

**PROFESSIONAL SERVICES CONTRACT WITH PARSONS BRINCKERHOFF
(PB) FOR THE DEVELOPMENT OF THE REGIONAL FREIGHT PLAN**

This contract is made and entered into as of the _____ day of _____ 2015, by the City of Durham (“City”) and Parsons Brinckerhoff, Inc. (PB) (“Consultant”), a professional corporation organized and existing under the laws of the State of New York and registered to do business in North Carolina.

Sec. 1. Background and Purpose. The purpose of the project is to develop a Regional Freight Plan for the Triangle. The City of Durham, on behalf of the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHCMPO) is seeking consultant services to develop a Regional Freight Plan for the Triangle region. The proposed study is jointly funded by the Capital Area Metropolitan Planning Organization (CAMPO), Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHCMPO) and the North Carolina Department of Transportation (NCDOT). This partnership recognizes the importance and need for these agencies to jointly address freight issues in the region. The purpose of the plan is threefold:

- To conduct a comprehensive regional study of freight, goods movement, and services mobility needs;
- To develop a framework to proactively address freight and goods movement mobility needs and challenges in our region; and
- To examine all modes of a freight transportation system with emphasis on trucks, rail and air cargo and to develop freight recommendations for the 2045 joint Metropolitan Transportation Plan.

It is envisioned that the proposed plan will guide freight investments in a manner that supports the region’s goals for safety, social equity, economic productivity, sustainability, and livable communities. The project team will include the staff from the aforementioned stakeholders and funding partners and will also include the consultant team project manager, other consultant team members, and other regional staff chosen for their subject-matter expertise.

The update of the Regional Freight Plan will be a cooperative effort among partners and the Consultant will perform all technical and other analyses necessary to complete the scope of work.

Sec. 2. Services and Scope to be Performed; Time of Performance. The Consultant shall provide professional services as specifically described in Exhibit A which includes a description of the project scope and Ten (10) Tasks. Exhibit A, “Scope of Services” is attached hereto and incorporated in this Contract. In this contract, “Work” means the services that the Consultant is required to perform pursuant to this contract and all of the Consultant’s duties to the City that arise out of this contract. The Work shall be completed within sixteen (16) months of initiation of the Work (issuance of Notice-to-Proceed), on approximately the time schedule shown in Exhibit B, Estimated Schedule. The Transportation Planning Manager may extend this time period by up to six months, in writing, at his discretion. Any contract extension (for time only) beyond six months

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from initiation of the Work (Notice-to-Proceed) must be approved in writing by the City Manager.

Sec. 3. Time is of the Essence. Schedule. City and Consultant recognize that time is of the essence of this Contract and the City will suffer financial loss and the public will suffer loss or be inconvenienced if the work is not completed within on or before June 30, 2016 and in accordance with the estimated schedule outline in Exhibit B, "Estimated Schedule"

Sec. 4. Complete Work without Extra Cost. Except to the extent otherwise specifically stated in this contract, the Contractor shall obtain and provide, without additional cost to the City, all labor, materials, equipment, transportation, facilities, services, permits, and licenses necessary to perform the Work.

Sec. 5. Compensation. The City's payment for the Work shall not exceed \$399,994. The City shall pay the Consultant for the Work as follows: Payment shall be for completion of the tasks performed and for a maximum amount for certain reimbursable expenses, all as shown in Exhibit C. Payment for tasks performed and associated expenses shall not exceed the amounts for completion of such tasks shown on Exhibit C unless the tasks are modified as described hereafter. Modifications that alter the tasks by redistributing the amount of work, and/or compensation for such work, within or amongst the tasks or subtasks may be made in writing by the Transportation Planning Manager, if the change in compensation does not exceed 15% for any particular task. Such changes may not increase the total compensation under the Contract, or generally reduce the amount of Work to be performed. Modifications that alter compensation for any task by more than 15% shall only be made through written authorization by the City Manager and a contract amendment to be approved by the parties, which amendment may be made on behalf of the City by the City Manager. The City shall not be obligated to pay the Consultant any payments, fees, expenses, or compensation other than those authorized by this section and shown in Exhibit C.

