

RESOLUTION NO. \_\_\_\_\_

A RESOLUTION AUTHORIZING THE ADMINISTRATOR FOR THE DEPARTMENT OF TRANSPORTATION TO ENTER INTO AN AGREEMENT WITH CAMBRIDGE SYSTEMATICS, INC. RELATIVE TO CONTRACT NO. T-14-022 FOR THE DEVELOPMENT OF THE COMMUTER RAIL TRANSIT STUDY AND IMPLEMENTATION PLAN, WITH THE CITY'S PORTION IN THE AMOUNT OF TWO HUNDRED NINETY THOUSAND DOLLARS (\$290,000.00), FOR A TOTAL AMOUNT OF SIX HUNDRED NINETY THOUSAND DOLLARS (\$690,000.00).

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BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, it is hereby authorizing the Administrator for the Department of Transportation to enter into an agreement with Cambridge Systematics, Inc. relative to Contract No. T-14-022 for the development of the Commuter Rail Transit Study and Implementation Plan, with the City's portion in the amount of \$290,000.00, for a total amount of \$690,000.00.

This resolution relates to Resolution No. 27843 and the 2014 TIGER 6 grant.

ADOPTED: \_\_\_\_\_, 2015

/mem

# City of Chattanooga



## Resolution/Ordinance Request Form

Date Prepared: 4/24/2015

Preparer: Bill Cannon

Department: Transportation

Brief Description of Purpose for Resolution/Ordinance: \_\_\_\_\_ Res./Ord. # \_\_\_\_\_ Council District # \_\_\_\_\_

A resolution authorizing the City of Chattanooga Department of Transportation to enter into a agreement relative to Contract No. T-14-022 with Cambridge Systematics, Inc. for the development of the Commuter Rail Transit Study and Implementation Plan in the amount of \$690,000.00 as related to the 2014 TIGER VI Grant - Resolution # 27843

Name of Vendor/Contractor/Grant, etc.	<u>Cambridge Systematics Inc.</u>	New Contract/Project? (Yes or No)	<u>YES</u>
Total project cost \$	<u>690,000.00</u>	Funds Budgeted? (YES or NO)	<u>No</u>
Total City of Chattanooga Portion \$	<u>290,000.00</u>	Provide Fund	_____
City Amount Funded \$	<u>0.00</u>	Provide Cost Center	_____
New City Funding Required \$	<u>290,000.00</u>	Proposed Funding Source if not budgeted	_____
City's Match Percentage %	<u>42%</u>	Grant Period (if applicable)	<u>2/20/14 - 6/10/16</u>

### List all other funding sources and amount for each contributor.

<u>Amount(s)</u>	<u>Grantor(s)</u>
<u>\$400,000.00</u>	<u>USDOT / FEDERAL TRANSIT ADMINISTRATION</u>
<u>\$</u>	_____
<u>\$</u>	_____

Agency Grant Number - TN-79-1000

CFDA Number if known - 20.933

Other comments: (Include contingency amount, contractor, and other information useful in preparing resolution)

Approved by: \_\_\_\_\_

DESIGNATED OFFICIAL/ADMINISTRATOR

Reviewed by: FINANCE OFFICE

Please submit completed form to @budget, City Attorney and City Finance Officer

Revised: October, 2011

RESOLUTION NO. 27843

A RESOLUTION AUTHORIZING THE MAYOR TO APPLY FOR, AND IF AWARDED, A TIGER 6 DISCRETIONARY GRANT RELATIVE TO THE LIGHT RAIL AND TRANSIT ORIENTED DEVELOPMENT (TOD) PLANNING PROJECT, FOR AN AMOUNT UP TO FOUR HUNDRED THOUSAND DOLLARS (\$400,000.00), WITH THE CITY MATCHING FUNDS OF THREE HUNDRED THOUSAND DOLLARS (\$300,000.00) THROUGH LOCAL AND/OR OTHER GRANT FUNDS, FOR A TOTAL AMOUNT OF SEVEN HUNDRED THOUSAND DOLLARS (\$700,000.00).

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BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CHATTANOOGA, TENNESSEE, That the Mayor is hereby authorized to apply for, and if awarded, a TIGER 6 Discretionary Grant relative to the Light Rail and Transit Oriented Development (TOD) Planning Project, for an amount up to \$400,000.00, with the City matching funds of \$300,000.00 through local and/or other grant funds, for a total amount of \$700,000.00.

ADOPTED: April 22, 2014

/mem

**PROFESSIONAL SERVICES AGREEMENT**

**BETWEEN**

**CITY OF CHATTANOOGA AND CAMBRIDGE SYSTEMATICS, INC.**

This Professional Services Agreement is made between the City of Chattanooga (“City”) and Cambridge Systematics, Inc. (“Consultant”), a professional corporation located in Atlanta, Georgia,

WHEREAS, the City desires to engage Consultant to perform certain services relating to the preparation of the Commuter Rail Implementation Study (a Federally Funded - TIGER Grant, and FTA administered project from the Federal side, and CARTA administered from the Local Government side); and

NOW, THEREFORE, in consideration of the mutual covenants and conditions hereinafter provided, City and Consultant agree as follows.

**A. SCOPE OF AGREEMENT.**

Consultant's relationship to the City shall be that of independent contractor; at all times this relationship shall be governed by and be in strict compliance with the terms of this Professional Services Agreement (“the Agreement”) and the laws of the State of Tennessee and the codes of the City of Chattanooga.

