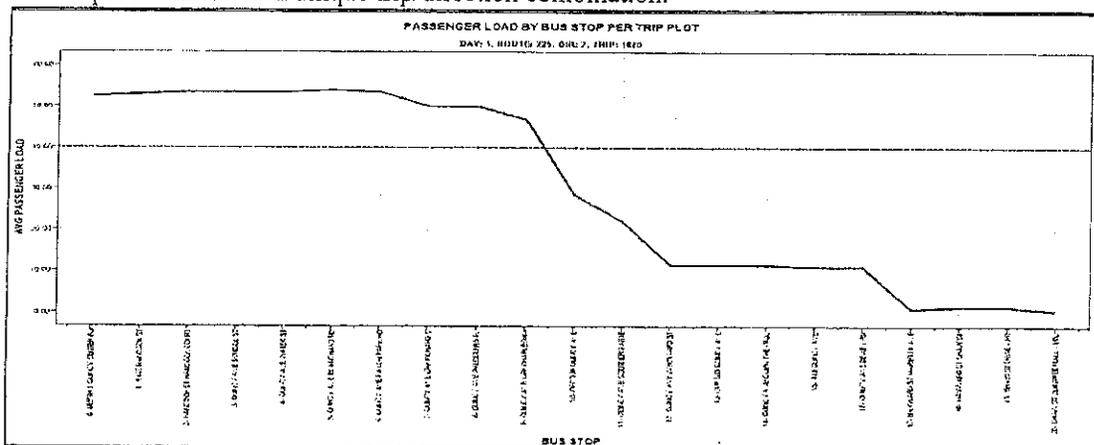
APC STOP LISTING BY TRIP-RIDECHECK												
RT #002												
ROUTE DIR	TRIP	DATE	STOP	LOCATION	TIME	ON	OFF	LOAD	MILES	ESGMR	SCHED TIME	ACTUAL TIME
2 E	659	01/25/2006										
			3	NORFOLK & POPEYTHIA	06:52:39	0	0	0	0.000	659	-	3.7
			5	NORFOLK & BLUE SPRUCE	06:53:47	1	0	1	0.000			
			6	OLD SCOTTSVILLE CHILLI & OH	07:01:31	0	0	1	0.198			
			13	CHILLI & 3235 CHILLI	07:02:00	0	0	3	0.198			
			14	CHILLI & PAUL	07:03:22	0	0	3	0.212	701	1.17	4.00
			15	CHILLI & PIKNET	07:03:51	0	0	3	0.238			4.71
			16	CHILLI & GREENELL	07:04:06	0	0	3	0.234			
			17	CHILLI & RUTH	07:04:33	0	0	3	0.242			
			18	CHILLI & WESTWAY	07:04:48	0	0	3	0.221			
			19	CHILLI & ARCHER	07:05:22	0	0	3	0.246			
			20	CHILLI & MAUPEN	07:06:37	0	0	3	0.205	708	1.02	2.00

**Stop Summary - Individual Observations**

This report presents a listing of boardings, deboardings, load, latitude, longitude, date, and time, for each unique day of week/route/direction/stop combination. Totals, averages, and standard deviations summaries are also presented for all applicable variables.

**Passenger Load by Stop by Trip Plot**

This line chart indicates the (average) load at each bus stop. The name of the stop is displayed on the x-axis and the load is displayed on the y axis. A different chart is produced for each unique trip/direction combination.



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**Stop Summary - Daily Totals**

This is a summary report that takes the mean value of boarding and de-boardings for all samples observed for each unique day of week/route/direction/stop combination and sums these values to provide a total mean ridership estimate for a route.

DRAFT									
APC STOP SUMMARY - DAILY TOTALS									
ROUTE 1									
Weekday									
ROUTE	SEQUENTIAL STOP NO	UNIQUE STOP NO	LOCATION	DIR	LATITUDE	LONGITUDE	ON	OFF	TOTAL
1	1	17103	BRISTOL SAVER - S - NS B	S	32.711405	-96.831513	5	1	6
	2	17108	LLEWELLYN RYAN - S - NS	S	32.711405	-96.831513	0	0	0
	3	17106	LLEWELLYN WILCOX - S - NS	S	32.709591	-96.831333	0	2	2
	4	17107	LLEWELLYN LACEWOOD - S - NS	S	32.708593	-96.831856	0	2	2
	5	15815	LACEWOOD GARAPAN - N - M	N	32.707731	-96.833512	1	2	3
	6	17079	GARAPAN WILCOX - N - M	N	32.707526	-96.835141	6	12	18
	7	17074	GARAPAN RYAN - N - NS	N	32.708593	-96.835517	0	1	1
	8	17075	GARAPAN HOME SMITH - N - NS	N	32.709343	-96.835750	1	1	2
	9	17076	GARAPAN BRANNON - N - NS	N	32.710347	-96.836135	0	2	2
	10	17077	GARAPAN GRAYSON - N - NS	N	32.711745	-96.836496	7	3	10
	11	23112	GRAYSON SAVER - E - NS	E	32.711071	-96.836234	1	0	1
	12	23113	GRAYSON BRISTOL - E - NS	E	32.711426	-96.833361	1	0	1
	13	24023	BRISTOL CAMBERA - N - N	N	32.715475	-96.833759	3	1	4
	14	23121	BRISTOL GARAPAN - N - NS	N	32.716991	-96.834756	5	1	6
	15	15697	GARAPAN ILLINOIS - N - M	N	32.717580	-96.834071	0	0	0
	16	17079	GARAPAN ILLINOIS - N - M	N	32.722088	-96.831641	30	4	34
	17	17081	DANG ILLINOIS - N - NS	N	32.722088	-96.831641	18	13	31
	18	23217	DANG WYNNENCOE ST - N - NS	N	32.722143	-96.831641	1	5	6

**Stop Ridership Ranking Report**

This report ranks individual bus stops based on ridership (on+off). To compute the ridership, the mean value of on's and off's are computed for each rout/direction/stop combination. The mean values are then totaled for each individual bus stop to compute the values by which the bus stops are ranked. The longitude, latitude, and unique stop number are also reported.

*****							
APC STOP SUMMARY - DAILY TOTALS							
STOP RIDERSHIP RANKING REPORT							
ALL ROUTES							
*****							
UNIQUE STOP NO	LOCATION	LATITUDE	LONGITUDE	ON	OFF	TOTAL	RANK
1	VAIL TRANSPORTATION CENTE	39.642535	-106.374033	248	316	564	1
214	AVON STATION	39.634354	-106.524380	257	250	507	2
224	HIGHWAY 6 & DOWD TRAIL	39.618463	-106.463661	196	186	383	3
213	BEAVER CREEK BLK LOT	39.630839	-106.524707	140	186	326	4
28	EAGLE RIVER VILLAGE	39.651189	-106.620906	147	128	275	5
219	FANCETT RD & YODER AVE	39.627184	-106.502022	130	133	263	6
211	BEAVER CREEK BEAR LOT	39.635238	-106.538157	123	116	239	7
52	SOUTH FRONTAGE RD & LIONS	39.645158	-106.386159	39	166	205	8
201	LAKE CREEK VILLAGE - EDL	39.652989	-106.622939	108	72	180	9
212	HIGHWAY 6 & RIVERS EDGE	39.633891	-106.529689	83	74	157	10
.....							
90	HIGHWAY 24 & MEADOW MOUNT	39.595050	-106.434070	0	0	0	86
502	HIGHWAY 24 & SOUTH MAIN S	39.574760	-106.408300	0	0	0	86
506	HIGHWAY 24 & MEADOW MOUNT	39.594838	-106.434219	0	0	0	86
551	HIGHWAY 24 & MEADOW MOUNT	39.595114	-106.433709	0	0	0	86
TOTAL				2340	2521		
URBAN TRANSPORTATION ASSOCIATES							

Proprietary - UTA APC Proposal

Route Productivity Ranking

The overall ranking of route performance by Weekday/Saturday/Sunday.

***** OVERALL ROUTE RIDERSHIP/PRODUCTIVITY RANKING Weekday FALL 2011 SIGNUP (AUG THROUGH OCT) *****									
OVERALL PRODUCTIVITY RANKING	ROUTE	TOTAL DAILY RIDERS	RIDERSHIP RANKING	PASS PER HOUR	RANK PASS PER HOUR	ROUTE LOAD FACTOR	LOAD FACTOR RANKING	PASS PER MILE	RANK PASS PER MILE
1	38	2889	6	98.3	3	.588	1	9.36	3
2	20	6295	1	73.5	7	.395	3	5.74	7
3	119	1171	17	119.1	1	.485	2	11.2	2
4	21	2918	5	68.8	8	.341	6	5.53	10
5	9	4759	2	68.0	9	.305	11	5.69	9
6	1	2645	8	63.6	11	.348	5	5.47	11
8	12	3937	4	58.9	13	.316	8	4.81	15
8	35	4321	3	65.2	10	.282	13	5.08	14
8	120	2160	11	106.6	2	.205	26	12.2	1
10	34	2287	9	58.2	14	.373	4	4.45	17

Ridership Report

APC Generated Ridership Analysis - Route Detail

This report compares sampled trip to scheduled trips in order to extrapolate and apply sample data to the entire transit system. For each route the following variables are reported: sample riders, sample passenger miles, sample trip length, trips sampled, trips operated, expansion factor, expanded riders, and expanded passenger miles.

***** APC-GENERATED RIDERSHIP ANALYSIS - RT DETAIL WEEKDAY JAN. 2011 - JULY 2011 *****									
SERVICE TYPE	ROUTE	SAMPLE RIDERS	SAMPLE PASSENGER MILES	SAMPLE TRIP LENGTH	TRIPS SMPLD	TRIPS OPRTD	EXPNSN FACTOR	EXPANDED RIDERS	EXPANDED PASSENGER MILES
MOTOR COACH									
	2	5,658	9,349	1.65	118	118	1.0000	5,658	9,349
	9CX	11,864	26,472	2.23	178	178	1.0000	11,864	26,472
	10	5,371	8,528	1.59	91	91	1.0000	5,371	8,528
...									
	14X (914)	2,761	10,539	3.82	33	33	1.0000	2,761	10,539
	31AX (931)	953	3,556	3.73	21	21	1.0000	953	3,556
	38AX (938)	918	3,527	3.84	24	24	1.0000	918	3,527
TOTAL								286,026	668,933
TROLLEY COACH									
	1	24,393	42,322	1.73	429	429	1.0000	24,393	42,322
	3	4,087	5,216	1.28	128	128	1.0000	4,087	5,216
	5	17,500	36,890	2.11	357	357	1.0000	17,500	36,890
...									
	41	3,181	4,811	1.51	96	96	1.0000	3,181	4,811
	45	11,728	13,784	1.18	201	201	1.0000	11,728	13,784
	49	24,434	36,805	1.51	296	296	1.0000	24,434	36,805
TOTAL								198,855	310,077
URBAN TRANSPORTATION ASSOCIATES									

**APC/Farebox Report**

The presentation of APC Ridership statistics along with Farebox revenue and Ridership counts.

**Manual Data Reporting**

UTA's APC Software package has processed manually collected data from numerous transit agencies, most recently from SF MUNI's Cable Car service. All APC reports can be generated from manually collected data, subject to the limitations of the manually collected data

**Wheelchair Lift Report (If Available)**

The presentation of the time and location of all wheelchair lift activity.

**Bicycle Rack Usage Report (If Available)**

The presentation of the time and location of all bicycle rack activity.

**Garage Schedule Adherence Report**

Presents the difference between scheduled garage departure/arrival for each block annualized the cost impact of late departures and early arrivals.

**APC Bus Deployment Plan**

Displays a current APC Sampling Status by route, and then provides a one-week deployment plan. This plan incorporates random NTD sampling into an overall plan that maximizes APC bus coverage for all service.

**Route Maps with Ridership**

For each route sampled, as part of the standard package of reports/plots, UTA will provide a detailed/colored route map with the total daily Ridership observed at each bus stop in each direction for Weekday service. If required, UTA will produce Saturday and Sunday plots.

Appendix A (APC/GIS) presents examples of the spatial analyses available with UTA APC Analytic Software package.

**Political Jurisdiction Report**

A summary of the Ridership, Miles, Hours for each Political Jurisdiction.

**Actual vs Scheduled EOL Dwell Times**

This report presents the Actual Dwell Time at each End Of Line (EOL) location and compares the Actual Dwell Time with the Scheduled Dwell Time in the Trapeze schedule export.

**Calculated vs Scheduled Headways**

For each DTC Route, by Direction and Time of Day, a comparison of the Scheduled Headways with a Calculated Headway based on DTC's Service Design Standards (for example, 100% Seated Load-Base, 120% Seated Load-Peak). This report and accompanying plots will allow DTC staff to identify potential routes, directions, and times of day when increases or decreases in Headways might be appropriate.

**NTD Reporting**

For more than two (2) decades, UTA APC users have been meeting NTD (previously Section 15) reporting requirements using UTA APC data. FTA NTD staff has invited UTA to provide briefings on UTA's approach toward NTD Reporting that results in such a high level of success relative to the low level of NTD Reporting success from transit agencies using non-UTA APC systems. Critical to UTA's NTD Reporting success is the highly developed APC Administrative Control software modules that assure high quality APC data being available for NTD Reporting. UTA's APC Diagnostics, Data Quality Codes, Filter/Edit Algorithms, Sampling Status, Deployment Plans, Reference File Quality Control are but a few of UTA APC Administrative Control elements that result in high quality APC data for both NTD and non-NTD reporting. As a result of successful application of APC technology to NTD Reporting, FTA is in the process of modifying guidelines relative to the use of APC technology for NTD Reporting. The random selection of trips/blocks will not necessary given comprehensive sampling of all service each scheduling period. The annual verification of APC accuracy may be waived given the presence of a reliable APC Data Quality Control system. By monitoring Passenger Trip Length (PTL) on a continual basis and demonstrating consistent PTL values, FTA has been, and is currently, approving UTA APC users to utilize the full annual set of APC data for NTD Reporting.

MUNI			
APC-GENERATED RIDERSHIP ANALYSIS - SYSTEM SUMMARY			
WEEKDAY			
JAN. 2011 - JULY 2011			
*****			
AGENCY	SYSTEM EXPANDED RIDERS	SYSTEM EXPANDED PASSENGER MILES	SYSTEM TRIP LENGTH
MUNI	484881	979070	2.02
TOTAL	484881	979070	2.019

Critical to successful NTD Reporting is the calculation of Passenger Miles. UTA's APC Software automatically calculates Passenger Miles for each bus stop by multiplying the Passenger Load by the interstop distance. With highly refined EOL Load Balancing algorithms assuring an accurate Passenger Load at each bus stop and algorithms that convert Lat/Long change into interstop distance, UTA's APC Passenger Mile variable is highly accurate and auditable down to the bus stop level. Along with an accurate UTA APC Ridership variable, the Passenger Trip Length (PTL) is a standard output of UTA's Route Ridership Report.