Sec. 6. Consultant's Billings to City. The Consultant shall send invoices to the City monthly or when each Task is completed, pursuant to this contract. Each invoice shall document, to the reasonable satisfaction of the City, such information as may be reasonably requested by the City. At a minimum each invoice shall include a progress report and document the nature of the work performed, the number of hours spent, the particular task to which the labor or expense is attributed, the total amount of compensation claimed for that task since the inception of the contract, a summary table showing amount invoiced and percent complete by task. Within thirty days after the City receives an invoice, the City shall send the Consultant a check in payment for all undisputed amounts contained in the invoice that have been billed in accordance with this Contract. Payment shall not be deemed acceptance of the work for purposes of the City's determination as to whether the Work is of acceptable quality. Notwithstanding any other provision of this contract, the City may withhold an amount consisting of 10 per cent of the value assigned for a particular task until the deliverables associated with each such task have been completed, and, in addition, an amount consisting of 5 percent of the

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not-to-exceed figure in the contract until all Work has been performed and completed under the contract to the satisfaction of the City.

Sec. 7. Prompt Payment to Subcontractors.

(a) Within 7 days of receipt by the Contractor of each payment from the City under this contract, the Contractor shall pay all Subcontractors (which term includes subconsultants and suppliers) based on work completed or service provided under the subcontract. Should any payment to the Subcontractor be delayed by more than 7 days after receipt of payment by the Contractor from the City under this contract, the Contractor shall pay the Subcontractor interest, beginning on the 8th day, at the rate of 1% per month or fraction thereof on such unpaid balance as may be due. By appropriate litigation, Subcontractors shall have the right to enforce this subsection (a) directly against the Contractor, but not against the City of Durham.

(b) If the individual assigned to administer this contract for the City (in this section, titled “Prompt Payment to Subcontractors,” he or she will be referred to as the “Project Manager”) determines that it is appropriate to enforce subsection (a) in this manner, the City may withhold from progress or final payments to the Contractor the sums estimated by the Project Manager to be (i) the amount of interest due to the Subcontractor under subsection (a), and/or (ii) the amounts past-due under subsection (a) to the Subcontractor but not exceeding 5% of the payment(s) due from the City to the Contractor.

This subsection (b) does not limit any other rights to withhold payments that the City may have.

(c) Nothing in this section (titled “Prompt Payment to Subcontractors”) shall prevent the Contractor at the time of invoicing, application, and certification to the City from withholding invoicing, application, and certification to the City for payment to the Subcontractor for unsatisfactory job progress; defective goods, services, or construction not remedied; disputed work; third-party claims filed or reasonable evidence that such a claim will be filed; failure of the subcontractor to make timely payments for labor, equipment, and materials; damage to the Contractor or another subcontractor; reasonable evidence that the subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed 10%.

(d) The Project Manager may require, as a prerequisite to making progress or final payments, that the Contractor provide statements from any Subcontractors designated by the Project Manager regarding the status of their accounts with the Contractor. The statements shall be in such format as the Project Manager reasonably requires, including notarization if so specified.

Sec. 8. Insurance.

Contractor agrees to maintain, on a primary basis and at its sole expense, at all times during the life of this Contract the following coverage’s and limits. The requirements

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contained herein, as well as City's review or acceptance of insurance maintained by Contractor is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by Contractor under this Contract.

Professional Liability Insurance - CONSULTANT shall also provide and maintain Professional Liability Insurance coverage to protect CITY from liability arising out of the performance of professional services, if any, under this Agreement and Supplemental Agreements. Such coverage shall be in the sum of not less than Three Million Dollars (\$3,000,000). Prior written approval of the CITY shall be required if CONSULTANT maintains a deductible greater than \$50,000

Commercial General Liability – CONSULTANT shall maintain commercial general liability insurance covering premises/operations, products/completed operations, broad form property damage, contractual liability, independent contractors (if any), and XCU coverage (explosion, collapse, and underground) if any apply to the work of this contract. Coverage shall be maintained with an insurance company authorized to do business in North Carolina and satisfactory to CITY. Such insurance shall provide, at a minimum, combined single limits of \$3,000,000. The City of Durham, North Carolina, its officers, employees, and elected officials shall be named as additional insured. The additional insured coverage must be evidenced by either an original of the endorsement to affect the coverage, or, if blanket coverage is provided, then the agent shall indicate the form number in the proper section of the certificate of insurance.

Automobile Liability – Limits of no less than \$1,000,000 Combined Single Limit. Coverage shall include liability for Owned, Non-Owned and Hired automobiles. In the event Contractor does not own automobiles, Contractor agrees to maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Auto Liability policy. Automobile coverage is only necessary if vehicles are used in the provision of services under this Contract and/or are brought on a City of Durham site.