**B. PROFESSIONAL SERVICES.**

Consultant shall furnish services to the City as set forth in "Exhibit A: Commuter Rail Implementation Study RFQ – “Scope of Work and Services" which is attached hereto and incorporated herein by reference.

**C. DELIVERABLES AND SCHEDULE.**

Consultant shall begin its services promptly after receipt of an executed copy of this Agreement and shall complete the services and deliverables on or prior to May 18, 2016. To the extent feasible, the schedule will follow the schedule set forth in Exhibit "B" which is attached hereto and incorporated by reference. Times for performance shall be extended for periods of delay resulting from circumstances over which Consultant has no control.

**D. CONTRACT TERM.**

This Agreement shall be effective upon its full execution by the appropriate officials shown on the signature of this document. The parties acknowledge that the Consultant shall provide services pursuant to this Agreement for the period commencing on May 18, 2015 and ending May 18, 2016. The City shall have no obligation for services rendered by the Consultant which are not performed within the specified period.

## **E. STANDARD TERMS AND CONDITIONS.**

1. The City is not bound by this Agreement until it is approved by the Chattanooga City Council and executed by the appropriate officials as indicated on the signature page of this Agreement; This Agreement may be modified only by written amendment, which has been executed and approved by the appropriate parties as indicated on the signature of this Agreement;
2. Either party may terminate the Agreement by giving at least fourteen (14) days written notice to the other party before the effective termination date. The Consultant shall be entitled to receive equitable compensation for satisfactory completion of services as of the termination date authorization;
3. If the Consultant fails to properly perform any obligation under this Agreement or violates any terms of this Agreement, the City shall have the right to immediately terminate the Agreement and withhold payments in excess of fair compensation for completed services. The Consultant shall not be relieved of liability to the City for damages sustained by virtue of any breach of this Agreement by the Consultant;
4. The Consultant shall not assign this Agreement without obtaining prior written approval of the City. Any changes or additional subcontractor relationships or assignment not identified in "Exhibit A: Commuter Rail Implementation Study RFQ – “Scope of Work and Services”, as part of this Agreement, must first be approved in writing by the City;
5. Prior to engaging the services of any subcontractors to provide any portion of the services to be provided hereunder, the Consultant will seek prior written approval from the City. If the City approves such subcontractors, the Agreement shall contain, at a minimum, paragraphs E.6, E.7, E.8, and G.
6. No person on the grounds of handicap, age, race, color, religion, sex, national origin, or any other classification protected by federal and/or Tennessee State constitutional and/or statutory law shall be excluded from participation in, or be denied benefit of, or be otherwise subjected to discrimination in the performance of this Agreement. The Consultant, shall, upon request, show proof of such non-discrimination, and shall post in conspicuous places, available to all employees and applicants, notices of non-discrimination;
7. The Consultant is assumed to be familiar with and observe and comply with all provisions as identified in the original RFQ and all federal, state, and local laws, ordinances, and regulations in any manner affecting the conduct of the work and those instructions and prohibitive orders issued by any agency of the federal, state or local government. The Consultant shall observe and comply with those laws, ordinances, regulations, instructions, and orders in effect during the term of this Agreement; and

8. Upon not less than seven days written notice, Consultant may suspend the performance of its services if the City fails to pay Consultant in full within 60 days of a receipt of a complete invoice for services rendered or expenses incurred. Consultant shall have no liability because of such suspension of services or termination due to the City's nonpayment.

#### **F. CLIENT RESPONSIBILITIES.**

The City agrees to provide Consultant with all available information, plans, regulations, reports, professional recommendations and any other related items requested by Consultant in order to provide its professional services. Consultant may rely on the accuracy and completeness of these items. The City agrees to provide the items and to render decisions in a timely manner so as not to delay the orderly and sequential progress of Consultant's services.

#### **G. CONFLICT OF INTEREST.**

Consultant agrees that it has no interest and shall acquire no interest, direct or indirect, that would conflict in any manner with the performance of the services under this agreement. Consultant further agrees that, in the performance of this Agreement, no person having any such interest shall be employed.

#### **H. AUDIT PROVISION.**

The term "Consultant" is used interchangeably to describe signatories to contracts, grants, and agreements with the City and applies to reflect the relationship with the City (Consultant, Licensee, Supplier, Vendor, Consultant, Grant Recipient, etc.).

1. The City or its assign may audit all financial and related records (including digital) associated with the terms of the contract or agreement including timesheets, reimbursable out of pocket expenses, materials, goods, and equipment claimed by the Consultant. The City may further audit any Consultant records to conduct performance audits (to identify waste and abuse or to determine efficiency and effectiveness of the contract or agreement) or to identify conflicts of interest;
2. The Consultant shall at all times during the term of the Agreement and for a period of five years after the end of the Agreement, keep and maintain records of the work performed pursuant to this Agreement. This shall include proper records of quotations, contracts, correspondence, invoices, vouchers, timesheets, and other documents that support actions taken by the Consultant. Documents shall be maintained by the Consultant necessary to clearly reflect all work and actions taken. All such records shall be maintained in accordance with generally accepted accounting principles. The Consultant, shall at its own expense, make such records available for inspection and audit (including copies and extracts of records as required) by the City at all reasonable times and without prior notice;

3. The obligations of this Section shall be explicitly included in any subcontracts or agreements formed between the Consultant and any Sub-Consultants or suppliers of goods or services to the extent that those subcontracts or agreements relate to fulfillment of the Consultant's obligations to the City;
4. Costs of any audits conducted under the authority of this section and not addressed elsewhere will be borne by the City unless the audit identifies significant findings that would benefit the City. The Consultant shall reimburse the City for the total costs of an audit that identifies significant findings that would benefit the City; and
5. This Section shall not be construed to limit, revoke, or abridge any other rights, powers, or obligations relating to audit which the City may have by Federal, State, or Municipal law, whether those rights, powers, or obligations are express or implied.