UTA has been supporting, including local audits, the application of UTA's APC System at dozens of transit agencies for many years. Typically, NTD Reporting is a routine by-product of UTA's APC Reporting package that is easily prepared by local transit staff.

### **Trip Max Load- Headway Maintenance**

A common debate within transit agencies is the relationship of actual on-street operation versus the scheduled design of the on-street service. Often, Route Headways are established with the assumption that on-street service will operate as scheduled. When feedback is received that there may be overcrowding and/or underutilization, an appropriate analysis is to determine if the Route Headways are being maintained. The Trip Max Load-Headway Maintenance Report/Plot presents the relationship between Trip Maximum Loads and the Schedule Adherence of successive trips in the schedule. This analysis will identify specific Trips that must be operated on schedule in order allocate ridership/loads as designed.

### **Schedule Adherence Consistency**

Typically, transit agencies report overall On-Time Performance with minimal, if any recognition to the variability of schedule adherence. This report presents the Times/Locations where DTC service operates consistently. Separate reports are prepared for Consistently Early, Consistently Late, and Consistently On-Time service. Reports are also prepared for Times/Locations where DTC service is inconsistent that can serve as a focus for local traffic engineering and/or DTC remedy.

### **Multiple Markup Trend Analysis**

This set of reports and plots present the changes in Route performance (ridership, passengers/hour) for each Route over multiple schedule periods. This analysis will identify Routes where service is changing (increase or decrease) that may require Planning & Scheduling action.

### **15-30 Minute Schedule Adherence Status Maps**

This analysis generates APC data exports that can be mapped for each Peak 15 Minute and Off-Peak 30 Minute period which provide a spatial illustration of Early, On-Time, and Late conditions. This analysis is often utilized to allocate on-street supervisors to locations when schedule adherence requires improvement.

### **Ridership Impact Analysis**

Often, there are external conditions (special promotions, weather, work stoppages, etc) which may impact local transit ridership. The Ridership Impact Analysis allows the user to produce a specific magnitude of ridership impact in a next-day analysis. For example, in the Bay Area, days of elevated ozone levels (Spare the Air Days) allow Bay Area residents to ride SF MUNI and AC Transit service free of charge. The Ridership Impact Analysis provides a next-day analysis of the impact of the free-fare on ridership levels.

Proprietary - UTA APC Proposal

In summary, UTA APC system has the capability of routinely generating both the standard reports defined above and/or the non-routine ad-hoc reports that are often required by transit staff. The philosophy of creating aggregated data bases containing all possible APC-generated transit variables will support the production of the aforementioned reports. Given the format of these aggregated APC data files in flat ASCII format, these files are also easily routed to other DTC analytic platforms and packages (Access, Excel, Crystal, ArcView, etc.)

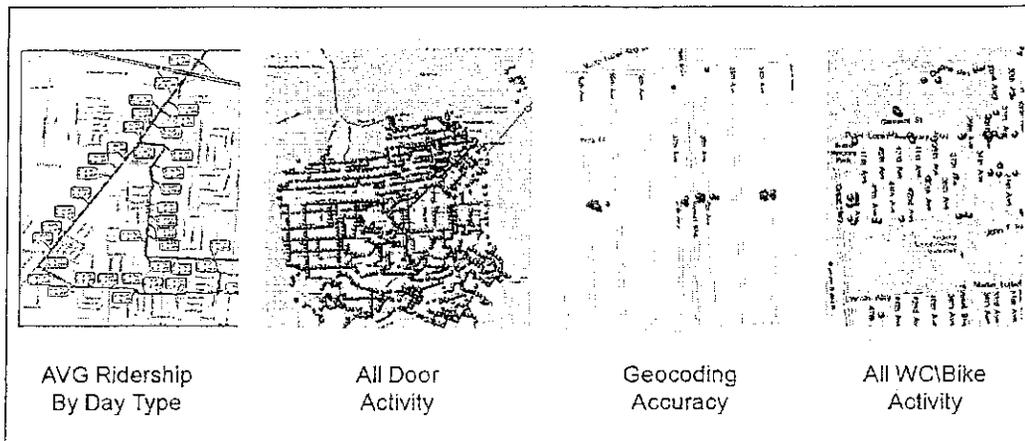
In the more than two (2) decades UTA has been providing APC capability to the transit industry, UTA has not encountered a user request for APC-generated reports/data that could not be met with the APC data processing capabilities described in this section. UTA proposed APC system will have the capability of meeting all APC-related data requests. During the initial APC installation and training, DTC staff is encouraged to bring forth all analytic requirements that might be addressed by the APC system.

Proprietary - UTA APC Proposal

**APC Exports to GIS Applications**

A common application of UTA's APC system is to export processed APC data into a format that can be easily imported into GIS applications. UTA's APC Software routinely exports APC data into the appropriate formats for GIS applications. Typically, in public transit agencies, ESRI ArcView GIS systems are present and UTA's APC Software exports APC data in .CSV format that can be executed by ArcView. UTA also exports APC data in a .KML format for representation in Google Earth applications. A GIS export module within UTA's APC Software creates a .CSV file for each bus data-day that can easily be imported into standard GIS products.

UTA's APC GIS export capability is contained in the APC Software upgrade proposed for DTC. Presented below are examples of UTA APC data exports applied to various GIS applications:



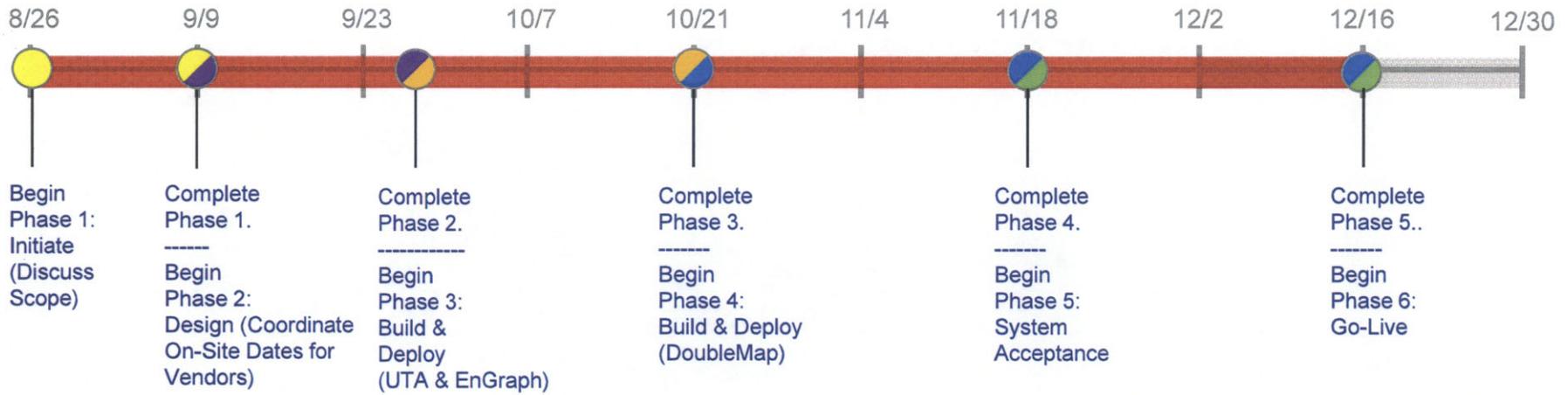
**GIS Exports viewed in Google Earth Format**



**GIS Exports viewed in Google Earth Format**



# Implementation Timeline



## Key Deadlines

Phase 1: Monday 8/26 – Sunday 9/8  
 Phase 2: Monday 9/9 – Thursday 9/26  
 Phase 3: Friday 9/27 – Sunday 10/20  
 Phase 4: Monday 10/21 – Sunday 11/17  
 Phase 5: Monday 11/18 – Sunday 12/15  
 Go-Live: Monday 12/16

- = Phase 1: Initiative
- = Phase 2: Design
- = Phase 3: Build and Deploy Part I
- = Phase 4: Build and Deploy Part II
- = Phase 5: System Acceptance



Item	Unit Price	Units	One Time Price	Annual Price	5 Years	Amount with Discount for Initial Payment	Discount Percentage
AVA-Specific Features	\$650	33	\$21,450				
Indoor LCD Display	\$3,124	3	\$9,372				
In-Vehicle LED Display	\$3,116	33	\$102,828				
Configuration w/ Fare Box		1	\$12,500				
Automatic Passenger Counting (Entire System)		33	\$173,175				
Requested Mobile Terminal Additions		1	\$16,650				
Mobile App Solution		1	\$35,300				
LCD Ongoing Subscription		36		\$8,250	\$41,250	\$35,063	15.00%
DoubleMap Ongoing Subscription		36		\$14,903	\$74,515	\$59,612	20.00%
Requested Warranty Addition		1		\$7,249	\$36,245	\$30,808	15.00%
EnGraph ParaPlan Software		1	\$43,125				
EnGraph ParaPlan Hardware		14	\$13,920				
EnGraph Training		1	\$16,100				
Requested Automatic Billing Software		1	\$4,000				
Annual Maintenance		1		\$6,450	\$32,250	\$28,219	12.50%
Cloud Hosting		1		\$2,875	\$14,375	\$12,578	12.50%
<b>Grand Total for AVL, AVA, APC, Screens &amp; ParaTransit</b>			<b>\$448,420</b>	<b>\$39,727</b>	<b>\$198,635</b>	<b>\$166,280</b>	
<b><u>EVIR-Pre Trip/Post Trip Inspections</u></b>							
Zonar EVIR Hardware	\$529	47	\$24,863				
Zonar EVIR Subscription (3 Yr. Contract)	\$144	47	\$6,762	\$6,762	\$33,812	\$33,812	0.00%
Freight	\$6	47	\$282				
GSM Activation (Per Asset)	\$25	1	\$25				
Training	\$800	1	\$800				
Travel	\$1,000	1	\$1,000				
Custom Configuration	\$1,000	1	\$1,000				
<b>Grand Total for EVIR Solution</b>			<b>\$33,732</b>	<b>\$6,762</b>	<b>\$33,812</b>	<b>\$33,812</b>	
<b>Grand Total for all items including maintenance costs</b>			<b>\$682,244</b>				

## **DoubleMap Contract Scope**

1. AVA (33 Units)
  - a. Ground Loop Isolator
  - b. Interior Signage
  - c. Voice Synthesizer
  - d. Noise Cancellation Technology
  - e. Voice Announcement Module
  - f. Speaker Isolation Configuration
  - g. Proprietary Boom Microphone Cabling
  - h. Professional Installation
  - i. Warranty 1 Year
  
2. Indoor LCD Display (3 Units)
  - a. 46" Commercial Grade LCD
  - b. Tilting Wall Mount
  - c. On-Board Win7 Controller
  - d. On-Site Installation
  
3. In-Vehicle LED Display (33 Units)
  - a. 16 Character Amber LED
  - b. 2" Height
  - c. Fabricated Aluminum Casing
  - d. Mounting Collar
  - e. DoubleMap Integration Cabling
  - f. On-Site Installation
  
4. Configuration with Fare Box
  
5. Automatic Passenger Counting
  - a. Complete payment of UTA License, associated hardware, installation, and related services
  
6. Requested Mobile Data Terminal Additions
  - a. Customized Tablet Interface, Two-Way Text Messaging through MDT, Schedule Adherence Feedback through MDT, DoubleMap UTA Integration

7. Mobile App Solutions
  - a. iOS app
  - b. Android app
  
8. Annual LCD Ongoing Subscription (5 Years)
  - a. Firmware Maintenance
  - b. Communication Protocol
  
9. Annual DoubleMap Ongoing Subscription (5 years)
  - a. Monthly Cellular Connection
  - b. Software Subscription
  - c. Customer Support
  
10. Requested Warranty Addition (5 Years)
  - a. AVL Warranty for MDT, GPS, and Cellular
  - b. AVA Warranty for Amplifier and Cabling
  
11. EnGraph ParaPlan Software HOSTED 5 Years
  - a. Mobile Live (Unlimited iOS devices)
  - b. DoubleMap Integration
  
12. EnGraph ParaPlan Hardware (14 units)
  - a. iPad 2 or equivalent
  - b. Vehicle RAM Mount
  - c. Charging Harness
  
13. EnGraph Training
  - a. 10 Day On-Site Training
  
14. Requested Automatic Billing Software
  - a. Generate Invoices & Payments for any client or program
  - b. Generate Invoices & Payments for any custom date range
  - c. Generate Invoices & Payments for certain types of trip
  - d. Bill funding sources, contracts, providers and individual clients
  - e. Track accounts payable and receivable
  - f. Assign specific rides and other line item to any invoice or payment
  - g. Print custom invoices with your company letterhead
  - h. Create both summary and detail invoices

## Attachment D

- i. Track a rider's individual solvency
  - j. Designate ParaPlan to generate invoices automatically
  - k. Print billing history reports
  - l. Print billing balances
  - m. Print transaction details and summaries for both invoices and payments
15. Annual Maintenance
- a. ParaPlan (Desktop & Mobile) Annual Maintenance billed according to the existing maintenance cycle. This amount is subject to change after three (3) years or if product lines are modified.
16. Zonar EVIR Hardware (47 units)
- a. Zonar Inspection Tool
  - b. RFID Asset, Zone, and Driver Tags
  - c. Vehicle Mount
17. Zonar EVIR Subscription (47 units)

**2010  
Red Flag Rule**

**City of Columbia Identity Theft Prevention  
Program**

**Effective December, 2010**

City Council Adopted and Effective Date: \_\_\_\_\_

This document is intended to give guidance to the City in their understanding of the FTC Red Flag Rule. It is not intended to be used in place of compliance, in whole or any part, of the FTC Rule.  
08/02/10 Final  
11/10/10 Reviewed/Updated

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## INTRODUCTION

The City of Columbia (the "City") has developed this Identity Theft Prevention Program ("Program") pursuant to the Federal Trade Commission's ("FTC") Red Flag Rule, which implements Section 114 of the Fair and Accurate Credit Transaction Act of 2003, pursuant to 16 C.F.R. §681.2. This Program is designed to detect, prevent and mitigate identity theft not only in connection with the opening and maintenance of City utility accounts but other city accounts, applications, registrations or other transactions, referred to as "Record" or "Records" throughout this Program, where identity theft might occur.