Worker's Compensation & Employers Liability – Contractor agrees to maintain Worker's Compensation Insurance in accordance with North Carolina General Statute Chapter 97 and with limits of no less than \$500,000 each accident, each employee and policy limit. This policy must include a Waiver of Subrogation

Additional Insured – Contractor agrees to endorse the City as an Additional Insured on the Commercial General Liability. The Additional Insured shall read 'City of Durham as its interest may appear'.

Certificate of Insurance – Contractor agrees to provide City of Durham a Certificate of Insurance evidencing that all coverages, limits and endorsements required herein are maintained and in full force and effect, and Certificates of Insurance shall provide a minimum thirty (30) day endeavor to notify, when available, by Contractor's insurer. If Contractor receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Contractor agrees to notify the City within five

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(5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. The Certificate Holder address should read:

City of Durham
Attn: Felix Nwoko
Transportation Department
101 City Hall Plaza
Durham, NC 27701

Umbrella or Excess Liability – Contractor may satisfy the minimum liability limits required above under an Umbrella or Excess Liability policy. There is no minimum Per Occurrence limit of liability under the Umbrella or Excess Liability, however, the Annual Aggregate limits shall not be less than the highest ‘Each Occurrence’ limit for required policies. Contractor agrees to endorse City of Durham as an ‘Additional Insured’ on the Umbrella or Excess Liability, unless the Certificate of Insurance states the Umbrella or Excess Liability provides coverage on a ‘Follow-Form’ basis.

All insurance companies must be authorized to do business in North Carolina and be acceptable to the City of Durham

Sec. 9. Performance of Work by City. If the Consultant fails to perform the Work in accordance with the Schedule Hours By Task, included as Exhibit B, or to a quality expected by the City, the City may, in its discretion, in order to bring the project closer to the schedule, perform or cause to be performed some or all of the Work, and doing so shall not waive any of the City’s rights and remedies. Before doing so, the City shall give the Consultant notice of its intention. The Consultant shall reimburse the City for additional costs incurred by the City in exercising its right to perform or cause to be performed some or all of the Work pursuant to this section.

Sec. 10. Exhibits. The following exhibits are made a part of this contract:

Exhibit A Scope of Services containing 31 page(s).

Exhibit B Estimated Schedule containing 5 page.

Exhibit C Schedule of Fees and Charges containing 2 page

In case of conflict between an exhibit and the text of this contract excluding the exhibit, the text of this contract shall control.

Sec. 11. Termination for Convenience (“TFC”). (a) *Procedure.* Without limiting any party’s right to terminate for breach, the City may, without cause, and in its discretion, terminate this contract for convenience by giving the Consultant written notice that refers to this section. TFC shall be effective at the time indicated in the notice. The City Manager may terminate under this section without City Council action. (b) *Obligations.* Upon TFC, all obligations that are still executory on both sides are discharged except that

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any right based on prior breach or performance survives, and the indemnification provisions and the section of this contract titled Trade Secrets and Confidentiality shall remain in force. At the time of TFC or as soon afterwards as is practical, the Consultant shall give the City all Work, including partly completed Work. In case of TFC, the Consultant shall follow the City's instructions as to which subcontracts to terminate. (c) *Payment.* Within 20 days after TFC, the City shall pay the Consultant a one hundred dollar TFC fee and for all Work performed except to the extent previously paid for. The City shall pay the part of the total cost for each Task that reflects the percentage of completion attained for that Task. The Consultant shall not be entitled to any payment except as stated in this section because of TFC, whether on the basis of overhead, profit, damages, other economic loss, or otherwise. With regard to Work performed through subcontracts, the City shall pay the Consultant an equitable amount for work completed by sub-consultants, but such payment shall not include profit for the Consultant.

Sec. 12. Notice. (a) All notices and other communications required or permitted by this contract shall be in writing and shall be given either by personal delivery, fax, or certified United States mail, return receipt requested, addressed as follows:

To the City:

Felix Nwoko, Transportation Planning Manager
Transportation Department
City of Durham
101 City Hall Plaza
Durham, NC 27701
The fax number is (919) 560-4561.
Email: felix.nwoko@durhamnc.gov

To the Consultant:

Mushtaqur Rahman, PHD, PE
Parson Brinckerhoff, Inc. (PB)
434 Fayetteville Street, Suite 1500
Raleigh, NC 27601
The fax number is 919-836-4099
Phone: 919-836-4054
Email: rahmanmus@pbworld.com

(b) Change of Address. Date Notice Deemed Given. A change of address, fax number, or person to receive notice may be made by either party by notice given to the other party. Any notice or other communication under this contract shall be deemed given at the time of actual delivery, if it is personally delivered or sent by fax. If the notice or other communication is sent by United States mail, it shall be deemed given upon the third calendar day following the day on which such notice or other communication is deposited with the United States Postal Service or upon actual delivery, whichever first occurs.