## **I. INSURANCE.**

1. At no additional cost to the City, Consultant will procure and maintain for the duration of this Agreement insurance of the types and in the amounts described below against claims for injuries to persons or damages to property which may arise from or in connection with the performance of this Agreement by Consultant, its agents, representatives, employees, volunteers, or subcontractors.

- a. **PROFESSIONAL LIABILITY INSURANCE**

Consultant shall maintain in full force and effect through the term of this Contract professional liability insurance coverage appropriate to the Consultant's profession of not less than One Million Dollars (\$1,000,000.00) for each claim and \$1,000,000.00 policy aggregate limit.

- b. **ADDITIONAL INSURANCE REQUIREMENTS.**

Consultant shall include the City as additional insured on all business and property insurance. Proof of said insurance shall be provided to the City's Risk Manager.

Consultant shall:

- (1) Prior to commencement of services, furnish City with original certificates of insurance and any amendatory endorsements effecting coverage required by this Section, and provide that such insurance will not be cancelled, allowed to expire, or be materially reduced in coverage except on thirty (30) days' prior written notice to the City Attorney and Risk Manager of City;
- (2) If requested by City, provide certified copies of endorsements and policies in lieu of or in addition to certificates of insurance;
- (3) Replace certificates, policies and endorsements for any such insurance expiring prior to completion of services;

- (4) Maintain such insurance from the time services commence until services are satisfactorily completed, and note that failure to maintain or renew coverage or to provide evidence of renewal may be treated by City as a breach of contract;
- (5) Place such insurance with an insurer that is licensed to do business in Tennessee and has an A.M. Best Company rating of no less than AV; and
- (6) Require all subcontractors to maintain during the terms of this Agreement, Commercial General Liability insurance, Business Automobile Liability insurance and Workers' Compensation/Employers' Liability insurance (unless subcontractor's employees are covered by Consultant's insurance) in the same manner as specified for Consultant, and furnish subcontractor's certificates of insurance to City prior to the commencement of work.

Furthermore, any deductibles or self-insured retentions must be declared to and approved by City.

#### **J. INDEMNIFICATION.**

Consultant agrees to protect, defend, indemnify, and hold City and its officers, employees, and agents free and harmless from and against any and all losses, penalties, damages, injuries, settlements, costs, charges, professional fees or other expenses or liabilities of every kind and character arising out of or relating to any and all claims, liens, demands, obligations, actions, proceedings or causes of action of every kind and character in connection with the performance of the services provided by Consultant, its agents, servants, employees or subcontractors, or anyone directly employed by any of them for his acts any of them may be liable. This indemnification shall survive the expiration or sooner termination of this Contract.

#### **K. MEDIATION.**

The City and Consultant agree to mediate claims or disputes arising out of or relating to this Agreement before initiating litigation. The mediation shall be conducted by a mediation service acceptable to both parties. A party shall make a demand for mediation within a reasonable time after a claim or dispute arises, and the parties agree to mediate in good faith. In no event shall any demand for mediation be made after such claim or dispute would be barred by applicable law. Mediation fees shall be shared equally.

#### **L. OWNERSHIP OF DOCUMENTS.**

The City and CARTA shall be the sole owners of all documents prepared under this Agreement; however, Consultant shall have the right to use examples of such work for marketing purposes, and to modify such work for other clients. All documents prepared in the performance of this Agreement shall be delivered to the City and CARTA before final payment is made to Consultant.

### **M. CHANGE OF WORK.**

In the event the City should decide during the course of this work that there exists the need to change any work performed by the Consultant under this Agreement after same element of work has been approved by the City, the City shall notify the Consultant, in writing, to make the change, and the Consultant shall make the change as directed. Payment therefore is to be made by the City after a written agreement is entered into between the City and the Consultant providing for appropriate adjustment in the compensation ceiling(s) inclusive of appropriate adjustment in the Consultant's lump sum net fee(s), which amounts shall be as negotiated.

### **N. COMPENSATION AND HOURLY RATES.**

For services provided by Consultant as described in Exhibit "A," the City shall compensate Consultant each month based upon Exhibit "C" the Rate Schedule and the sum of hours complete for each task as set out in Exhibit "B", including reasonable travel expenses. Invoices provided by Consultant must contain enough information to document monthly activities for services rendered. A maximum, not-to-exceed fee (including expenses) of \$690,000.00 has been set. Invoices shall be submitted to the City monthly. Payment of each invoice is due to Consultant within 60 days of receipt of a complete invoice by the City. The Consultant's records and backup data on all items of cost entering into the billings for the professional services rendered under this Agreement are subject to audit by local, state or federal representatives and copies thereof shall be furnished, if requested, as required under by this Agreement.