### **Why did FTC make this rule?**

The intent is to protect consumers from identity theft. It is targeted at entities that **obtain** and **hold** consumer identification such as billing addresses, Social Security Numbers, dates of birth, passports or immigration documents, or other information.

### **Who must comply?**

Entities such as Columbia that obtain and hold identification often targeted by identity thieves must comply.

### **What is a "Red Flag?"**

A "Red Flag" is a term the FTC has coined to identify possible identity theft. It is a pattern or particular specific activity that indicates the possible risk of identity theft. The FTC has identified thirty-one "Red Flags" that entities, especially utilities, should watch for. Such entities are required to have a written plan to help employees identify these "Red Flags" and how to respond when a possible identity theft has occurred.

### **How does Columbia have to comply with this rule?**

We have a duty to:

1. Identity Red Flags
2. Detect Red Flags; and
3. Respond to Red Flags

### **Who within City operations has to comply with the rule?**

**All City Departments** which obtain and hold any of the consumer identification mentioned above must comply with the rule.

For purposes of this Program, "Identity Theft" is considered to be "fraud committed using the identifying information of another person." The Program "Record" is defined as:

1. A continuing relationship the City has with an individual through a Record the City offers or maintains primarily for personal, family or household purposes, that involves multiple payments or transactions; and
2. Any other account, registration, application or record the City offers or maintains for which there is a reasonable foreseeable risk to customers or to the safety and soundness of the City from Identify Theft

This Program was developed with oversight and approval of the Columbia City Council. After consideration of the size and complexity of the City's operations and various systems, and the nature and scope of these activities, the Columbia City Council determined that this Program was appropriate for the City and therefore approved this Program on December 15, 2008.

***The Red Flag Rule-City of Columbia Identity Theft Prevention Program was reviewed and amended December, 2010.***

## IDENTIFICATION OF RED FLAGS

A "Red Flag" is a pattern, practice, or specific activity that indicates the possible existence of Identity Theft. In order to identify relevant Red Flags, the City of Columbia considered risk factors such as the types of Records it offers and maintains, the methods it provides to open or establish these Records, the methods it provides to access its Records, and its previous experiences with Identity Theft. The City identified the following Red Flags in each of the listed Categories:

### **1. Notifications and Warnings from Consumer Reporting Agencies**

- 1) A fraud or activity alert that is included with a consumer report;
- 2) Receiving a report or notice from a consumer reporting agency of a credit freeze;
- 3) Receiving a report of fraud with a consumer report; and
- 4) Receiving indication from a consumer report of activity that is inconsistent with a customer's usual pattern or activity.

### **2. Suspicious Documents (see below) used in such a way (items 1-13)**

- Lease
  - Death certificate
  - Driver's license
  - Immigration Papers or Work Card
  - Passport
  - Birth certificate
  - Student Identifications
  - Government Issued Identification
  - Military Identification
  - Non-Driver's License Identification
  - Credit and Debit Cards
- 1) Receiving documents that are provided for identification that appear to be forged or altered;
  - 2) Receiving documentation on which a person's photograph or physical description is not consistent with the person presenting the documentation;
  - 3) Receiving other information on the identification not consistent with information provided by the person opening a new Record or customer presenting the identification;

- 4) Receiving other documentation with information that is not consistent with existing customer information (such as if a person's signature on a check appears forged);
- 5) Receiving an application for service that appears to have been altered, forged or gives the appearance of having been destroyed and reassembled;
- 6) Personal identifying information provided is inconsistent when compared against external information sources used by the Department (such as the address does not match any address in the Consumer Report or the Social Security Number has not been issued, or is listed on the Social Security Death's Master File);
- 7) Personal identifying information provided is of a type commonly associated with fraudulent activity as indicated by internal knowledge and/or external third party sources (telephone number or address on an application is the same as the telephone number or address provided on a fraudulent application);
- 8) Receiving verbal, written, or internet based information where the same person with the same billing information requests utility service at more than one location;
- 9) The Social Security Number provided is the same as that submitted by other person(s) opening a Record;
- 10) The address or telephone number provided is the same as or similar to the account number or telephone number submitted by an unusually large number of other persons opening Records;
- 11) The person opening a Record fails to provide all required personal identifying information (incomplete application);
- 12) The person opening a Record cannot provide authenticating information if requested to do so;
- 13) The Department is notified by a customer (s) with information that another customer may have opened a fraudulent Record.

### **3. Suspicious Personal Identifying Information**

- 1) A person's identifying information is inconsistent with other sources of information (such as an address not matching an address on a Consumer Report or a Social Security Number that was never issued);
- 2) A person's identifying information is inconsistent with other information the customer provides (such as inconsistent Social Security Numbers, billing addresses or birth dates);

- 3) A person's identifying information is the same as shown on other applications found to be fraudulent;
- 4) A person's identifying information is consistent with fraudulent activity (such as an invalid phone number or a fictitious billing address);
- 5) A person's Social Security Number is the same as another customer's Social Security Number;
- 6) A person's address or phone number is the same as that of another person;
- 7) A person fails to provide complete personal identifying information on an application when reminded to do so; and
- 8) A person's identifying information is not consistent with the information that is on file for the customer.
- 9) The physical appearance of a customer does not match with other sources of information (such as driver's license, passport or immigration work card).
- 10) A person does not know the last 4 digits of his/her Social Security Number.
- 11) A new customer requests new service and a routine Social Security Number check locates an account with delinquent or a collection balance that is proved not to be the responsibility of the customer requesting new service.

#### **4. Unusual Use Of or Suspicious Activity Related to a Record**

- 1) A change of address for a Record followed by a request to change the Record holder's name or add other parties;
- 2) A new Record used in a manner consistent with fraud (such as the customer failing to make the first payment, or making the initial payment and no other payments);
- 3) A Record being used in a way that is not consistent with prior use (such as late or no payments when the Record has been timely in the past);
- 4) Mail sent to the Record holder is repeatedly returned as undeliverable;

- 5) The Department receives notice that a customer is not receiving his paper statements; and
- 6) The Department receives notice that a Record has unauthorized activity.
- 7) A Record is designated for shut-off due to non-payment and the customer at the location does not match the customer on file.
- 8) Unauthorized access to or use of customer records information such as log on or authentication failures.

#### **5. Notice Regarding Possible Identity Theft**

The City receives notice from a customer, an identity theft victim, law enforcement or any other person that it has opened or is maintaining a fraudulent Account for a person engaged in Identity Theft.

### DETECTION OF RED FLAGS.

**1. In order to detect any of the Red Flags identified above with the opening of a new Record, City personnel will take the following steps and verify the identity of the person opening the Record:**

- 1) Requiring certain identifying information such as name, date of birth, residential or business address, principal place of business for an entity, Social Security Number, driver's license or other identification;
- 2) Verifying the customer's identity in person, such as by copying and reviewing a driver's license or other identification card;
- 3) Reviewing documentation showing the existence of a business entity (in person process);
- 4) Independently contacting the customer; and
- 5) Requesting the customer to appear in person with appropriate information or documentation.

**2. In order to detect any of the Red Flags identified above for an existing Record, City personnel will take the following steps to monitor transactions with such information:**

- 1) Verifying the identification of customers if they request information (in person, via telephone, via facsimile, via email);
- 2) Verifying the validity of requests to change billing addresses;
- 3) Verifying changes in banking information given for billing and payment purposes; and
- 4) Verifying the last 4 digits of his/her Social Security Number.

## PREVENTING AND MITIGATING IDENTITY THEFT

1. In the event City personnel detect any identified Red Flags, such personnel shall take one or more of the following steps, depending on the degree of risk posed by the Red Flag:

- 1) Continuing to monitor a Record for evidence of Identity Theft;
- 2) Person who may be or is suspected to be the possible victim of identity theft;
- 3) Changing any passwords or other security devices that permit access to Records;
- 4) Reopening a Record with a new number;
- 5) Not opening a new Record;
- 6) Closing an existing Record;
- 7) Notifying law enforcement; See Appendix D.

**Example: If the City receives notice that its system has been compromised such that a customer's personal information has become accessible, at a minimum the City will notify the customer and change passwords.**

**Example: If the City receives notice that a person has provided inaccurate identification information, the Record will be closed immediately and notify Law Enforcement.**

- 8) Determining that no response is warranted under the particular circumstances; or

**Example: If the City notices late payments on a Record regularly paid and determines the resident has been incapacitated, no action may be necessary.**

- 9) Notifying the Program Administrator for determination of the appropriate step (s) to take.

2. In order to further prevent the likelihood of identity theft occurring with respect to Records the City will take the following steps with respect to its internal operating procedures:

- 1) Providing a secure website or clear notice that a website is not secure;

- 2) Ensuring complete and secure destruction of paper documents and computer files containing customer information. Paper documents and computer files containing customer information should be retained for the minimum retention required by law, unless there is a significant business purpose to retain the record for a longer period of time.
- 3) Requiring certain provisions included in city contracts with vendors. If the storage or destruction of paper documents and computer files are contracted to a private vendor, contracts must include a provision that requires the private vendor to store the documents and files in a secure manner so as to be accessible only by approved city personnel. Upon appropriate authorization by an approved city official, the vendor shall destroy the documents and computer files in a secure fashion. The storage and destruction of paper documents and computer files which contain sensitive information must be performed by either a city employee or a private vendor under contract.
- 4) Ensuring that office computers are password protected and that computer screens lock after a set period of time;
- 5) Requiring only the last 4 digits of Social Security Numbers on customer Records;
- 6) Requiring each Department review, no less than once a year, employee's access to Record information to determine if the employee's duties require such access and if the employee is complying with the provisions of the City Identity Theft Prevention Program. The Department shall restrict access as much as feasible and maintain an up to date list of those employees required to have access along with the date access was last reviewed. If the employee's access involves computer files, access shall be documented in the City Security Tracking System.
- 7) Prohibiting Record information to be written on sticky pads or note pads;
- 8) Ensuring that computer screens are only visible to the employee accessing the Record;
- 9) Requiring customers to authenticate addresses and personal information, rather than account representatives asking if the information is correct;
- 10) Maintaining secure office location;
- 11) Maintaining cameras in timely and good working order and providing for property destruction of tapes and other recording media;
- 12) Periodically (each Department) reviewing and maintaining a complete, accurate, and current internal list of authorized personnel and procedures with respect to the appropriate responses should a red flag occur or should the Department be aware of actual identity theft. Each Department with

access to such records shall provide periodic reports to the Red Flag Committee and Program Administrator. The report shall include red flags they have detected, their response, and any recommendations for changes in their Department internal policies and procedures and the City Identity Theft Prevention Program.

- 13) Should vendors have access to personal identifying information, Departments shall also include in contracts with vendors provisions for either the reporting of red flags to the Department or to require the vendor to prevent and mitigate the crime themselves. If the contract provides for the vendor to prevent and mitigate, the contract should also include a provision for periodic reports about the Red Flags the vendor detected and their response.
- 14) Each city department involved in the opening of new Records or maintenance of existing Records: Utility Customer Services, Parks and Recreation, and Information Systems shall maintain a complete, accurate, and current internal list of authorized personnel with respect to the appropriate responses in the event of a Red Flag occurring, having occurred or an actual Identity Theft; and
- 14) Because the City cannot predict all particular circumstances that may arise, City Personnel are requested to be diligent while not compromising customer service in the detection of other possible Red Flags.

### UPDATING THE PROGRAM AND THE RED FLAGS

- 1) This Program will be reviewed and updated annually, or as needed, to reflect changes in risks to customers and the soundness of City Records from Identity Theft. An Assistant City Manager will be designated the Program Administrator and work with the **Red Flag Committee**, an internal City working group to consider the City's experiences with Identity Theft, changes in Identity Theft methods, changes in Identity Theft detection and prevention methods, changes in types of Records, and changes in the City's business arrangements with other entities. To do so, the Red Flag Committee and Program Administrator shall evaluate the effectiveness of the City Identity Theft Prevention Program, effectiveness of the monitoring of the practices of service providers, and will analyze significant incidents of identity theft and city response.
- 2) After considering these factors and recommendations from the Committee, the Program Administrator will determine whether changes to the Program, including the listing of Red Flags, are warranted. If warranted, the Program Administrator will present the Program and recommended changes to the City Council who will make a determination of whether to accept, modify or reject those changes to the Program.
- 3) **Note: Each City Department included in the Program shall conduct an annual Needs Assessment to ensure that their operation is current in identifying Red Flags and response protocol. See Appendix F.**

## PROGRAM ADMINISTRATION AND TRAINING

### **1. Oversight.**

The City's Program will be overseen by an Assistant City Manager and the Red Flag Committee. Committee members shall consist of the representatives of the City Manager's Office, and all other city Departments that obtain and hold personal identifying information. The Program Administrator will be responsible for the Program's administration, for ensuring appropriate training of staff on the Program, for reviewing any staff reports regarding the detection of Red Flags and the steps for preventing and mitigating Identity Theft, determining which steps of prevention and mitigation should be taken in particular circumstances, reviewing and, if necessary, approving changes to the Program.

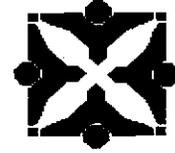
### **2. Staff Training and Reports.**

City staff responsible for implementing the Program shall be trained under the direction of the Program Administrator, the appropriate Department Head, the Police Department and/or a combination of the above in the detection of Red Flags, and the responsive steps to be taken when a Red Flag is detected. **See Appendix E.** Such training will be sufficient to effectively implement the Program. All training shall be conducted annually and documented. Vendors are required to either report any red flags to the Program Administrator or respond appropriately to prevent and mitigate the crime themselves.

### **3. Service Provider Arrangements.**

The City will take the following steps to ensure the service provider performs its activity in accordance with reasonable policies and procedures designed to detect, prevent, and mitigate the risk of Identity Theft.

- 1) Requiring, by contract, that service providers have such policies and procedures in place;
- 2) Requiring, by contract, that service providers review the City's Program and report any Red Flags to the Program Administrator; and,
- 3) Each Department is required to maintain an up-to-date written internal policy as it pertains to their internal security and identity theft.



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## **Appendix A**

### **Finance Department Internal Identity Theft Policy Utility Customer Services Effective October 25, 2008**

**PURPOSE:** Establish guidelines consistent with City of Columbia Ordinance

**POLICY:** Any person or agency requesting information regarding a customer's account must have a demonstrated right to know and present themselves in person with the proper identification.