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Sec. 13. Trade Secrets and Confidentiality. The request for proposals section titled “Trade Secrets and Confidentiality” shall apply to any Trade Secrets disclosed to the City during the process leading to the parties’ entering into this Contract (including all of the Consultant’s responses to the RFP), except as prohibited by North Carolina law. This section shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Consultant under this contract. The word “Proposer” used in that section shall mean the “Consultant.”

Sec. 14. Indemnification. (a) To the maximum extent allowed by law, the Consultant shall defend, indemnify, and save harmless Indemnitees from and against all Charges that arise in any manner from, in connection with, or out of this contract either as a result of negligent acts, errors or omissions of the Consultant or sub-consultants, and their employees, or agents. In performing its duties under this subsection “a,” the Consultant shall at its sole expense defend Indemnitees with legal counsel reasonably acceptable to City. (b) Definitions. As used in subsections “a” above and “c” below -- “Charges” means claims, judgments, costs, damages, losses, demands, liabilities, duties, obligations, fines, penalties, royalties, settlements, and expenses (included without limitation within “Charges” are (1) interest and reasonable attorneys' fees assessed as part of any such item, and (2) amounts for alleged violations of sedimentation pollution, erosion control, pollution, or other environmental laws, regulations, ordinances, rules, or orders -- including but not limited to any such alleged violation that arises out of the handling, transportation, deposit, or delivery of the items that are the subject of this contract). “Indemnitees” means City and its officers, officials, independent Consultants, agents, and employees, excluding the Consultant (c) Other Provisions Separate. Nothing in this section shall affect any warranties in favor of the City that are otherwise provided in or arise out of this contract. This section is in addition to and shall be construed separately from any other indemnification provisions that may be in this contract. However, any additional limitations on liability that may be described in Section 13 below shall apply. (d) Survival. This section shall remain in force despite termination of this contract (whether by expiration of the term or otherwise) and termination of the services of the Consultant under this contract. (e) Limitations of the Consultant's Obligation. If this section is in, or is in connection with, a contract relative to the design, planning, construction, alteration, repair or maintenance of a building, structure, highway, road, appurtenance or appliance, including moving, demolition and excavating connected therewith, then subsection “a” above shall not require the Consultant to indemnify or hold harmless Indemnitees against liability for damages arising out of bodily injury to persons or damage to property proximately caused by or resulting from the negligence, in whole or in part, of Indemnitees.

Sec. 15. Professional Standards

In performing its professional services, CONSULTANT will use that degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of its profession.

Sec 16: Ownership of Regional Freight Plan and Work Products

The Triangle Regional Freight Plan and associated work products, programs and graphic, including any incomplete work, shall be owned by the City, CAMPO and NCDOT

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Parsons Brinckerhoff (PB) shall be responsible for taking all steps necessary to provide such Work and incomplete Work to the City in such form as the City requests.

Sec. 17. Miscellaneous

(a) Choice of Law and Forum. This contract shall be deemed made in Durham County, North Carolina. This contract shall be governed by and construed in accordance with the law of North Carolina. The exclusive forum and venue for all actions arising out of this contract shall be the North Carolina General Court of Justice, in Durham County. Such actions shall neither be commenced in nor removed to federal court. This section shall not apply to subsequent actions to enforce a judgment entered in actions heard pursuant to this section.

(b) Waiver. No action or failure to act by the City shall constitute a waiver of any of its rights or remedies that arise out of this contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

(c) Performance of Government Functions. Nothing contained in this contract shall be deemed or construed so as to in any way stop, limit, or impair the City from exercising or performing any regulatory, policing, legislative, governmental, or other powers or functions.

(d) Severability. If any provision of this contract shall be unenforceable, the remainder of this contract shall be enforceable to the extent permitted by law.

(e) Assignment, Successors and Assigns. Without the City's written consent, the Consultant shall not assign (which includes to delegate) any of its rights (including the right to payment) or duties that arise out of this contract. The City Manager may consent to an assignment without action by the City Council. Unless the City otherwise agrees in writing, the Consultant and all assignees shall be subject to all of the City's defenses and shall be liable for all of the Consultant's duties that arise out of this contract and all of the City's claims that arise out of this contract. Without granting the Consultant the right to assign, it is agreed that the duties of the Consultant that arise out of this contract shall be binding upon it and its heirs, personal representatives, successors, and assigns.