1. The Consultant must report to the City all firm names and amounts paid to subcontractors that are certified by the state as Disadvantaged Business Enterprises (DBE).
2. The Consultant shall also report all firm names and amounts paid to subcontractors that are Woman-Owned Business Enterprises (WBE) or Minority-Owned Business Enterprises (MBE) not certified by the state as a DBE.
3. Payments on all subsequent supplemental agreements shall also be reported in this same manner. The Consultant shall keep records on the basis of generally accepted accounting practice of costs and expenses per the laws and codes of the City of Chattanooga, and which records shall be available for inspection at all reasonable times.

### **O. FINAL SETTLEMENT.**

Final settlement shall be made by the City to the Consultant within ninety (90) days following the completion and approval of all the Consultant's work as set out by Exhibit "A" and mutual approval of any post-work audit report.

**P. ABANDONMENT OF PROJECT.**

In the event the City decides to abandon all or any part of any project subsequent to the effectuation of this Agreement, the Consultant shall be paid under Paragraph M, by the City for all work completed prior to its having received written notice from the City to stop work and an appropriate negotiated amount agreed upon for net fee.

**Q. AMENDMENTS.**

This Agreement is the entire and integrated agreement between the City and Consultant and supersedes all prior negotiations, statements or agreements, either written or oral. No amendments or modifications of this Agreement shall be valid unless in writing and signed by each of the parties to the Agreement.

**R. SEVERABILITY.**

Any provision in this Agreement that is prohibited or unenforceable under state or federal law shall be ineffective to the extent of such prohibitions or unenforceability, without invalidating the remaining provisions hereof. Also, the non-enforcement of any provision by either party to this Agreement shall not constitute a waiver of that provision nor shall it affect the enforceability of that provision or the remainder of this Agreement.

**S. VENUE AND CONTROLLING LAW.**

Any dispute of the terms of this agreement shall be construed under the laws of the State of Tennessee. Any litigation of any dispute under this agreement not resolved by voluntary mediation shall occur in the Hamilton County or Federal Courts located in the State of Tennessee.

**T. MISCELLANEOUS.**

1. This Agreement shall be binding upon and shall inure to the benefit of Consultant and City and to their respective successors and assigns.
2. This Agreement may be executed in two or more counterparts, each of which shall be deemed to be an original and all of which counterparts together shall constitute but one and the same instrument.

IN WITNESS WHEREOF, the City of Chattanooga has caused this agreement to be signed by Blythe Bailey Administrator of Transportation, and the Consultant has executed said agreement through its duly authorized officer as of the effective date first above written, Section I.

THE CITY OF CHATTANOOGA

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

BLYTHE BAILEY, Administrator of  
Transportation

Date: \_\_\_\_\_

CAMBRIDGE SYSTEMATICS, INC.

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

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

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

Date: \_\_\_\_\_

Approved as to form and legality:

CITY OF CHATTANOOGA, TENNESSEE  
OFFICE OF THE CITY ATTORNEY

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

Printed Name / Title: \_\_\_\_\_

100 E. 11th Street, Suite 200

Chattanooga, TN 37402

(423) 643-8250

Date: \_\_\_\_\_

Attachment - Exhibit A: Passenger Rail Implementation Study - Scope of Work and Services,  
Exhibit B: Schedule and Exhibit C: Compensation and Rate Schedule and Consultant Team  
Composition

## **EXHIBIT A**

### **PASSENGER RAIL IMPLEMENTATION STUDY**

#### **SCOPE OF WORK AND SERVICES**

##### **PROJECT DESCRIPTION**

The purpose of this project is to develop an implementation plan for using and supplementing the existing freight rail infrastructure for a passenger rail transit system that will incorporate existing and proposed tracks, tunnels, and bridges. The existing freight rail infrastructure is located in the heart of Chattanooga, near neighborhoods, large employment centers, and the Chattanooga Municipal Airport. The study will also explore the feasibility of restoring passenger rail to Chattanooga in combination with intracity passenger rail. Connection to neighboring cities like Atlanta and Nashville with passenger rail service, in coordination with federal and neighboring cities' passenger rail plans will be analyzed and evaluated. With close collaboration with rail cargo providers, the study will also analyze existing rail infrastructure capacity interior and exterior to the city of existing need and future growth.

##### **SCOPE OF SERVICES**

**The Consultant Team shall perform the following tasks to develop the implementation plan discussed in the Project Description above.**

#### **1 TASK 1. Establish Goals and Objectives, Purpose and Need**

##### **1.1 Review of Past/Ongoing Relevant Studies**

Work with the City and partner agencies s to identify all relevant recent and on-going studies that may have an impact on the rail implementation plan; conduct a review and provide summary findings of studies to include but not limited to:

- a. Multimodal Transportation Center Study
- b. Development of Form-Based Code
- c. Downtown Chattanooga Study
- d. Chattanooga – Hamilton County RPA 2040 Regional Transportation Plan
- e. Complete Streets Policy
- f. Amended Final Participation Plan
- g. Housing Affordability and Vacancy
- h. Travel Demand Model Peer Review
- i. On Board Transit Survey
- j. 2035 LRTP Complete Streets Section
- k. Mass Transit Alternatives

##### **1.2 Develop Acceptable FTA Evaluation Structure**

- a. Create Evaluation Structure as per FTA guidance for fixed guideway transit studies that supports comparing and contrasting alternatives and their ability to meet the stated purpose and need/goals and objectives. The evaluation criteria will include a mix of quantitative and

qualitative measures as appropriate for the level of detail of the analysis. Focus on measures that address community visions and concerns as documented in project goals and objectives (see below).