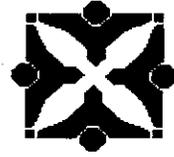
**PROCEDURE:**

Customers must identify themselves by the last 4 digits of their SS# before any information may be given on their account. If they can not give the last 4 digits of their SS# no information can be given.

- Telephone requests from the public for phone or social security numbers are always declined
- Persons requesting any information of a personal nature must come in person with picture ID and speak to the Manager/Supervisor.
- Faxed requests for personal information are not acceptable.
- For Realtors or prospective tenants/new homeowners it is acceptable to give information regarding high and low or average utility bills. It is not acceptable to disseminate any personal information in the notes, master file, or payment history.
- Requests for billing information from the file should only be given to the spouse, the significant other, or roommates listed in the master file or notes after they have provided the correct Social Security as verification.
- Governmental agencies; police or prosecutors requesting information should properly identify themselves. These calls should be handled by the Manager or Supervisor or the Collection staff.
- Any discussion of the details of customer's accounts outside of the office is never acceptable for any reason.
- When there is a confidential flag on an account, follow the instructions on the notes

Customer information on master file is password protected.

- Customers are not allowed in CSR Area
- Customer payment agreements are kept in the secure area.
- No paper documents may be left on desks



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## **Appendix A (cont'd)**

### **Finance Department Internal Identity Theft Policy**

### **Business License Division**

### **Effective October 25, 2008**

**PURPOSE:** Establish guidelines consistent with City of Columbia Code-4 of Ordinances

**POLICY:** Any person or agency requesting information regarding a business license customer's confidential information in their license file must have a demonstrated right to know and present themselves in person with the proper identification.

#### **PROCEDURE:**

##### **Identification of Red Flags**

- Mail sent to the license applicant is repeatedly returned as undeliverable.
- Suspicious immigration papers, criminal background check documents and other identification documents that appear to be forged/altered or are not consistent with information provided by the license applicant.
- Receiving information from American DataBank Inc., the company that provides criminal background check services, concerning the inconsistency of a social security number and date of birth of a license applicant.
- The license applicant fails to provide the required personal identifying information (incomplete application).
- Receiving verbal or written information concerning an applicant submitting fraudulent documents.
- Applicant's driver's license photo is inconsistent with the person presenting the documentation.

- Owner of company listed on license application inconsistent with the Missouri Secretary of State records.

#### Detection of Red Flags

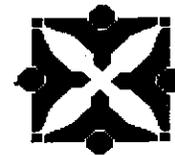
- Require identifying information from all license applicants.
- Verify the applicant's identity in person.
- Review documentation showing the existence of a business entity.
- Verify the identity of applicants, if they request information.

#### Preventing and Mitigating Identity Theft

- American Databank, Inc. monitors identifying information for inconsistencies in social security number, name, date of birth, and relays this information to the Business License Office.
- The invoices received from American Databank include only the last four digits of the applicants' social security number.
- Applicants' social security number and business gross receipts information are always deleted/blacked out on documents requested from a licensee's file.
- Social security and gross receipts information are never released unless requested by the applicant in person upon providing identification.
- Requests for confidential licensing information from City Police Department staff, Law Department staff, representatives from governmental agencies, etc., are required to obtain this information from the Business Services Administrator after providing identification.
- Inactive business license files are stored in a locked area.
- All Business License staff computers are password protected.
- Computer screens are only visible to the Business License employee when accessing licensing records.
- File cabinets that contain business license records, as well as hotel/motel and cigarette tax records, are locked at the end of each business day. The Business License area is never left unattended during office hours and access to this area is restricted to Business License staff and management.

- Always obtain copy of applicant's driver's license or other picture ID when applying for a license or permit.
- Check immigration papers to ensure validity.
- If an applicant fails to provide the requested personal identifying information, the license or permit application is denied.
- The appearance of altered or forged documents prompts further investigation.
- Double check with Missouri Secretary of State's Office to confirm members of a corporation are consistent with those listed on the application.
- Obtain criminal background check from previous state in which the applicant resided if the applicant has lived in Missouri for less than one year.
- Computer screen darkens or fades out when staff is away from their desks.
- The Business Services Administrator is the only person who can grant access to the business license system.

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## **Appendix A (cont'd)**

### **Finance Department Internal Identity Theft Policy**

### **Miscellaneous Receivables Accounting Division**

### **Effective October 25, 2008**

**PURPOSE:** Establish guidelines consistent with City of Columbia Code of Ordinances

**POLICY:** Any person or agency requesting information regarding a miscellaneous receivables customer's confidential information in their miscellaneous receivables file must have a demonstrated right to know

#### **PROCEDURE:**

##### Identification of Red Flags

- Mail sent to the miscellaneous receivable customer is repeatedly returned as undeliverable.
- Suspicious immigration papers, criminal background check documents and other identification documents that appear to be forged/altered or are not consistent with information provided by the miscellaneous receivable customer.
- Receiving verbal or written information concerning a miscellaneous receivable customer submitting fraudulent documents.
- Owner of company listed on miscellaneous receivable customer inconsistent with the MO Secretary of State records.

##### Detection of Red Flags

- Review documentation showing the existence of a business entity.
- Verify the identity of miscellaneous receivable customer if they request information.

##### Preventing and Mitigating Identity Theft

- Social security numbers are never requested, used, or stored, in the miscellaneous receivable customer information system
- Requests for confidential miscellaneous receivable customer information files are provided only to city staff that are working with the miscellaneous receivable customer information as required for their department
- Customers' bank account information which is stored in the miscellaneous receivable system is maintained in a secure manner. This information is not disclosed to parties outside the miscellaneous receivable system staff.
- Inactive miscellaneous receivable customer files are stored in a locked area.
- All miscellaneous receivable customer system records are password protected.
- The appearance of altered or forged documents prompts further investigation.
- Computer screen darkens or fades out when miscellaneous receivable staff is away from their desk.
- The Accounting Assistant for miscellaneous receivables is designated as the only person who can grant access to the miscellaneous receivable system

## **APPENDIX B**

### **Parks and Recreation Records Internal Identity Theft Policy Effective October 20, 2008**

**PURPOSE:** Establish guidelines consistent with the City of Columbia's Identity Theft Prevention Program.

**POLICY:** Any person or agency requesting information regarding customer's personal information must have a demonstrated right to know and present themselves in person with the proper identification.

**PROCEDURE:**

- All credit card and ACH banking information stored in RecTrac database is encrypted throughout the database and cannot be obtained by any user or staff.
- WebTrac (online registration) user name and passwords are set by customer. If customer forgets this information, they must know their security features they set up in order to access such information.
- E-mail and phone requests requesting customer's PIN # for online registration must confirm their mailing address, phone number and security features.
- Faxed requests are not acceptable.
- Refunds and payments are only allowed by the actual customer. There shall be no refunds or transfers of programs by individuals outside the customer's household.
- Governmental agencies; police or prosecutors requesting information must properly identify themselves. These requests should be handled by the Manager or Supervisor.
- Any discussion of the details of customer's personal information outside of the office is never acceptable for any reason.
- Scholarship assistance information shall be stored in a lockable file cabinet. Access to scholarship information shall be limited to those employees requiring access.
- The Department shall maintain an up-to-date list of those employees that are required to have access to personal records.
- Any photocopies made by Manager or Supervisor must have sensitive information (social security number, driver license number) blacked out.

## **APPENDIX C**

### **Information Systems Internal Identity Theft Policy Effective April 3, 2008**

Relevant excerpts from the  
City of Columbia Comprehensive Security Policy  
(entire policy may be found online at

<http://www.columbia.mo.gov/is/documents/security-policies.pdf>)

#### 1.3 Identification and Authentication

##### 1.3.1 Passwords

Passwords confirm that a person is who they claim to be. As such, passwords are extremely important to the security of the City of Columbia Information System. In general, city password policy encourages a balance between complexity, rotation, and user needs. Both lenient and strict policies are generally counter productive to security. This policy instead strives to set standards that, when used together, strike an appropriate balance.

##### 1.3.1.1 Complexity

Passwords should be greater than 8 characters, mix upper and lower case characters, and use symbols. Alternatively, passphrases can be used in the absence of passwords. For example, "AskNotForWhomTheBellTolls" is a very long password and is therefore more difficult to break. Passwords should not be easily guessed. Phone numbers, names of friends, relatives, and pets, and other personal information are generally very easy to guess.

PCI DSS 8.5.10

##### 1.3.1.2 Rotation

Passwords should not resemble previous passwords. For example, "Password12" should not be used if "Password11" has been used before. Where possible, systems and

applications should be set to “remember” old passwords and disallow use of passwords that match or are similar to a previous password. Where possible, systems should be set to store the last 10 passwords.

## PCI DSS 8.5.12

### 1.3.1.3 Password Responsibilities of Users

Users are responsible for choosing passwords that are reasonably complex as defined in 1.3.1.1. Users must be able to use their passwords day to day and are therefore responsible for choosing passwords that will be meaningful enough for them to remember. Users are allowed to write down their password if they are unable to remember it. If a user chooses to write down his/her password, he/she must follow these rules:

- a) Their user id must not accompany the password
- b) The written password must be stored in a locked location to which ONLY the user has access. The written password must never be hidden in an unlocked location.
- c) The password should not be disposed of until it is no longer valid. If possible, the user should shred the password.

Users must recognize the importance of password privacy. Users must never share their password with anyone. Users must never ask each other for their passwords.

Departments must make sure that business operations are such that users never need to share credentials. IT staff must never ask users for their passwords and users must understand that IT staff will never do so.

### 1.3.1.4 Creating and resetting passwords

Temporary passwords, whether created due to account creation or password reset, are subject to section 1.3.1.1. A temporary password created for one user should not be the same as a temporary password created for another user. Instead, temporary passwords should be random and unique.

Users should call the Helpdesk to have passwords reset for every system and application. The Helpdesk should generate a temporary password, set the password to expired, and give the user the new password. The Helpdesk should encourage the user to immediately change the password. When passwords are reset the password should never be available to the user in an electronic form. The Helpdesk shall reset the password then give the new password to the user over the phone.

When a user requests a password reset, a work order shall be immediately created before continuing. The technician resetting the passwords shall check the SecTrack application to ensure the user is allowed to use the system for which he/she is requesting the password change. If the user is not authorized to use the system for which he/she is requesting access, the technician shall inform the user that he/she needs access through the SecTrack system and he/she should speak to his/her supervisor. The success or failure of the password reset will be documented in the work order. The temporary password should not be put in the content of the work order.

Users should never be allowed to reset their password without sufficiently proving that they are who they claim to be. Systems and applications that have "Forgot Password" links should direct users to the Helpdesk instead of providing a password reset method. Helpdesk employees must take responsibility for ensuring that the person requesting a password change is who they claim to be.

If the helpdesk employee cannot verify the user's identity, the Helpdesk employee may require the user to provide "cognitive passwords," or answers to questions that only the user is likely to know. A list of questions and their corresponding answers will be maintained by the IT department, and when a user calls with a password reset request, three questions will be chosen at random. The user must be able to answer the cognitive password questions before the password is reset.

PCI DSS 8.5.2, PCI DSS 8.5.3

#### 1.3.1.5 Password expire

Passwords shall expire every 90 days. Once a password is expired, the user shall be required to change it. All systems and applications that support password expiration should enforce this policy.

PCI DSS 8.5.9

#### 1.3.1.6 Password Transmission and Storage

Passwords should be encrypted using hash algorithms whenever stored or transmitted. The password hash algorithm used should be evaluated in accordance with the cryptography policy.

PCI DSS 8.4

#### 1.4.3 User privilege audits

Each system and application should have a user privilege audit at least annually.

The audit should consist of two parts:

- 1) Department confirmation that the requested access on file in SecTrack matches the access the department wishes the user to have.

- 2) The access given matches the access requested in SecTrack.

Satisfies NERC CIP-003-1 R5.2

#### 1.4.4 Account audits

Each system and application should have an account audit at least annually. The audit may be done in concert with the user privilege audit in 1.4.3. The audit should consist of two parts:

- 1) Enumeration of all user accounts.
- 2) Determination that each user account has a valid SecTrack request and that the user is still employed by the city.

NERC CIP-003-1 R5.2

#### 1.5 Accountability and risk mitigation measures

##### 1.5.1 Accountability

Every system and application has an accountability mechanism that differs in some way from the mechanisms of other systems and applications. Each system and applications should be evaluated and accountability mechanisms should be enabled and configured according to risk. The following are general guidelines to implementing accountability across multiple independent systems and applications.

##### 1.5.2 Authentication logging

Systems and applications should, where possible, create log entries for authentication attempts, both successful and failed. Log entries should include user identification, date/time stamp, and the device (machine name and/or IP address) from which the attempt originated.

##### 1.5.3 Review of authentication events

Every system and application should have its logs reviewed regularly for possible security breaches. The frequency and content of the log audits may be different for each system and should be risk based.

#### 1.5.4 Last login information

On systems and applications where capability exists, the user should be presented with details about their last successful login. Details should include time, date, place and any other pertinent information specific to the system or application.

#### 1.6 Administration

##### 1.6.1 Clipping level

Accounts should not allow an infinite number of “tries” until the correct password is used. Instead systems and applications should implement a “clipping level” that locks out accounts once a certain number of failed attempts has occurred for a user id. Systems and applications that have an enforcement mechanism for this policy shall have this value set to no more than 6. If possible, the user should not be aware that their account is disabled, only that their login attempt failed. Systems and applications should lock accounts for no less than 30 minutes.

PCI DSS 8.5.13, PCI DSS 8.5.14



## **APPENDIX D**

### **Columbia Police Department Notification Procedures**

#### **Effective October 24, 2008**

City of Columbia Employees will routinely be exposed to situations where Identity theft is a concern. It is imperative that staff follow notification procedures to ensure that the interests of both the City of Columbia and potential victims are protected.

Employees will consistently be discussing account and customer information over the phone or in person. It is imperative that the customer identity be established prior to any account services being provided. Employees, at times, will be given conflicting or false customer information. If the information can not be clarified or substantiated by staff to a reasonable degree, the customer will be required to respond in person and show a valid form of photo I.D. Once employees are reasonably satisfied there are no identity theft concerns, services can be provided.

Employees who continue to suspect the customer of identity theft can request the assistance of the Columbia Police Department. Employees should obtain a detailed description of the suspect and be able to provide a short synopsis of the incident. Officers will respond to investigate, determine if a crime occurred and take appropriate action.