(f) Compliance with Law. In performing all of the Work, the Consultant shall comply with all applicable law.

(g) City Policy. THE CITY OPPOSES DISCRIMINATION ON THE BASIS OF RACE AND SEX AND URGES ALL OF ITS CONSULTANTS TO PROVIDE A FAIR OPPORTUNITY FOR MINORITIES AND WOMEN TO PARTICIPATE IN THEIR WORK FORCE AND AS SUBCONSULTANTS AND VENDORS UNDER CITY CONTRACTS.

(h) [omitted]

(i) SDBE. The Consultant shall comply with all applicable provisions of Chapter 26 of the Durham City Code (Equal Business Opportunities Ordinance), as amended from time to time. The failure of the Consultant to comply with that chapter shall be a material breach of contract which may result in the rescission or termination of this contract and/or other appropriate remedies in accordance with the provisions of that chapter, this contract, and State law. The Participation Plan submitted in accordance with that chapter is binding on the Consultant. Section 26-10(f) of that chapter provides, in part, "If the

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City Manager determines that the Consultant has failed to comply with the provisions of the Contract, the City Manager shall notify the Consultant in writing of the deficiencies. The Consultant shall have 14 days, or such time as specified in the Contract, to cure the deficiencies or establish that there are no deficiencies.” It is stipulated and agreed that those two quoted sentences apply only to the Consultant’s alleged violations of its obligations under Chapter 26 and not to the Consultant’s alleged violations of other obligations.

(j) No Third Party Rights Created. This contract is intended for the benefit of the City and the Consultant and not any other person.

(k) Principles of Interpretation and Definitions. In this contract, unless the context requires otherwise: (1) The singular includes the plural and the plural the singular. The pronouns “it” and “its” include the masculine and feminine. References to statutes or regulations include all statutory or regulatory provisions consolidating, amending, or replacing the statute or regulation. References to contracts and agreements shall be deemed to include all amendments to them. The words “include,” “including,” etc. mean include, including, etc. without limitation. (2) References to a “Section” or “section” shall mean a section of this contract. (3) “Contract” and “Agreement,” whether or not capitalized, refer to this instrument. (4) Titles of sections, paragraphs, and articles are for convenience only, and shall not be construed to affect the meaning of this contract. (5) “Duties” includes obligations. (6) The word “person” includes natural persons, firms, companies, associations, partnerships, trusts, corporations, governmental agencies and units, and other legal entities. (7) The word “shall” is mandatory. (8) The word “day” means calendar day.

(l) Modifications. Entire Agreement. A modification of this contract is not valid unless signed by both parties and otherwise in accordance with requirements of law. Further, except for minor modifications to the subtasks of the Work described in Section 4 above, a modification is not enforceable against the City unless the City Manager or a deputy or assistant City Manager signs it for the City. This contract contains the entire agreement between the parties pertaining to the subject matter of this contract. With respect to that subject matter, there are no promises, agreements, conditions, inducements, warranties, or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in this contract.

IN WITNESS WHEREOF, the City and the Consultant have caused this contract to be executed under seal themselves or by their respective duly authorized agents or officers.

CITY OF DURHAM
ATTEST:

City Clerk

By: _____
City Manager

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Date: _____

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

City's Finance Officer Date

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Parsons Brinckerhoff (PB).

ATTEST:

Secretary
(Affix Corporate Seal)

By: _____
Vice President

State of _____
CORPORATION

ACKNOWLEDGMENT BY

County of _____

I, a notary public in and for the aforesaid county and state, certify that
_____ Personally appeared before me this day and stated that he
or she is _____ Secretary of _____, a
corporation, and that by authority duly given and as the act of the corporation, the
forgoing contract or agreement with the City of Durham was signed in its name by its
Vice President, whose name is _____, sealed with its corporate
seal, and attested by him/herself as it said Secretary or Assistant Secretary. This the
_____ day of _____, 2015.

My Commission Expires:

Notary Pub

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EXHIBIT A : Scope of Services

See Attached

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EXHIBIT B : Estimated Schedules

See Attached

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See attached

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INTRODUCTION

About the Study

The goal of the Triangle region’s freight planning study is to develop a Phase 1 plan that can guide policy and investment to address the needs of industry and people, within over-arching regional goals for safety, equity, livability, sustainability, and economic productivity. This requires a balance between the logistics performance that helps make industry competitive – fast, reliable service delivered efficiently – and neighborhood preferences for limited interaction with freight traffic.