- b. Develop project goals and objectives that will be reflected in the project evaluation structure including the following categories:
  - Quality of Life associated with an attractive transportation mode alternative to travel in the central and east core areas, as well as walkable areas that typically develop around stations;
  - Sustainability associated with electric train travel rather than gasoline-powered private automobiles, resulting in cleaner air and accrued health benefits from walking to/from transit;
  - Economic Competitiveness strengthened by improved job access via transit;
  - Safety Enhancements through reduced automobile vehicle miles traveled and reduced congestion;
  - State-of-Good-Repair Benefits due to the improvement of existing, but underutilized, freight rail infrastructure.

## **2 TASK 2. Public Involvement**

The public engagement process will tap into the interest that exists in improving transportation in the region. Utilizing proven techniques for reaching the public, we will provide an understanding of how passenger rail could provide a needed transportation alternative for many segments of the population and advance the economic development potential of the region and surrounding communities.

### **2.1 Community Outreach**

Outreach will focus on the following target audiences and tasks:

- a. Initial Elected Officials Briefings – including Mayor and County Commissioners to uncover their concerns and issues, and to get recommendations of key stakeholders who need to be involved in the process
- b. Business Community Engagement - to gauge interest and support, identify feasibility challenges and gain insight into the travel markets, includes working with the Tennessee Valley Rail Museum and with the City to identify a list of businesses along the corridor and set up stakeholder meetings to discuss the goals of the project, the potential alignment, and potential implementation phases
- c. Fire, Police and Safety Personnel - to provide important insight on how routes affect neighborhoods and safety response
- d. Preparation of Outreach Materials – including printed and electronic media and Spanish language

- e. Public Meetings – to be coordinated where possible with otherwise scheduled meetings and events
- f. Website and social media – including links to City and other local agency websites

## **2.2 Stakeholder Committee Support**

- a. Identify and contact stakeholders and prepare for and facilitate regular meetings
- b. Engage Right of Way and Property Owners Near Transit Stops
- c. Environmental Justice Plan and Outreach to Traditionally Underserved Communities

## **2.3 Coordination with FTA/FRA/TDOT/CARTA**

Conduct regular project update meetings with Federal and local agencies to ensure planning efforts are coordinated with ongoing and future planning efforts, and consistent with guidance and requirements.

## **2.4 Coordination with Norfolk Southern, CSX & Hamilton County Rail Authority**

Conduct proactive outreach and engagement with railroads and conduct regular project update meetings to ensure review of efforts, and consistency with railroad plans and requirements.

# **3 TASK 3. Regional Planning Coordination**

## **3.1 Coordination with Planning Agencies**

Conduct ongoing and regular coordination and update meetings with local planning agencies including:

- a. City of Chattanooga,
- b. Hamilton County,
- c. CHCRPA,
- d. Airport,
- e. Enterprise South business stakeholders

# **4 TASK 4. Existing Conditions / Infrastructure Assessment**

## **4.1 Assess Rail Infrastructure Existing Conditions**

- a. Railroad right of way, track, sidings and switching
- b. Horizontal and vertical geometry and clearances
- c. Bridges, culverts
- d. Power supply
- e. Utilities

## **4.2 Assess Rail Systems Existing Conditions**

Conduct an assessment of existing conditions for rail systems in the study area to include:

- a. At-grade crossing safety systems
- b. Signal systems

## **4.3 Identify Rail Vehicle Alternatives**

Conduct research into potential rail vehicle options for implementation in Chattanooga to include the following:

- a. Light Rail Transit (LRT)
- b. Streetcar
- c. Commuter Rail; Intracity Rail
- d. Electric and alternative power systems

## **4.4 Recommend Vehicle & Systems**

Vehicles and systems preferences will be based on analysis of physical dimensions, operating characteristics, capital and operating costs, interoperability with freight rail and other factors.

# **5 TASK 5. Define Premium Transit Alternatives**

## **5.1 Design Route Alignments & Technologies**

Develop up to four conceptual-level alternative alignments for passenger rail service between downtown, the airport and Enterprise South utilizing existing aerial photography, topographic maps, and geometry data. Potential typical sections shall be created and potential obstacles shall be identified. The potential alignment to be provided shall not include design and identification of vertical profile items; however, a due diligence for potential fatal-flaw profile issues will be identified.

## **5.2 Conduct Station Area Planning**

Conduct planning analysis including stakeholder and public outreach to obtain insights on issues and transit oriented development opportunities and to begin to identify potential station locations. Prepare base maps containing aeriels and planimetric maps and station area profiles including such information as demographics, land use, existing multi-modal facilities, environmental constraints and key origins and destinations. Summarize the results and provide high level recommendations on station opportunities. Develop concept/bubble diagrams for each station area and a SWOT summary and present findings in a project meeting/workshop.

## **5.3 Develop Operating Plans**

Develop operating plans for the concept alternatives as described above, to address frequency by time of day, span of service and assumed operating speeds and schedules.

#### **5.4 Travel Forecasting/Ridership Projections**

Provide an analysis of demand for the rail transit system alternatives to consist of summarizing population, employment, traffic conditions, and ridership on intersecting CARTA routes.