Staff will potentially discover instances of identity theft or will be notified by a customer of the crime. Employees will assist victims of identity theft with necessary information and also assist with the investigation. Employees will provide an "Identity Theft Victim Information" sheet to all potential victims. Any victims who suffer a monetary loss and are seeking potential reimbursement from the city of Columbia will be required to file a police report and assist with prosecution.

Employees will call the Columbia Police Department and an officer will respond to investigate. Staff should be prepared to provide the officer copies of original documents or any other pertinent information that can be used for the investigation. If the City of Columbia suffers a loss from the identity theft incident the officer needs to note this in the police report for potential restitution.

Employees discovering incidents of internal theft should obtain enough information for a preliminary police report. Staff should be prepared to work with investigators and gather the following information:

## Case preparation guideline for embezzlement or internal theft cases

### Major Crimes Division, Columbia Police Department

No one is more familiar with your bookkeeping methods than you or your accountant. Therefore, it is important that you convey that information in a manner that is easy to understand and follow. In order to assist in the investigation and prosecution of your case, it is requested that you provide documentation in the following format.

#### Document preparation:

When preparing your documentation, place all of the pertinent information into a three-ringed binder that is designed to hold your information secure. Original documents should be used when compiling your initial folder. Once your original binder has been completed, make three copies. Please retain one copy for your records. The original and **two** copies should be submitted to the police. Once your case has been completed, the original documents will be returned to you. **Please remember that a neat and professional product is very important.**

#### Overview sheet:

The overview is a “brief” narrative that provides enough details of the case that the reader can obtain a clear understanding of the incident. The following information must be included, but is not limited to:

- A. Who discovered the theft and how it was uncovered.
- B. Who the suspect is.
- C. The dates of when the theft started and ended.
- D. The theft amount.
- E. How the theft was performed.
- F. The names of anyone the suspect made statements to about the theft and what was said.

#### Narrative sheet:

Please provide a “detailed” explanation of the theft. Please include the same information from the Overview Sheet section, plus an explanation of the supporting evidence, i.e. documents, ledgers, receipts, etc. Note: This section should read like a novel, covering every aspect of the case from beginning to end. Your information may be returned for revision, if this section is not thorough. It is vital that you explain all the supporting documents in this section, so it is clear and easy to understand. All documents must be numbered. Numbering each document makes it easier for the reader to locate information, when you refer to specific figures and page numbers. You may also consider using a highlighter to aid in quick location of figures.

#### Itemized list

This section is composed of an itemized list of each loss, date of the loss and the supporting document page number. A total loss dollar amount should be included at the bottom of this list.

#### Supporting Documents:

Include all documents relating to this case, which were explained in the “Narrative” section. **If you have any questions; do not hesitate to call the detective handling your case. The investigative office can be reached at (573) 874-7423.**

Finally, employees discovering incidents of computer related crimes (hacking or similar offenses) or where customer information or employee identity theft is at risk should immediately call the Columbia Police Department to file a report and initiate an investigation. (**Emergency 911; Non-Emergency 442-6131**)

The following Identity Theft Victim Information is what responding police officers provide Identity Theft Victims:

### **Identity Theft Victim Information**

The City of Columbia requires a Police report and cooperation in the prosecution of the person or persons responsible before any reimbursement of losses will be discussed/determined.

Place a fraud alert on your credit reports and review your credit reports:

Equifax	1-800-525-6285 P.O. Box 740241 Atlanta, GA 30374-0241
Experian	1-888-EXPERIAN (397-3742) P.O. Box 9532 Allen, TX 75013
TransUnion	1-800-680-7289 Fraud Victim Assistance Division P.O. Box 6790 Fullerton, CA 92834-6790

When you report to one of these bureaus, they will report to the other two for you, and send you free reports. When you receive your reports, review them carefully. If there are any errors, report that to the credit bureaus by phone and in writing.

**Close any accounts that have been tampered with or opened fraudulently**, such as credit cards, bank accounts, phone and cell phone accounts, utility accounts, and internet service providers. Either use an Identity Theft Affidavit or ask the company to send you fraud dispute forms if they prefer, if there are fraudulent charges or debits.

**The ID Theft Affidavit** is to make sure you do not become responsible for debts incurred by the ID thief, so you must provide proof you did not create the debt. You can use the affidavit where a **NEW** account was opened in your name. Use it ASAP. For **EXISTING** accounts, your credit company will provide you with their own Dispute forms. The ID Theft Affidavit can be found at [www.consumer.gov/idtheft](http://www.consumer.gov/idtheft).

If your ATM card is lost, stolen, or otherwise compromised, cancel it. Get a new card and PIN.

If your checks were stolen or misused, close that account and open a new one. Contact the three major check verification companies, and ask that retailers who use their databases not accept your checks.

TeleCheck 1-800-710-9898 or 927-0188

Certegy, Inc. 1-800-437-5120  
International Check Services 1-800-631-9656

Call SCAN at 1-800-262-7771 to see if bad checks are being passed in your name.

- **File a complaint with the FTC.**

FTC Toll-free 1-877-IDTHEFT (438-4338), [www.consumer.gov/idtheft](http://www.consumer.gov/idtheft) TDD 202-326-2502

Identity Theft Clearinghouse  
Federal Trade Commission  
600 Pennsylvania Ave., NW  
Washington, DC 20580

- Document everything: Keep originals of all correspondence and documents; send copies as necessary
- Keep a record of everyone you talk to (names, dates, etc.)
- Keep all your files FOREVER! If something happens at a later date, you will be glad you did
- If you believe someone has filed for bankruptcy in your name, write to the U.S. Trustee in the region where it was filed. A list is available on the UST website at [www.usdoj.gov/ust/](http://www.usdoj.gov/ust/)
- If wrongful criminal violations are attributed to your name, contact that law enforcement agency
- Contact the Department of Motor Vehicles at [www.dor.mo.gov/](http://www.dor.mo.gov/) and ask that your files be flagged
- If theft of mail was involved, contact the U.S. Postal Inspection Service at [www.usps.gov/websites/depart/inspect](http://www.usps.gov/websites/depart/inspect)
- If phone fraud was involved, contact the Public Utility Commission. If cell phone or long distance service was involved, contact the FCC at [www.fcc.gov](http://www.fcc.gov)
- If your social security number was involved, contact the Social Security Administration at [www.socialsecurity.gov](http://www.socialsecurity.gov)
- If tax fraud was involved, contact the IRS at [www.treas.gov/irs/ci](http://www.treas.gov/irs/ci)
- **You can find much more information about Identity Theft, with more help and guidance, at the FTC's website at [www.consumer.gov/idtheft](http://www.consumer.gov/idtheft)**
- *Information provided comes directly from the FTC's website at [www.consumer.gov/idtheft](http://www.consumer.gov/idtheft)*

# **Appendix E**

## **Identity Theft Training Program**

### **Effective December 1, 2008**

#### **Training Protocol**

- I. Introduction
  - a. What is Identity Theft?
- II. Red Flag Legislation
  - a. The Federal Trade Commission's Red Flag Rule (Implements Section 114 of the Fair and Accurate Credit Transaction Act of 2003, pursuant to 16 C.F.R. 681.2.
  - b. Complying with the Red Flag Rule
  - c. How flexible is the Red Flag Rule?
- III. The City's Identity Theft Prevention Program
  - a. Departments who must comply
  - b. Examples of Red Flags
  - c. What is your role and responsibility?
- IV. Identity Theft
  - a. What is Identity Theft?
  - b. How does it happen?
  - c. How do you protect yourself from it?
  - d. What do you do if you're a victim?
- V. How to Report
  - a. Your expectations
  - b. Notifying Law Enforcement
  - c. Your Assistance if investigation involved
  - d. What to do if a Law Enforcement response is not necessary
- VI. Resources

**Appendix F**  
**Needs Assessment**  
**Effective December 1, 2008**

*Conducting a Needs Assessment*

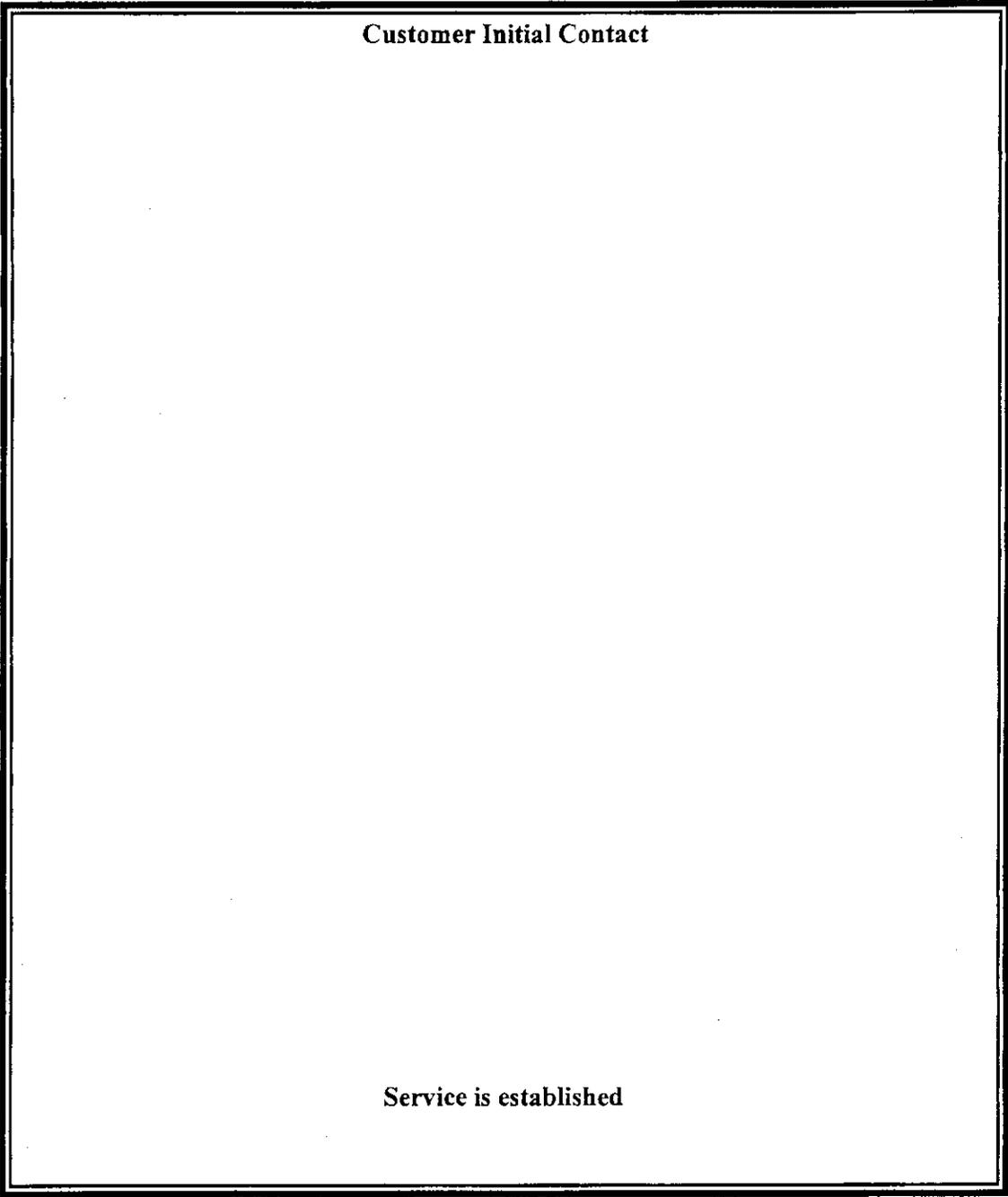
*Opening a New Record*

Identify the steps in establishing a new record for a customer.

- 1) What identification is required? How do you obtain identifying information and verify identity? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 2) Do they need to make the application in person or can they send in the information in an alternate form? Telephone or other? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 3) Does the Department use consumer reports in the application process? How? Establish deposit? Approve or deny services? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 4) Does the Department have policies and procedures that define red flags for identity theft and actions for mitigation? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 5) What happens to the hand written notes made by the Department Representative in the application process? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 6) Is the computer screen visible to others during the application process? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 7) Who has access to data once entered? Does the Department Representative lock computer when not at desk? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- 8) If applicant gives address, bank account, date of birth or social security number verbally to Department Representative, what precautions are taken from others hearing? \_\_\_\_\_  
\_\_\_\_\_
- 9) Once personal identification information is entered by Department Representative, where and how can it later be retrieved? \_\_\_\_\_  
\_\_\_\_\_
- 10) What safeguards are currently built into the application process? \_\_\_\_\_  
\_\_\_\_\_
- 11) What safeguards would you like to implement? \_\_\_\_\_  
\_\_\_\_\_
- 12) Which employees have access to information – is it on a “need to know” basis? \_\_\_\_\_  
\_\_\_\_\_
- 13) Is any customer personal information carried into the field on a laptop? \_\_\_\_\_  
\_\_\_\_\_

Map out the steps that occur when opening a new account. Is customer identification validated? Is so, how? Trace the flow of secured information.



*Needs Assessment continued*

*Monitoring an Existing Record*

Identify the possible red flags that may exist in the following procedures:

- ✓ Authenticating transactions for existing customers
- ✓ Monitoring activity/transaction of customers
- ✓ Verifying the validity of change of billing address
- ✓ Does the Department have policies and procedures that define red flags for identity theft and action for mitigation for existing records?

Does your Department use passwords or some form of security access?

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Describe your process for verifying validating the following:

Check by phone \_\_\_\_\_

Credit Card Number \_\_\_\_\_

Are receipts ever printed? If so, what part of number is exposed? \_\_\_\_\_

In what manner have customers attempted to fraudulently represent themselves as someone else in a transaction in an existing account?

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What safeguards are currently built into monitoring existing record(s)?

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What safeguards would you like to implement?