The purpose of this Phase 1 Triangle Freight Plan (TFP 1.0) is to establish a foundation of understanding of freight-based mobility needs across a full multimodal spectrum, to construct a framework to address and continue to address these evolving needs with recommendations for the 2045 joint Metropolitan Transportation Plan (2045 MTP), and to prepare long term capabilities to implement and adjust those recommendations. In other words, the goal of this study is to institutionalize freight planning in the region by providing initial orientation, clear processes to produce sound initiatives, core capabilities that can be enlarged over time, and recognition of important sources of change affecting users and use of the freight system.

While the *Moving Ahead for Progress in the 21st Century Act* (MAP-21) creates explicit expectations for state freight plans, those for Metropolitan Planning Organizations (MPOs) are less pronounced but not much different: plans must treat freight, they must be performance driven, and performance must be tied to national goals – such as national freight goals. Other freight-related factors that are required for MPOs are listed below:

- Support economic vitality via global competitiveness, productivity, efficiency
- Increase accessibility, mobility for freight
- Enhance integration and connectivity across and between freight modes
- Promote consistency between transportation improvements, growth and development
- Provide for participation by freight shippers and carriers

In addition to the above factors, it is expected that performance in freight must be viewed end-to-end, capturing all of the challenges throughout the length of the trip. This additional freight planning factor puts a sharp focus on the first, last, and transfer miles that most often occur in metropolitan areas.

The freight market is changing caused by shifts in supply chains and logistics. Manufacturing is returning to America with “re-shoring” or “right-shoring” trends and is expected to favor labor markets in the South. The automotive industry is regionalizing, with assembly plants and supplier bases desiring proximity. Value added services are blurring the lines between manufacturing and distribution, with sources reporting the placement of 3D printers in truck terminals to generate replacement parts for manufactured products. The rise of omnichannel retail, representing both the merging and the competition between storefront and on-line sales, is upending retail distribution. Consequently, the

EXHIBIT A: SCOPE OF SERVICES

lines are blurring between the delivery functions of on-line order fulfillment centers, traditional distribution centers, and store facilities. The pressure for next day and same day delivery is affecting where facilities locate and how many are needed, while warehouse automation is altering location economics by dramatically reducing land requirements.

A different trend is the gradual adoption of natural gas fuel by truck lines and railroads, which is a less expensive and cleaner fuel source. Finally, CSX Railroad has introduced a new hub operating model based on advanced crane technology that enables the competitive range for rail intermodal services to drop to distances as short as 550 miles and makes more lanes feasible for rail service.

These market trends bring new opportunities for economic development in the Triangle region driven by superior freight performance, with prospects for exports. It foretells new distribution facility demands and designs, locating closer to population centers, but also compatible with the smaller, more expensive properties available in such locations. This can reduce travel distances and air emissions, and allow alternative approaches to integrating logistics districts with the surrounding community.

Study Sponsors

The current Phase 1 Triangle Freight Plan study is jointly funded by the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO), Capital Area MPO (CAMPO), and the North Carolina Department of Transportation (NCDOT). The City of Durham, as the lead planning agency for the DCHC MPO, will manage the consultant contract with Parsons Brinckerhoff (PB). The study will be guided by a steering committee representing the two MPOs and the NCDOT. This steering committee is referred to in this scope as the *Client team*.

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Task 1: Project Management and Internal Review

1.1 Project Team Roster

Parsons Brinckerhoff (PB) will prepare a project team roster by listing the study participants with their phone and email contact information. This team roster is expected to include members of the Client team from Durham-Chapel Hill-Carrboro MPO (DCHC MPO), Capital Area MPO (CAMPO), and North Carolina Department of Transportation (NCDOT); key members of the consultant team; and members of the anticipated Regional Freight Stakeholders Advisory Council (RFSAC).

Deliverable(s):

- Project Team Roster (PDF file)

1.2 Project Schedule

PB will prepare a project schedule in MS Project format that shows the critical path activities. PB will regularly update the project schedule based on changes mutually agreed upon by the Client team and PB. Overall, PB will complete the study deliverables within a 16-month schedule from the Notice-to-Proceed, with work anticipated to begin in January, 2015, and concluding in April, 2016. The goal is to prepare a freight plan than can be included in the joint 2045 MTP. Client will provide the detailed MTP development schedule to PB for review and updates.

PB will update the TFP 1.0 project schedule after completion of key deliverables so that it can be used for team coordination as well as public and stakeholder communication.