#### **5.5 Greenways, transit and bike integration**

Identify opportunities for transit (bus), pedestrian, bicycle and greenway connections for all station areas, consistent with design standards set forth for connecting streets and trails/greenways in the City's recently adopted Complete Streets ordinance and reflected in the National Association of City Transportation (NACTO) Urban Street Design Guide, NACTO Urban Bikeway Guide and Institute of Transportation Engineers (ITE) Designing Walkable Urban Thoroughfares Manual.

#### **5.6 Freight rail interactions**

Identify and quantify all existing and future freight rail operations (including rights to operate in future) potentially affecting the 23-mile corridor including consideration of FRA safety regulations to identify potential for using specific trackage options.

#### **5.7 Estimate Capital Costs**

Provide estimated order-of-magnitude capital cost estimates for the conceptual-level alternatives, including infrastructure requirements associated with implementing the rail transit system. The order-of-magnitude costs shall be limited to track infrastructure, electrification, signalization, maintenance and storage facility (M&SF) requirements, and rolling stock equipment. The cost estimates will not include an estimate for right-of-way acquisition

#### **5.8 Operations and Maintenance (O&M) Costs**

Operating costs will be estimated at an order of magnitude level utilizing parameters established for each alternative, likely using a three point cost model (based on peak vehicles, revenue miles, and revenue hours). Estimates will be based on the current cost factors experienced by the service boards taking into account experience in other cities that operate light rail, streetcar and commuter rail. Costs also will be developed for maintenance of right-of-way and stations based on local experience and that of other cities.

### **6 TASK 6. Evaluation of Alternatives**

#### **6.1 Economic and Market Assessment**

Conduct a comprehensive analysis of the trends, issues and opportunities, as well as the market potential for various types of real estate development, focusing on major product types and any interrelationships they will have with existing and planned transportation infrastructure and services. Compile and analyze market data through an examination of current databases and records as well as through field inspections conducted by the team. Trends in vacancy rates, rental rates, and absorption will be obtained and analyzed. Additionally, key growth indicators will be analyzed including population, employment, household income, household growth, age of householders, business expansions, and relationships of business.

Identify key industries and examine current trends for historically strong industries and emerging sectors. This information will be applied to historical and current supply and demand figures and growth rates in the markets for residential, retail, office, and industrial space. Emerging trends in regional retail, office, residential, and industrial centers will also be explored. The goal of this task will be to identify those development types that have the most potential for success based on local market conditions and trends. Market and demographic information will then be woven back into the construct of the larger study to determine interrelationships with transportation planning and economic development opportunities.

Examine accessibility from the prospective of both residents and businesses. Accessibility will be examined by completing traffic skims using the regional travel demand model. For residents, we will examine the access to jobs by major occupation categories for those living in the study area. Next, we will examine access to labor force for businesses. This will be accomplished by identifying the employment hubs in the study area and accessing labor force population within likely commute thresholds.

## **6.2 Transportation impacts**

Identify traffic conditions based on transit/auto interface in the project area that could impact safety, service reliability, travel times, access, and capital and operating costs. Capacity analysis will be performed for those locations by projecting existing conditions to the appropriate project design year, defining the operational impacts of the transit alternative on roadway capacity. Mitigation measures will be recommended as a result of the analysis. In addition to measures to address capacity, the team will develop recommendations for changes in traffic operations that may be necessary for safe operation of the transit alternatives.

## **6.3 Alternatives Refinement and Recommendations**

Based on the findings of the impacts analysis, the team will make recommendations for refinement of the initial project alternatives, to develop improved options and address negative impacts. A trade-off analysis will identify issues with the highest degree of local community concern and result in ranking of alternatives.

# **7 TASK 7. Promote Economic Development Opportunities**

## **7.1 Land Use/Transit Oriented Development Analysis**

- a. Quantify development potential in station areas and create development plans at neighborhood rail stations and multimodal centers. Using information from prior tasks, including station area planning and travel market analysis, identify specific locations for stations along the candidate alignment(s). Once the stations have been identified, develop station area plans.
- b. Quantify transit oriented development potential using CommunityViz, a GIS-based land use modeling tool that is the basis for the RPA's current regional land use model. Compare and contrast conditions both with proposed stations and station area development in place and without (Status Quo). For example, the analysis could demonstrate increases in employment and housing, how many residents have access to employment centers via premium transit,

reduction in development footprint attributed to more compact development, etc. The purpose of this effort is to quantify the development impacts of transit in the corridor and to determine the resulting share of projected regional growth. Based on the results of this effort, station area plans may be revised through an iterative process.

- c. To illustrate the development potential of each station area, develop up to eight massing models (proposed conditions only). Create one illustrative rendering for each station (up to eight). Submit a draft set of station area plans for review and comment. Address comments received and submit a final draft version.
- d. Prepare a high-level health impact analysis to determine the benefit to surrounding communities. This analysis could include walk and bike potential as well as increased access to healthy food.
- e. Develop a set of TOD design guidelines to support the station area plans. The guidelines are intended to form the basis for the ultimate implementation of a form-based code. Meet with the CITY to develop a draft set of form-based districts and development types. The set of draft form-based districts, in conjunction with the identified development types, will address:
  - Lot size and coverage
  - Front, rear, side and parking setback area
  - Required street frontage
  - Height
  - Ground story and upper story transparency
  - Entrances and walls
- f. Other standards that will be addressed include open space and landscape requirements, parking regulations, and street standards. This task does not include the preparation of a regulating plan for each station area or the drafting of applicable regulatory text (zoning or subdivision) to implement the guidelines.