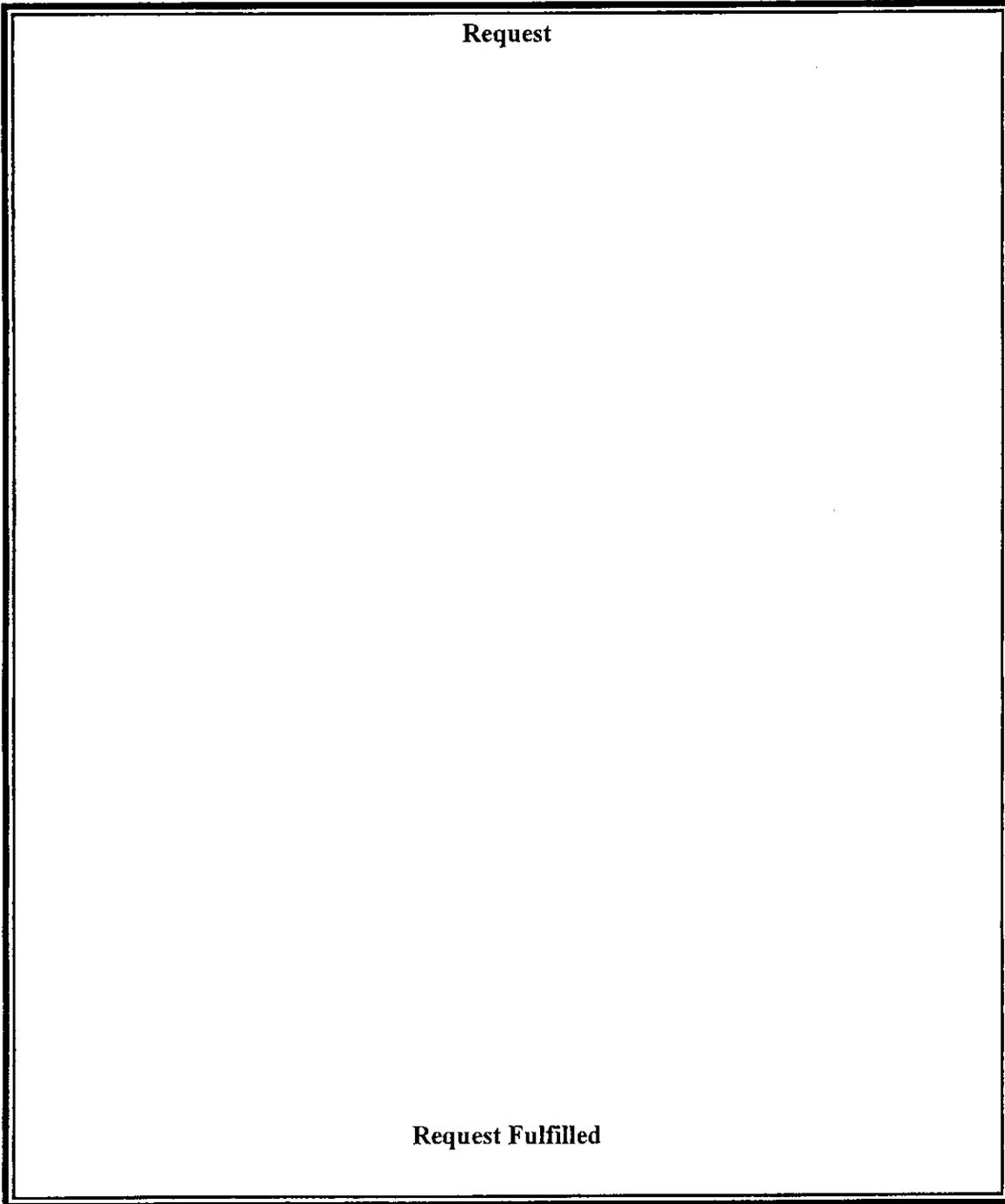
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Map out the ways customers, 3<sup>rd</sup> parties and others access existing Records.

How do you authenticate transactions for existing Records?



After you have mapped out the flow of information, identify possible areas where the protection of secured information could be improved.

# ATTACHMENT F

## External Cloud Policies

When the City of Columbia purchases services from an external cloud provider, as defined in this cloud strategy, the following policies must be followed:

### 2.0 Responsibilities of the City of Columbia

The City of Columbia will carry out the following tasks for every external cloud deployment as defined in this cloud strategy

- 2.1 The City of Columbia will establish a written agreement with the cloud vendor. This agreement will explicitly state the responsibilities of the vendor.
- 2.2 Prior to deployment, the City of Columbia will identify the regulations and standards that in force over the data or systems that may be moved to an external cloud. The City of Columbia will develop procedures and agreements with the cloud vendors to ensure compliance with all applicable regulations and standards.
- 2.3 The City of Columbia will establish an acceptable time frame for the vendor to respond to open records requests
- 2.4 The City of Columbia will establish a plan for the lifecycle of the service. The plan for the end of the service shall include what data will be extracted from the service, how data will be delivered, how the vendor will destroy data, and the price for these services. Data extracted from any system shall include transactional metadata, such as when data was added or changed and by whom.
- 2.5 The City of Columbia will calculate the anticipated load that will be placed on the City of Columbia internet connection. If the internet connection cannot handle the load a load management plan will be created and implemented prior to service implementation.
- 2.6 The City of Columbia will establish a business continuity plan that can be put into effect if the service ever becomes unavailable.
- 2.7 The City of Columbia shall manage all user accounts for the service. User accounts shall be managed through the existing security track procedures.

### 3.0 Responsibilities of the Vendors

All external cloud vendors, defined as vendors providing any cloud services as defined in this strategy to the City of Columbia must adhere to the following policies

#### 3.1 Records Requests

3.1.1 The vendor will respond to records request within the timeframe stated in the agreement. The vendor will accept liability if the records request is not fulfilled in the agreed upon timeframe.

#### 3.2 Using City of Columbia Domain Names

3.2.1 All cloud deployments that are intended to perform a service for our customers will be deployed using the gocolumbiamo.com domain name.

3.2.2 The City of Columbia IT Department will be the sole entity responsible for the gocolumbiamo.com domain name. The cloud vendor shall not expect to maintain DNS records belonging to the City of Columbia

3.2.2.1 The cloud vendor will provide the IP addresses used for the service prior to deployment. The City of Columbia IT Department will update the gocolumbiamo.com domain records accordingly.

3.2.2.2 The cloud vendor shall not change the addresses used with a frequency of greater than once per year

3.2.2.3 The cloud vendor shall notify the City of Columbia IT department in writing on official letterhead 30 days in advance of any IP address changes

3.2.2.4 The cloud vendor will use the gocolumbiamo.com only for the business purposes authorized by this agreement

#### 3.2.3 Email from gocolumbiamo.com

When sending email from the service using the gocolumbiamo.com domain name, the following additional policies will be in effect

3.2.3.1 The cloud vendor will provide the IP addresses from which email will be sent. The City of Columbia IT Department will use this information to update the gocolumbiamo.com SPF record.

3.2.3.2 The addresses provided to the City of Columbia as required in 3.2.3.1 shall be only those IP addresses that are used to send email using the gocolumbiamo.com domain name.

## ATTACHMENT F

3.2.3.3 The City of Columbia will update the gocolumbiamo.com SPF records according to the same policies and timelines as defined in 3.2.2 of this policy.

3.2.3.4 The cloud vendor will take all reasonable precautions to ensure that SPAM is not sent using the gocolumbiamo.com domain or from any IP address under cloud vendor control that has been associated with the gocolumbiamo.com domain.

3.2.3.5 The cloud vendor will react to email abuse reports in a timely manner

### 3.3 Standards and Regulations

3.3.1 The cloud vendor will adhere to relevant standards. For example, SaaS vendors deploying products over the web shall adhere to OWASP or similar standards.

3.3.2 The cloud vendor shall take responsibility for all regulatory compliance.

3.3.3 The cloud vendor shall conduct regular security audits of their systems. The security audits shall include internal and external review of system security and the security of all code used by the vendor. The vendor shall react promptly to mitigate the vulnerabilities identified by security audits.

### 3.4 System Integration

When an external cloud deployment requires access to existing information system infrastructure the following policies must be followed

3.4.1 Software should run with least possible privilege. For example, if database access needs to be given, the system account should have the least possible privilege; it should not run as a user that has access to schema outside of its need.

3.4.2 System account names should not be easily guessed. Passwords for these accounts should not be easily guessed and should be different from other customers with the same product. Connections from system accounts should be, where appropriate and possible, controlled via access lists.

### 3.5 Deployment and Customization

3.5.1 The cloud vendor shall disclose any authentication information that exists by default. The cloud vendor shall work with the City of Columbia to remove or change these accounts from their default values. The vendor shall not deploy services to the City of Columbia where system accounts are shared with other entities.

### 3.6 Encryption

3.6.1 Cloud vendor shall establish a suitable data encryption scheme for data in transit between the City of Columbia, its customers, and the vendor. The City of Columbia will determine the suitability of the encryption scheme.

3.6.2 Cloud vendor shall establish a suitable encryption for City of Columbia data while in storage for both live and backup media. The City of Columbia will determine the suitability of the encryption scheme.

3.6.3 No encryption scheme will be considered suitable if City of Columbia data can be recovered using the same decryption key as that of another customer of the cloud vendor.

### 3.7 Incident Preparation

3.7.1 The cloud vendor will take responsibility for keeping their system software up to date. Vendors should monitor relevant discussion boards and mailing lists for security problems with products they use.

3.7.2 The cloud vendors shall have a method for customers and others to report security problems. This method should be well publicized and accessible. Vendors should have a method for prioritizing and acting on reports of security problems.

3.7.3 The cloud vendors shall have a method for correcting discovered vulnerabilities. Vulnerabilities should be prioritized and corrected based on the risk vulnerability exploitation would pose to its customers. Vulnerability mitigation efforts should be tested by the vendor, as appropriate, prior to their release.

### 3.8 Incident Response

3.8.1 The cloud vendor will take responsibility for security incident handling if their system is compromised.

3.8.2 The cloud vendor shall immediately notify the City of Columbia of any breaches and will advise what information has been compromised. If this information is later found to be inaccurate the cloud vendor will immediately notify the City of Columbia with the correct information.

## ATTACHMENT F

3.8.3 If investigation, containment, and eradication efforts by the City of Columbia incur costs while fault lies with the cloud vendor, the cloud vendor will assume the costs.

3.8.4 The cloud vendor will provide a rapid contact method for reporting suspected abuse, 24x7x365. The cloud vendor will react in a timely manner to abuse reports from the City of Columbia

3.8.5 The cloud vendor will provide their incident response plans. Response plans will include procedures for both security incident and disaster incident response.

AGREEMENT  
BETWEEN THE CITY OF COLUMBIA, MISSOURI, AND QUARKWORKS, LLC  
FOR PROFESSIONAL SERVICES FOR DEVELOPMENT OF MOBILE  
APPLICATIONS

THIS AGREEMENT, is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2013 (hereinafter, the “Effective Date”), by and between the City of Columbia, Missouri, a municipal corporation, (hereinafter “City”) and QuarkWorks, LLC, a Missouri limited liability corporation (hereinafter “APP Developer”). City and APP Developer are each individually referred to herein as a “Party” and collectively as the “Parties”.

RECITALS

WHEREAS, the City of Columbia, Missouri, operates a bus system consisting of fixed routes, special event routes, and paratransit routes;

WHEREAS, City is entering into a contract for the purchase of a hosted bus scheduling and tracking software product from DoubleMap, Inc., a corporation organized in the State of Indiana (hereinafter, “Third Party Transit Software Vendor”),

WHEREAS, City desires to have APP Developer develop mobile applications in IOS and Android platforms (hereinafter collectively referred to as “APPS”) for smart phones and tablets using real time data from the Third Party Transit Software Vendor via Third Party Transit Software Vendor’s Application Programming Interface (hereinafter “API”);

WHEREAS, APP Developer represents that APP Developer has the skills and resources in which to develop mobile applications for use by citizens for the real time tracking and routing of the buses and to design the APPs to perform according to the City’s design and functionality specifications;

WHEREAS, APP Developer represents that that the APPs shall perform to the design and functionality specifications of the City and shall provide real time bus tracking information to the users of the APPs;

WHEREAS, City desires to contract with APP Developer’s for APP Developer to build APPs;

NOW THEREFORE, in view of the foregoing facts, which the Parties believe are true and which are incorporated as part of this Agreement, the Parties hereto, in consideration of the covenants and agreements herein stated, mutually agree as follows:

SECTION 1  
CONDITION PRECEDENT TO ANY PERFORMANCE UNDER THIS AGREEMENT

1.1 API. This Agreement is contingent upon the CITY obtaining an API from the Third Party Software Vendor. APP Developer shall agree in writing that the API is sufficient to provide the real time bus tracking data for APP Developer to use for the APPs.

1.1.1 CITY's contract with Third Party Software Vendor shall include a clause that requires Third Party Software Vendor to timely provide the API to APP Developer.

1.2 SATISFACTION OF CONDITIONS PRECEDENT. The Parties' obligations under this Agreement shall be contingent upon the following Conditions Precedent. The Conditions Precedent to the CITY's obligation under this Agreement shall be the following; and under no circumstance shall the following conditions precedent be deemed waived by CITY.

1.3 CONDITIONS PRECEDENT.

1.3.1 Third Party Transit Software Vendor shall agree to provide API to APP Developer.

1.3.2 Approval of Additional Design and Functionality Specifications of APPs and Schedule for Performance. APP Developer and CITY shall agree on the additional design and functionality specifications of the APPs (hereinafter "Additional Design and Functionality Specifications") and a written Schedule for Performance. The Additional Design and Functionality Specifications and the Schedule for Performance shall be reduced to writing and signed by both Parties. Both APPs shall be developed to perform according to the Mandatory Design and Functionality Specifications set forth in Sections 2.1-2.3. In addition, both APPs shall be developed to perform according to the Additional Design and Functionality Specifications adopted in writing by the Parties pursuant to this Section.

1.3.3 Approval of API by APP Developer. APP Developer shall provide CITY with written notice that the API provided by the Third Party Software Vendor is sufficient to allow the APPs to utilize real time data to timely provide the functionality specified by the CITY and agreed to by the Parties as required in Section 1.3.2.

1.3.4 City shall issue a written notice to proceed with Phase 1 of the project.

1.4 FAILURE OF ANY CONDITION PRECEDENT.

1.4.1 If any CONDITION PRECEDENT contained in Section 1.3 has not been satisfied within sixty (60) days of the Effective Date, this Agreement shall immediately terminate without any compensation to either Party. The Parties may agree in writing to an extension of time in which to satisfy the Conditions Precedent. Neither Party shall be liable to the other Party to pay for any work performed prior to the CITY's written notice to proceed with Phase 1 pursuant to Section 1.3.4.

- 1.4.2 NO PENALTY TO CITY FOR FAILURE OF CONDITION PRECEDENT. If each and every Condition Precedent is not satisfied, there is no penalty to the CITY.

SECTION 2  
MANDATORY DESIGN AND FUNCTIONALITY SPECIFICATIONS OF  
APPS

2.1 APP Developer represents and warrants that the APPs shall use real time bus tracking information to track city buses on fixed routes (including the University routes), special event routes, and paratransit routes and provide real time information to users of the APPs. APP Developer understands that City requires real time bus information to be used by the APPs, and that real time bus information may or may not correspond with scheduled arrival times.