Deliverable(s):

- Project Schedule with critical path (MS Project file)

1.3 Collaboration and Communication

PB will conduct the project in close coordination with the Client team and City of Durham's contract/project manager. PB will set up a *ProjectSolve* site for the study for team collaboration via a web portal. This *ProjectSolve* site will be accessible to project participants for data, documents, models, and key deliverables.

Deliverable(s):

- ProjectSolve project site with folders and access protocols

1.4 Project Management and QA/QC

The PB team will have Joe Bryan as the Project Manager (PM) and Mushtaq Rahman as the Deputy Project Manager (DPM). As a subject matter expert on freight planning, our PM will be leading and coordinating the development of project deliverables, stakeholder engagement, and technical decision making in the project. Our DPM is an experienced transportation engineer with extensive local experience, and as such will be responsible for data collection, team collaboration using the ProjectSolve site, and local agency coordination. PB will establish a standing check-in call with the City of Durham's contract/project manager, on a biweekly basis. This will correspond to internal progress calls among the team members, which will be biweekly on a formal basis, and more frequently as work elements take shape. PB will adopt a communication protocol to allow client team communications go through our PM Joe Bryan or DPM Mushtaq Rahman. PB will develop a project management and quality review plan to ensure that planning documents and estimates are reviewed and signed off by a responsible senior professional from PB, prior to submittal to the Client team.

Deliverable(s):

- Project Management and Quality Review Plan

1.5 Progress/Milestone Meetings

PB will conduct up to four face-to-face progress/milestone meetings with the Client team and/or MPO's Transportation Advisory Committees (TACs) to discuss project progress. PB will define this meeting calendar after the project kickoff meeting in discussion with the Client team. The main purposes of these meetings are to work with the Client team for sharing modeling and analysis results, discussing issues and opportunities, defining performance measures and targets, and developing consensus around policies and investment strategies.

PB will develop meeting agendas in collaboration with the Client team and prepare PowerPoint presentations and handouts for these progress/milestone meetings. PB will also prepare minutes of these meetings to document key discussion topics and planning decisions.

Deliverable(s):

- Progress/Milestones Meeting Calendar
- Meeting Agendas
- Meeting PowerPoint Presentations & Handouts
- Meeting Minutes

Task 2: Public Outreach and Stakeholder Engagement

2.1 Public Outreach Plan

PB will prepare a Public Outreach and Stakeholder Engagement Plan to define the audiences that we want to reach and the best venues for doing so. The objective is to have direct discussions of freight needs, issues, and performance requirements with the public sector agencies, industry associations, and the general public¹. The Client team will identify and reserve facilities for these public engagement activities.

Deliverable(s):

- Public Outreach and Stakeholder Engagement Plan

2.2 Public Sector Stakeholder Interviews

As part of this task, THE PB TEAM will conduct interviews of officials from the MPO member cities and towns, economic development groups, business groups like Chambers of Commerce and the North Carolina Trucking Association, and community organizations. The purpose is to obtain information, identify issues, and explore creative solutions. PB will target up to fifteen direct interviews across a spectrum of interests to create a robust picture of freight mobility conditions. PB will solicit contact lists from the MPOs and the state agencies based on other ongoing project and planning initiatives such as

¹ The engagement with the private sector such as freight shippers, carriers, and developers is included as part of Task 3.

the Statewide Rail Plan. We will confer with the Client team in making the interview selection, so that it is balanced and fruitful. PB will develop interview questions tailored to selected respondents, but generally will address mobility, performance, opportunity, and respondent concerns.

Deliverable(s):

- Stakeholder Interview List
- General Interview Questions
- Interview Summary of Issues/Opportunities

2.3 Public Sector Stakeholder Workshops

Some public sector respondents such as economic development agencies and Chambers may interact most efficiently in groups. PB will target these groups for stakeholder workshops. PB will conduct up to two workshops for this public sector stakeholder workshop engagement. The objective is to obtain information, identify issues, and explore creative solutions. PB will work with the Client team to target the right officials for these workshops to cover the full spectrum of freight modes and public groups. PB will provide briefing presentations on freight trends and prepare large maps for these workshops, so that participants can markup freight related issues and solution ideas. In addition, PB will prepare a PowerPoint presentation of the Regional Freight Plan development process.