## **7.2 Complete Streets**

- a. Identify key origins and destinations within walking and cycling distance of each station to use as a basis for the development of a multi-modal network that could include sidewalks and enhanced streetscape, bicycle lanes, shared facilities, cycle tracks and/or separate multi-use trails. Prepare a map with a conceptual multi-modal network and table of projects for each station area. This task will result in a robust set of multi-modal connections within station areas to take advantage of their propensity to generate walk and bike trips and a set of guidelines for their design.
- b. Develop a conceptual plan for a new linear, regional park along the right-of-way of the proposed rail alignment, building on the precedent of similar projects in the US. The plan will identify key connections along the proposed alignment, including Warner Park, Montague Park and federal park facilities and employment centers. The plan will include a map of the conceptual alignment and typical section illustrations.

- c. Develop “complete streets” design guidelines for multi-modal connections. The guidelines will be consistent with the City’s recently adopted Complete Streets ordinance and reflect the NACTO Urban Street Design Guide, NACTO Urban Bikeway Guide and ITE Designing Walkable Urban Thoroughfares Manual. The design guidelines will include illustrative typical sections as well as policy guidance on items such as target speed, appropriate facility types and curb radii.

### **7.3 Economic Impact Analysis**

Conduct two sub-phases of economic impact analysis: conduct an assessment of the “Business as Usual” (BAU) alternative using base case as a “pilot” study for refining the standard methodology and assumptions for conducting the economic impact analysis; in addition to the BAU case, the Consultant will analyze up to three alternatives. The economic impact analysis will be conducted using the following steps:

- a. Develop list of potential economic levers to assess and draft methodology for assessing the base case. The Consultant will develop and document the methodology, data sources, and key assumptions in a draft technical memorandum for distribution to the project coordination committee based on the potential economic levers compiled from previous work tasks. Categories of benefits might include transit and highway user benefits, societal benefits including air quality and safety, land development impacts, state of good repair, market connectivity benefits, and labor access benefits. Additional benefits and economic levers may be identified by the study team and project advisory committee.
- b. Finalize methodology based on project advisory committee input. The Consultant will facilitate a meeting of the project committee to review the methodology, address concerns and issues, and solicit input into key assumptions.
- c. Conduct analysis of the BAU alternative. Following agreement by the project coordination committee, the Consultant will implement the research design developed in Step 2 for the BAU alternative. This includes estimating both benefit cost ratios and economic impacts using a regional economic impact modeling system for modeling of the broader impacts.
- d. Conduct analysis of the alternatives. Upon approval from the project sponsor, the Consultant will conduct the benefit cost and economic impact assessment of up to three alternatives.

## **8 TASK 8. Identify Funding Strategies**

### **8.1 Capital funds**

Conduct an analysis of available Federal, state and local funds for capital assets including operating way, stations, systems and vehicles. Develop an evaluation matrix to identify preferences for funding capital elements of recommended project.

## **8.2 Operating funds**

Conduct an analysis of available Federal, state and local funds for ongoing operations costs including rail service, maintenance of operating way, stations, and systems. Develop an evaluation matrix to identify preferences for funding operations of recommended project.

## **9 TASK 9. Conduct Desktop Environmental Analysis**

Conduct an environmental inventory and screening in the corridor. This subtask is not intended to support a NEPA environmental analysis; rather it has been designed to gain a better understanding of potential environmental issues for the purpose of identifying and evaluating alternatives. The screening will address the following components:

- a. Socioeconomic: review census data, consult with local governments, conduct field review, identify Environmental Justice Populations, areas that may involve displacements
- b. Cultural Resources: conduct a records check of National Register files at Tennessee Historical Commission and at Tennessee Division of Archaeology
- c. Visual and Aesthetic Conditions: identify areas with high quality views, visually sensitive receptors
- d. Parks and Recreational Resources: conduct a records check, coordinate with local government
- e. Farmland: review aerial photography, conduct field review Natural Environment: conduct a records check, coordinate with US Fish and Wildlife Service
- f. Air Quality: coordinate with MPO on air quality status
- g. Noise and Vibration: identify areas of potential sensitive receptors along the route
- h. Hazardous Materials: obtain an EDR records search, check local, state and federal records

## **10 TASK 10. Implementation Plan**

### **10.1 Phased segment implementation**

Identify potential segments for phased project implementation consistent with projected funding availability. Identify minimum operating segment (MOS) and associated stations, maintenance and storage facility and power delivery systems.

### **10.2 Schedule**

Prepare realistic implementation scenarios for the preferred rail project(s) identified in the analysis. Determine implementation timeframes that provide reasonable time for the environmental process, funding applications, interlocal agreements, design, construction, testing and startup. Develop implementation schedules to graphically illustrate the necessary milestones and the relationships between activities.

### **10.3 Operating agreements**

Identify and define operating agreements with railroads necessary for operating passenger service along the project corridor, to address safety, access to right-of-way, maintenance of track, systems and at-grade crossings.

### **10.4 Project report**

Develop a comprehensive set of project task memoranda and a final report fully illustrated with maps graphics and tables, including executive summary suitable for elected official and public circulation.