2.2 APP Developer further understands and warrants that its APPs shall be compliant with the Americans with Disability Act.

2.3 City desires two APPs, one which is to be built on an iOS platform and one which is to be built on an Android platform. Both APPs shall function on cell phones and tablets. The Parties agree that the development shall proceed in two phases and according to the Schedule for Performance.

2.3.1 Phase 1 Development of iOS APP. Phase 1 of this Project shall consist of an APP built on an iOS platform. The Parties agree that the iOS APP shall be designed and shall function according to the specifications of the Mandatory Design and Functionality Specifications and the Additional Design and Functionality Specifications (hereinafter, collectively known as "Phase 1 iOS Specifications"). APP Developer shall notify City in writing that iOS APP is complete and is functioning according to the Phase 1 iOS Specifications. City shall test the iOS APP. Upon City's satisfaction that the iOS APP performs according to the Phase 1 iOS Specifications, City shall provide written notice that Phase 1 is complete, that APP Developer shall place iOS APP in iOS marketplace, and may issue City's written Notice to Proceed with Phase 2. If APP does not conform to the Phase 1 iOS Specifications to City's sole satisfaction, APP Developer shall make any and all necessary changes to provide an iOS APP that functions to the Phase 1 iOS Specifications to City's satisfaction. Should APP Developer fail to furnish iOS APP that performs to the requirements of the Phase 1 iOS Specifications, CITY may treat this Agreement as breached by APP Developer and, at CITY's option, may terminate this Agreement.

2.3.2 Phase 2 Development of Android APP. Phase 2 of this Project shall consist of an APP built on an Android platform. APP Developer shall not proceed with Phase 2 of this Project until City issues written notice to proceed with Phase 2. The Parties agree that the Android APP shall be designed and shall function according to the specifications of the Mandatory Design and Functionality Specifications and the Additional Design and Functionality Specifications (hereinafter, collectively known as "Phase 2 Android

Specifications”) APP Developer shall notify City in writing that Android APP is complete and is functioning according to the Phase 2 Android Specifications. City shall test the Android APP. Upon City’s satisfaction that the Android APP performs according to the Phase 2 Android Specifications, City shall provide written notice that Phase 2 is complete and that APP Developer shall place Android APP in Android marketplace. If Android APP does not conform to the Phase 2 Android Specifications to City’s sole satisfaction, APP Developer shall make any and all necessary changes to provide an Android APP that functions to the Phase 2 Android Specifications to City’s satisfaction. Should APP Developer fail to furnish Android APP that performs to the requirements of the Phase 2 Android Specifications, CITY may treat this Agreement as breached by APP Developer and, at CITY's option, may terminate this Agreement.

2.4 PLACEMENT OF APPS IN THE MARKETPLACE. Upon City’s written authorization, APP Developer shall make the iOS APP available in the iOS App store and shall make the Android APP available in the Android Marketplace/Android App store. There shall be no cost for downloading or using the APPs.

2.5 REMOVAL OF APPS FROM THE MARKETPLACE. Upon City’s written request, APP Developer shall remove APPs from the Marketplace. Said written request shall specify the APP to be removed and shall specify a deadline for removal. APP Developer shall comply with the request in the time specified by City.

### SECTION 3

#### DATA OWNERSHIP AND SECURITY, SOURCE CODE

3.1 DATA OWNERSHIP AND STORAGE. APP Developer covenants that any data from the CITY, its employees or customers or derived therefrom shall be stored in the United States of America. The data or any information derived therefrom shall not be transferred, moved, or stored to or at any location outside the United States of America. All such data and any information derived therefrom shall be confidential and proprietary information belonging to either the CITY or its customers or the users of the APPs. APP Developer covenants that APP Developer, its subsidiaries or subcontractors shall not sell or give away any such CITY data or information derived therefrom.

3.2 COMPLIANCE WITH STANDARDS AND POLICIES RELATED TO DATA SECURITY. APP Developer shall at all times comply with the terms of this Agreement and Applicable Laws.

3.2.1 Cloud Storage. If the APPs utilize cloud storage, APP Developer shall comply with the CITY’s Cloud Computing Requirements.

3.2.2 Credit or Debit Card Processing or Storage. If the Additional Design and Functionality Specifications include credit card, debit card, or other information protected by law or by the CITY’s Red Flag Policy, APP Developer shall comply and shall warrant

that the APPs comply with the Payment Card Industry (PCI) Data Security Standards; Good Financial Industry and Accounting Practices; SAS70 auditing standards; Visa, Mastercard, and Discover Card Rules and Regulations; NACHA (The Electronic Payments Association) Rules; and the CITY's Red Flag Policy. APP Developer shall comply with the CITY's Red Flag Policy and timely report any Red Flags to the CITY's Program Administrator. Said report shall include Red Flags detected by APP Developer or its subcontractors or subsidiaries and APP Developer's response to the Red Flags so detected. APP Developer shall provide CITY with a copy of its existing Red Flag policies and procedures, and shall promptly provide copies of any changes to its Red Flag policies and procedures.

3.3 DUTY TO REPORT. APP Developer shall maintain the security of CITY content and data and that of CITY's customers and any user of the APPs that is stored in or in any way connected with APPs. If either Party believes or suspects that security has been breached or data compromised whether it be from harmful code or otherwise, the Party shall notify the Other Party of the issue or possible security breach within forty-eight (48) hours.

3.4 BINDING SUBCONTRACTORS AND SUBSIDIARIES TO DATA SECURITY STANDARDS. APP Developer shall include similar provisions in APP Developer's agreements with subcontractors and subsidiaries who perform work or services related to these APPs.

3.5 SOURCE CODE ESCROW. APP Developer shall place Source Code for the APPs in escrow with an independent third-party at no additional cost to City. The Source Code shall be kept current with the releases / version of the APPS in live use by City. The Source Code shall revert to City for City's use if APP Developer files for bankruptcy or protection from creditors in a court of law. City shall then have full rights to use source code for any purposes other than resale.

APP Developer will provide appropriate source code to the City in a timely manner in the event that the APP Developer goes out of business or no longer supports the APPs. The same applies if the APP Developer is merged or acquired and the APPs are no longer supported. Once the City obtains the source code, City may continue to use APPS and source code for City purposes and there will be no additional fees due.

#### SECTION 4 MAINTENANCE

4.1 MAINTAINING FUNCTIONALITY OF APPS. APP Developer shall maintain the functionality of APPs so that APPs continually perform according to the specifications set forth herein. At no additional cost to City, APP Developer shall maintain the functionality of the iOS APP so that the iOS APP shall perform according to the Phase 1 iOS Specifications. At no additional cost to City, APP Developer shall maintain the functionality of the Android APP so that the Android APP shall perform

according to the Phase 2 Android Specifications. Maintaining the functionality of the APPs shall include any necessary programming or redesign needed due to changes by third parties or by the CITY.

4.2 TIMING AND NOTICE OF SCHEDULED MAINTENANCE WORK. For scheduled maintenance, APP Developer shall notify CITY of any scheduled maintenance at least 24 hours in advance of maintenance. All such scheduled maintenance shall occur while the bus system is not in operation.

4.3 TIMING AND NOTICE OF EMERGENCY MAINTENANCE WORK. For emergency maintenance, APP Developer shall notify City of any emergency maintenance as soon as possible, but no later than one (1) hour after maintenance begins.

4.4 CHANGES BY THIRD PARTIES including THIRD PARTY SOFTWARE VENDOR, and Apple, and Android. The Parties recognize that changes by third parties may impact the functionality of the APPs.

4.4.1 Changes by Third Party Software Vendor. At no additional cost to City, APP Developer shall maintain the functionality of the iOS APP so that the iOS APP shall perform according to the Phase 1 iOS Specifications. At no additional cost to City, APP Developer shall maintain the functionality of the Android APP so that the Android APP shall perform according to the Phase 2 Android Specifications.

4.4.2 Changes to the iOS Operating System by Apple. APP Developer shall, at its own expense and without reimbursement from the CITY, maintain the functionality of the iOS APP to allow users to continue using the iOS APP in accordance with the Phase 1 iOS Specifications for the version specified in the Phase 1 iOS Specifications and any newer version of the iOS Operating System.

4.4.3 Changes to the Android Operating System by Google. APP Developer shall, at its own expense and without reimbursement from the CITY, maintain the functionality of the Android APP to allow users to continue using the Android APP in accordance with the Phase 2 Android Specifications for the version specified in the Phase 2 Android Specifications and any newer version of the Android Operating System.

4.5 CHANGES BY CITY. The Parties recognize that changes in the CITY's operation of the bus system may impact the functionality of the APPs. These changes may be due to a change in the routes, or a special event, or an emergency. Except in the event of an emergency, CITY shall provide at least fourteen (14) days notice to APP Developer of proposed changes in the bus system that may impact the functionality of the APPs. The Parties shall work together to plan for such changes to allow for continued functionality of the APPs. In the event of an emergency, CITY shall promptly provide notice to APP Developer when an emergency change impacts the functionality of the APPs. APP Developer shall promptly make necessary changes to restore the functionality of the APPs. APP Developer, at its own expense and without reimbursement from the CITY shall maintain the functionality of the APPs

4.6 ADDITIONAL APPs or ADDITIONAL FUNCTIONALITY SPECIFICATIONS AFTER COMPLETION and ACCEPTANCE of APPs by CITY.

Should CITY desire APP Developer to develop additional APPs, the Parties shall negotiate an amendment to this Agreement.

## SECTION 5

## PAYMENT AND COMPENSATION

5.1 PAYMENT SCHEDULE. The Parties have agreed to the following payment schedule.

5.2 Phase 1 Payment and Compensation. Upon successful completion of Phase 1, City shall pay APP Developer seventeen thousand dollars (\$17,000.00). This payment shall include all compensation for the development of the iOS APP, the escrow of the source code for the iOS APP, and any ongoing maintenance of the iOS APP for the Term of the agreement.

5.3 Phase 2 Payment and Compensation. Upon successful completion of Phase 2, City shall pay APP Developer fourteen thousand dollars (\$14,000.00). This payment shall include all compensation for the development of the Phase 2 Android APP, the escrow of the source code for the Phase 2 Android App, and any ongoing maintenance of the Android App for the Term of the agreement.

5.4 NOT TO EXCEED. Total payment to APP Developer shall not exceed thirty-one thousand dollars (\$31,000.00).

## SECTION 6

### TERM, TERMINATION, AND DEFAULTS

#### 6. TERM

The "Term" of this Agreement shall commence on the Effective Date and shall continue until the date that is five (5) years following the Effective Date, unless otherwise terminated in accordance with its terms.

#### 6.1 TERMINATION.

6.1.1 FOR CONVENIENCE. City shall have the right at any time by written notice to APP Developer to terminate and cancel this Agreement, without cause, for the convenience of City. In such event, APP Developer shall immediately stop work and City shall not be liable to APP Developer except for payment for actual work performed prior to such notice in an amount proportionate to the completed Agreement price and for the actual costs of preparations made by APP Developer for the performance of the cancelled portions of the Agreement, including a reasonable allowance of profit applicable to the actual work performed and such preparations. Anticipatory profits and consequential damages shall not be recoverable by APP Developer.

6.1.2 BY MUTUAL AGREEMENT. This Agreement may be terminated at any time during its Term upon mutual agreement by both Parties upon any terms and conditions agreed to by the Parties.

6.1.3 BY FAILURE OF A CONDITION PRECEDENT. Pursuant to Section 1, if each and every CONDITION PRECEDENT is not satisfied, this Agreement shall terminate according to the terms of Sections 1 and 6.1.3. There shall be no payment made by CITY

to APP Developer if the Agreement is terminated due by failure of a Condition Precedent.

#### 6.1.4 BY DEFAULT.

6.1.4.1 Each of the following shall constitute an “Event of Default” hereunder:

(i) A failure by a Party to pay any amount due hereunder, where such failure is not cured within thirty (30) Days after written notice from the other Party of such failure to pay; or

(ii) Failure of iOS APP to perform according to the Phase 1 iOS Specifications; or

(iii) Failure of Android APP to perform according to the Phase 2 Android Specifications;

(iv) Either Party has (a) commenced a voluntary case under any bankruptcy law, applied for or consented to the appointment of, or the taking of possession by, a receiver, trustee, assignee, custodian or liquidator of all or a substantial part of its assets, (b) failed, or admitted in writing its inability generally, to pay its debts as such debts become due, (c) made a general assignment for the benefit of creditors, (d) been adjudicated bankrupt or has filed a petition or an answer seeking an arrangement with creditors, (e) taken advantage of any insolvency law or shall have submitted an answer admitting the material allegations of a petition in bankruptcy or insolvency proceeding, (f) become subject to an order, judgment or decree for relief, entered in an involuntary case, without the application, approval or consent of such Party any court of competent jurisdiction appointing a receiver, trustee, assignee, custodian or liquidator, for a substantial part of any of its assets and such order, judgment or decree shall continue unstayed and in effect for any period of one hundred eighty (180) consecutive Days, (g) filed a voluntary petition in bankruptcy, (h) failed to remove an involuntary petition in bankruptcy filed against it within one hundred eighty (180) Days of the filing thereof, or (i) become subject to an order for relief under the provisions of the United States Bankruptcy Act, 11 U.S.C. § 301; or

(v) Any Party’s actual fraud or other material misconduct in connection with this Agreement or the performance of its obligations under this Agreement; or

(vi) Any other default that has a material adverse effect on the non-defaulting Party if such default has not been cured by the defaulting Party within thirty (30) Days after receiving written notice from the non-defaulting Party setting forth, in reasonable detail, the nature of such default and its impact on the non-defaulting Party; provided, however, that, in the case of any such default that is not reasonably capable of being cured within the 30-Day cure period, the defaulting Party shall have additional time as necessary to cure the default if it commences to cure the default within such 30-Day cure period and it diligently and continuously pursues such cure.

(vii) The purported assignment of this Agreement in a manner inconsistent with the terms of this Agreement.

6.1.4.2 Upon the occurrence of an Event of Default by a Party, the non-defaulting Party shall have the following rights:

(i) To terminate this Agreement by providing at least sixty (60) Days prior written notice to the other Party of its intent to exercise its termination rights, unless such Event of Default is cured prior to the date of termination;

(ii) To suspend performance of its obligations and duties hereunder immediately upon delivering written notice to the defaulting Party of its intent to exercise its suspension rights; and

(iii) To pursue any other remedy given under this Agreement or now or hereafter existing at law or in equity or otherwise.

## SECTION 7 WARRANTIES of APP Developer

7.1 APP Developer warrants that iOS APP shall have the design and perform to the functional requirements set forth in the Phase 1 iOS Specifications.

7.2 APP Developer warrants that Android APP shall have the design and perform to the functional requirements outlined in the Phase 2 Android Specifications.

7.3 ORIGINAL WORK. APP Developer warrants that APPs are APP Developer's original work, and that APP Developer is the sole and exclusive owner and rights holder of the APPs and all included content, that no third parties will make any challenges or claims as to ownership or fraud. APP Developer also warrants that the APP Developer has not and APP does not (a) infringe upon any third party proprietary rights, intellectual property rights, industrial property rights, personal or moral rights or any other rights, including without limitation, copyright, trademark, patent, trade secret or confidentiality obligations; or (b) otherwise violate applicable U.S. law or the law of the Participant's country of residence.

7.4 INTELLECTUAL PROPERTY RIGHTS. APP Developer represents and warrants that APP Developer has all intellectual property rights, including all necessary patent, trademark, trade secret, copyright or other proprietary rights, in and to the APP. If APP Developer uses third-party materials in the APP, APP Developer represents and warrants that APP Developer has the right to distribute the third-party material in the APP. APP Developer agrees that APP does not include any material that is copyrighted, protected by trade secret or otherwise subject to third party proprietary rights, including patent, privacy and publicity rights, unless APP Developer is the owner of such rights or has obtained permission from their rightful owner to submit or include the material in the APP.

7.5 NO HARMFUL CODE. APP Developer warrants that APP does not contain Harmful Code. For purposes of this Challenge, "Harmful Code" is any code containing any program, routine, or device which is designed to delete, disable, deactivate, interfere with or otherwise harm any software, program, data, device, system or service, including without limitation, any time bomb, virus, drop dead device, malicious logic, worm, Trojan horse or trap or back door.

## SECTION 8

## INSURANCE

8.1 APP DEVELOPER'S INSURANCE: APP DEVELOPER agrees to maintain, on a primary basis and at its sole expense, at all times during the life of this contract the following insurance coverages, limits, including endorsements described herein. The requirements contained herein, as well as CITY's review or acceptance of insurance maintained by APP DEVELOPER is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by APP DEVELOPER under this contract.

8.2 Commercial General Liability. APP DEVELOPER agrees to maintain Commercial General Liability at a limit of liability not less than \$2,000,000 combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death. Coverage shall not contain any endorsement(s) excluding nor limiting Contractual Liability or Cross Liability.

8.3 Professional Liability APP DEVELOPER agrees to maintain Professional (Errors & Omissions) Liability at a limit of liability not less than \$2,000,000 Per Claim and \$2,000,000 aggregate. For policies written on a "Claims-Made" basis, APP DEVELOPER agrees to maintain a Retroactive Date prior to or equal to the effective date of this contract. In the event the policy is canceled, non-renewed, switched to an Occurrence Form, retroactive date advanced; or any other event triggering the right to purchase a Supplemental Extended Reporting Period (SERP) during the life of this contract, APP DEVELOPER agrees to purchase a SERP with a minimum reporting period not less than two (2) years. The requirement to purchase a SERP shall not relieve APP DEVELOPER of the obligation to provide replacement coverage.

8.4 Business Automobile Liability. APP DEVELOPER agrees to maintain Business Automobile Liability at a limit of liability not less than \$2,000,000 combined single limit for any one occurrence and not less than \$150,000 per individual, covering both bodily injury, including accidental death, and property damage, to protect themselves from any and all claims arising from the use of the APP DEVELOPER's own automobiles and trucks; hired automobiles and trucks; and automobiles both on and off the site of work. Coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event APP DEVELOPER does not own automobiles, APP DEVELOPER agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

8.5 Workers' Compensation Insurance & Employers' Liability. APP DEVELOPER agrees to take out and maintain during the life of this contract, Employers' Liability and Workers' Compensation Insurance for all of their employees employed at the site of the work, and in case any work is sublet, the APP DEVELOPER shall require the subcontractor similarly to provide Workers' Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the APP DEVELOPER. Workers' Compensation coverages shall meet Missouri statutory limits.

Employers' Liability minimum limits shall be \$500,000 each employee, \$500,000 each accident and \$500,000 policy limit. In case any class of employees engaged in hazardous work under this contract is not protected under the Workers' Compensation Statute, the APP DEVELOPER shall provide and shall cause each subcontractor to provide Employers' Liability Insurance for the protection of their employees not otherwise protected.

8.6 Excess/Umbrella Liability. The above liability limits may be satisfied by any combination of primary and excess/umbrella liability policies.

8.7 Additional Insured. APP DEVELOPER agrees to endorse CITY as an Additional Insured with a CG 2026 Additional Insured – Designated Person or Organization endorsement, or similar endorsement, to the Commercial General Liability. The Additional Insured shall read "City of Columbia."

8.8 Waiver of Subrogation. APP DEVELOPER agrees by entering into this contract to a Waiver of Subrogation for each required policy herein except Professional Liability. When required by the insurer, or should a policy condition not permit APP DEVELOPER to enter into an pre-loss agreement to waive subrogation without an endorsement, then APP DEVELOPER agrees to notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy, which includes a condition specifically prohibiting such an endorsement, or voids coverage should APP DEVELOPER enter into such an agreement on a pre-loss basis.

8.9 Certificate(s) of Insurance. APP DEVELOPER agrees to provide CITY with Certificate(s) of Insurance evidencing that all coverages, limits and endorsements required herein are maintained and in full force and effect. Said Certificate(s) of Insurance shall include a minimum thirty (30) day endeavor to notify due to cancellation or non-renewal of coverage. The Certificate(s) of Insurance shall name the City as additional insured in an amount as required in this contract and contain a description of the project or work to be performed.

8.10 Right to Revise or Reject. CITY reserves the right, but not the obligation, to review and revise any insurance requirement, not limited to limits, coverages and endorsements based on insurance market conditions affecting the availability or affordability of coverage; or changes in the scope of work / specifications affecting the applicability of coverage. Additionally, the CITY reserves the right, but not the obligation, to review Certificates of Insurance and reject any insurance policies failing to meet the criteria stated herein or any insurer providing coverage due of its poor financial condition or failure to operating legally.

## SECTION 9 MISCELLANEOUS

9.1 GENERAL LAWS.

a. APP Developer agrees to comply with all applicable laws, rules, regulations, ordinances, and statutes of the United States, State of Missouri, and City of Columbia, Missouri.

b. EXPORT RESTRICTIONS. PRODUCTS ON THE MARKET MAY BE SUBJECT TO UNITED STATES EXPORT LAWS AND REGULATIONS. APP DEVELOPER MUST COMPLY WITH ALL DOMESTIC AND INTERNATIONAL EXPORT LAWS AND REGULATIONS THAT APPLY TO APP DEVELOPER'S DISTRIBUTION OR USE OF APP. THESE LAWS INCLUDE RESTRICTIONS ON DESTINATIONS, USERS AND END USE.

c. EMPLOYMENT OF UNAUTHORIZED ALIENS PROHIBITED  
APP Developer agrees to comply with Missouri State Statute Section 285.530 in that they shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri. As a condition for the award of this contract APP Developer shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. APP Developer shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

d. Americans with Disabilities Act. APP Developer shall develop APPs to comply with the requirements of the Americans with Disabilities Act and to comply with the requirements of any rules or regulations of the federal, state, or local government related thereto.

9.2 NOTICE. Each notice, request, demand, statement or routine communication required or permitted under this Agreement, or any notice or communication that either Party may desire to deliver to the other, shall be in writing and shall be considered delivered effective: (a) when verified by written receipt if sent by personal courier, overnight courier, or mail; or (b) when verified by automated receipt or electronic logs if sent by facsimile or email.

The designation and titles of the person to be notified or the address of such person may be changed at any time by written notice.

FOR THE CITY:

City of Columbia  
PO Box 6015  
Columbia, MO 65205  
Attention: John Glascock  
Telephone: (573)874-7256

FOR THE APP DEVELOPER:

QuarkWorks, LLC  
18 South Ninth Street, Suite 207  
Columbia, MO 65201  
Attention: Bryan Pratte  
(573)999-1319

9.3 AMENDMENT. This Agreement shall not be modified or amended unless such modification or amendment shall be in writing and signed by authorized representatives of both Parties.

9.4 WAIVERS. Failure to enforce any right or obligation by any Party with respect to any matter arising in connection with this Agreement shall not constitute a waiver as to that matter nor to any other matter. Any waiver by any Party of its rights with respect to a default under this Agreement or with respect to any other matters arising in connection with this Agreement must be in writing. Such waiver shall not be deemed a waiver with respect to any subsequent default or other matter.

9.5 SEVERABILITY. If any of the terms of this Agreement are finally held or determined to be invalid, illegal or void, all other terms of the Agreement shall remain in effect; provided that the Parties shall enter into negotiations concerning the terms affected by such decision for the purpose of achieving conformity with requirements of any applicable law and the intent of the Parties.

9.6 NO THIRD PARTY BENEFICIARY. This Agreement is intended solely for the benefit of the Parties hereto and nothing contained herein shall be construed to create any duty to, or standard of care with reference to, or any liability to, or any benefit for, any Person not a Party to this Agreement.

9.7 SUCCESSORS; ASSIGNS; ASSIGNMENT.

This Agreement shall inure to the benefit of and shall be binding upon the Parties and their respective successors and assigns. This Agreement shall not be assigned or transferred by either Party without the prior written consent of the other Party.

9.8 HOLD HARMLESS AGREEMENT To the fullest extent not prohibited by law, APP Developer shall indemnify and hold harmless the CITY, its directors, officers, agents, and employees from and against all claims, damages, losses and expenses (including but not limited to attorneys' fees) for bodily injury and or property damage arising by reason of any act or failure to act, negligent or otherwise, of APP DEVELOPER or any subcontractor (meaning anyone, including but not limited to consultants having a contract with APP DEVELOPER or any subcontractor for part of the services), of anyone directly or indirectly employed by APP DEVELOPER or by any subcontractor, or of anyone for whose acts APP DEVELOPER or its subcontractor may be liable, in connection with the development or use of the APPs. This provision does not, however, require APP DEVELOPER to indemnify, hold harmless or defend the CITY from the CITY's own negligence.

9.9 GOVERNING LAW

This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable. The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri, or the United States Western District of Missouri. The Parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens.

9.10 NATURE OF CITY'S OBLIGATIONS. All obligations of the City under this Agreement, which require the expenditure of funds, are conditional upon the availability of funds budgeted and appropriated for that purpose.

9.11 ENTIRE AGREEMENT

This writing embodies the entire Agreement and understanding between the Parties hereto. There are no other agreements and understandings, oral or written, with reference to the subject matter herein between the Parties.

IN WITNESS WHEREOF, the Parties have executed this Agreement the day and year first above written.

CITY OF COLUMBIA, MISSOURI

By: \_\_\_\_\_  
Mike Matthes, City Manager

ATTEST:

\_\_\_\_\_  
Sheela Amin, City Clerk

APPROVED AS TO FORM:

\_\_\_\_\_  
Nancy Thompson, City Counselor

I hereby certify that the above expenditure is within the purpose of the appropriation to which it is charged, Account No. 553-6110-660.49-90, and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor.

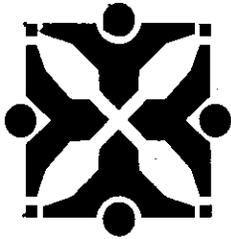
\_\_\_\_\_  
John Blattel, Director of Finance

APP Developer

By: \_\_\_\_\_

ATTEST:

\_\_\_\_\_



Source: Public Works

Agenda Item No:

To: City Council  
From: City Manager and Staff

Council Meeting Date: Aug 19, 2013

Re: Agreements with DoubleMap, Inc for Automatic Vehicle Location (AVL) Services and Equipment, and with QuarkWorks, LLC for Custom Application Development

**EXECUTIVE SUMMARY:**

Staff has prepared for Council consideration a resolution authorizing the City Manager to execute an agreement with DoubleMap, Inc for AVL services and equipment for Transit buses, and a Professional Services agreement with Quark Works, LLC for custom application development which will display transit bus location data using the AVL system.

**DISCUSSION:**

DoubleMap, Inc is a company that was selected through a competitive process that met city, state and federal requirements. The agreement includes purchase and installation of automatic passenger counters, auto-annunciators, LED interior bus signs, intelligent display signs, safety pre-trip system, turn-key ParaTransit scheduling software, AVL equipment and related software and equipment. All equipment will interface with the previously installed AVL software and equipment covered under a contract already in place using the same RFP process. The agreement with DoubleMap is for a not-to-exceed amount of \$683,244, and is 80% funded by Federal Transportation Administration (FTA), and 20% by local Transportation Sales Tax funds.

The agreement with QuarkWorks, LLC is for development of custom iPhone and Android apps which will display bus location data from the AVL system. This agreement is for a not to exceed amount of \$31,000, and funding will come from the Annual Transit project account.

**FISCAL IMPACT:**

The agreement with DoubleMap is for a not-to-exceed amount of \$683,244, with 80% funding by an FTA State of Good Repair Grant, and 20% by local Transportation Sales Tax funds, already appropriated to this project.

The agreement with QuarkWorks is for a not-to-exceed amount of \$31,000, with funds being transferred from the Annual Transit project account.

**VISION IMPACT:**

<http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php>

An efficient, innovative, accessible public and human services transportation system will be fully integrated with all other forms of transportation in Columbia and surrounding communities. It will be possible for all residents to live easily in Columbia without a vehicle.

**SUGGESTED COUNCIL ACTIONS:**

Approval of the resolution authorizing the City Manager to execute agreements with DoubleMap, Inc and QuarkWorks, LLC.

FISCAL and VISION NOTES:					
City Fiscal Impact Enter all that apply		Program Impact		Mandates	
City's current net FY cost	\$0.00	New Program/ Agency?	No	Federal or State mandated?	No
Amount of funds already appropriated	\$867,967.00	Duplicates/Expands an existing program?	Yes	<b>Vision Implementation impact</b>	
Amount of budget amendment needed	\$0.00	Fiscal impact on any local political subdivision?	No	Enter all that apply: Refer to Web site	
Estimated 2 year net costs:		Resources Required		Vision Impact?	Yes
One Time	\$167,648.80	Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	13.4
Operating/ Ongoing	\$0.00	Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	
		Requires add'l capital equipment?	No	Fiscal year implementation Task #	