## **EXHIBIT B**

### **PASSENGER RAIL IMPLEMENTATION STUDY**

#### **PRELIMINARY SCHEDULE**

The following schedule represents a preliminary projection of anticipated dates for performing the major tasks that are identified in Exhibit A, Scope of Work and Services. Specific dates for stakeholder and public meetings and for project deliverables will be developed with the CITY during Task 1. It is expected that the schedule and dates will be adjusted throughout the duration of the project to accommodate holidays, stakeholder and Advisory Committee availability, Consultant travel logistics, and other circumstances and conditions that arise. It is anticipated that the project will be completed well within a one-year timeframe, on or before May 18, 2016.

<b>TASK</b>	<b>PROJECTED DATES</b>
1 Establish Goals and Objectives, Purpose and Need	May 18, 2015 - June 5, 2015
2 Public Involvement	May 30, 2015 – May 18, 2016
3 Regional Planning	May 18, 2015 – May 18, 2016
4 Existing Conditions / Infrastructure Assessment	June 15, 2015 – August 31, 2015
5 Define Premium Transit Alternatives	July 6, 2015 – August 28, 2015
6 Evaluation of Alternatives	September 7, 2015 – March 11, 2016
7 Promote Economic Development Opportunities	May 18, 2015 – May 18, 2016
8 Identify Funding Strategies	January 4, 2016 – February 19, 2016
9 Conduct Desktop Environmental Analysis	January 25, 2016 – April 8, 2016
10 Implementation Plan	March 7, 2016 – May 18, 2016

**EXHIBIT C**

**PASSENGER RAIL IMPLEMENTATION STUDY**

**COMPENSATION AND RATE SCHEDULE AND CONSULTANT TEAM COMPOSITION**

The following fee schedule is an approximate projection of labor costs and expenses that will be incurred by the Consultant for the major tasks identified in Exhibit A, Scope of Work and Services. During the course of the project, actual labor costs will be billed as outlined in Exhibit C, Rate Schedule and expenses may vary slightly from this projection, with some tasks involving larger fee expenditures and others requiring less. Regardless of these variations and adjustments in task fee expenditures and Rate Schedule, the total not-to-exceed fee shall be as stipulated in Item N of the Professional Services Agreement and per the total fee amount identified below.

Task	%	Budget Estimate (\$000)
1 Establish Goals and Objectives, Purpose and Need	4.3%	\$ 30
2 Public Involvement	12.3%	\$ 85
3 Regional Planning	3.6%	\$ 25
4 Existing Conditions / Infrastructure Assessment	5.8%	\$ 40
5 Define Premium Transit Alternatives	20.3%	\$ 140
6 Evaluation of Alternatives	14.5%	\$ 100
7 Promote Economic Development Opportunities	17.4%	\$ 120
8 Identify Funding Strategies	2.9%	\$ 20
9 Conduct Desktop Environmental Analysis	10.1%	\$ 70
10 Implementation Plan	9.0%	\$60
	100%	\$ 690

Total Labor Fees \$690,000.00

**TOTAL NOT-TO-EXCEED FEE \$690,000.00**

## CONSULTANT TEAM COMPOSITION

The Consultant Team for this project consists of the consulting firms listed below. As Prime Consultant, Cambridge Systematics Inc., will keep records of all costs and expenses paid to the Sub-consultants for the performance of their services as described in their respective Professional Services Agreements with Cambridge Systematics Inc. Sub-consultant fees are included in the above total Not-to-Exceed Fee.

Prime Consultant: Cambridge Systematics Inc., Atlanta, GA

Sub-consultant:	Gresham Smith & Partners;	Nashville, TN
Sub-consultant:	Kimley –Horn & Associates, Inc.;	Charlotte, NC
Sub-consultant:	Younger Associates, LLC;	Jackson, TN

## RATE SCHEDULE - ALL CHARGES INCLUDING PROFIT

### Hourly Rate Schedule - Rail Implementation Plan

Cambridge Systematics	
Senior Economist	\$ 370
Project Manager	\$ 280
Senior Transportation Analyst	\$ 250
Senior Planner	\$ 220
Deputy Project Manager	\$ 205
Planner	\$ 165
Transportation Analyst	\$ 150
Junior Analyst	\$ 125
Production	\$ 115
Kimley Horn	
Project Manager/Senior Transit Engineer	\$ 260
Principal Transit Planner	\$ 260
Senior Railroad Engineer	\$ 260
Senior Civil Engineer	\$ 190
Senior Transit Engineer	\$ 190
Civil Engineer	\$ 130
Transit Engineer	\$ 130
Transit Planner	\$ 125
Junior Planner	\$ 110
Junior Engineer	\$ 110
Senior Designer/CAD	\$ 120
CAD	\$ 90

Senior Accounting	\$	145
Clerical	\$	85

**Gresham Smith & Partners**

Principal In Charge	\$	250
Senior Planner	\$	170
Senior Landscape Architect	\$	160
Senior Engineer	\$	170
Planner	\$	90
Landscape Architect	\$	85
Engineer	\$	100
GIS Specialist	\$	110
Graphics/Production	\$	75

**Younger & Associates**

Senior Public Involvement Director	\$	150
Economic Analyst	\$	150
Director of Market Research	\$	100
Public Engagement Specialist	\$	75
Administrative/Technical Support	\$	48