Deliverable(s):

- Stakeholder Workshop Invitation List
- Workshop Agenda
- Workshop Briefing Presentation
- PowerPoint Presentation on Regional Freight Plan Development Process
- Workshop Summary Maps of Issues/Opportunities

2.4 Public Forums

In collaboration with the Client team and local community organizations, PB will host up to two public forums to share the direction of the Triangle region's freight plan with residents and businesses. For these public forums, PB will help prepare presentations, maps, and information flyers. It is expected that the information flyers will be widely distributed by the Client team in public venues and events as well as logistics-related employment centers to help treat the question of industry-community balance. The Client team is also expected to select and reserve venues for these public forums. PB will prefer to conduct these public forums in facilities where technology will allow us to broadcast live meetings on the web in order to reach more participants. PB will structure these public forums to efficiently gather input, discuss issues and types of solutions, hear public preferences and gauge reactions to ideas. One public forum will be scheduled at the beginning stage when we have some initial findings to share with the public. The second public forum will be scheduled towards the middle of the project to solicit comments and reactions to specific proposals and improvement concepts. PB will utilize public comments to refine freight-related land use and transportation recommendations.

Deliverable(s):

- Public Forum Agenda
- Presentation on Freight Issues
- Workshop Summary Maps of Preferences

2.5 Regional Freight Stakeholder Advisory Committee (RFSAC)

The RFSAC is one of the ways that systematic freight planning can be institutionalized. PB will work with the client team to discuss approaches to forming the RFSAC. PB will prefer to form the RFSAC early in this study because of its contribution to the effort. The valuable role the RFSAC will play in development of the plan includes provision of expert advice, the ongoing interpretation of trends, the closing of data gaps, the promotion of acceptance and backing for initiatives, and guidance in project prioritization. Membership should be representative of the geography and supply chain and logistics activity of the Triangle region. PB will prepare a stakeholder list and make recommendation to the Client team. Our experience suggests that members with operational responsibilities are more helpful than association representatives, as they have a clearer understanding of performance challenges; we have found also that private developers of logistics facilities make a good addition. Identification of members who can step forward as leaders is important, both to maintaining commitment throughout the plan and in mobilizing support as plans move later into action.

Deliverable(s):

- RFSAC Candidate List
- RFSAC Charter of Roles and Responsibilities

2.6 Freight Plan Material for Web Posting and Public Release

Presentations, project deliverables, and associated material such as announcements and hand-outs used in public meetings will be provided in website ready format so that they can be readily posted to agency websites, or to a consolidated project site on the DCHC MPO or CAMPO web site. Vetted work products, project presentations and similar material will be made available to stakeholders and the general public in the same way.

Deliverable(s):

- Study Documents for Website (in website ready PDF files)
- Study Newsletters for Website (in website ready PDF files)

Task 3: Data Collection, Inventory and Assessment

3.1 Literature Review

The PB team will use their national, state and local experience to develop a bibliography of relevant data, reports, and studies – both public and private sector-focused. This bibliography will consist of two

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elements. The first element is a matrix that categorizes existing reports not only by purpose/geography (e.g., metropolitan, regional, statewide, facility-specific) but also by focus area (e.g., data development/forecasting, modeling, land-use, funding, performance measures, economic analysis). This element will help ensure that the tools, techniques, and recommendations from this project reflect the state of the practice in metropolitan freight planning and apply the outcomes and findings of the most current state and national research efforts.

The second element of the bibliography will focus on the availability of existing freight data and the applicability of those data to meet the needs of this project. Obtaining and analyzing freight related data often presents a stumbling point for metropolitan freight planning. Our freight data needs assessment process will identify key freight analysis needs, and then evaluate the degree to which existing data can meet those needs. Data gaps are identified and new data collection methods, if required, are evaluated against needs to determine what data collection approaches meet the greatest number of needs at the lowest possible costs. This assessment will lay the groundwork for developing an ongoing freight data collection and analysis program that can support continuous freight planning efforts.

Deliverable(s):

- Bibliography summarizing a) State of the Practice in MPO Freight Planning; and b) Assessment of Freight Data Needs

3.2 Commodity Flow Data

County level, multimodal commodity flows are an essential data set for a regional freight planning effort. Data at this geography is at an appropriate level to link freight transportation to specific infrastructure and to specific industries. In addition, the industry data sets are provided at the county level. A consistent level of geography therefore allows for easier combination of the data to support planning efforts. County level commodity flows are multimodal, and include: truck, rail, air, pipeline, and water.

The PB team evaluated the option of purchasing TRANSEARCH for the current study and opted not to acquire that data set in Phase 1 primarily due to high cost involved. and . The PB team will instead use the Freight Analysis Framework (FAF3.4) as the primary data source for commodity flow information. Developed and provided by the Federal Highway Administration, FAF3 is publicly available and provides tonnage estimates by commodity type, mode, and 123 U.S. regions or FAF zones that consist of major metropolitan areas, state remainders, and 16 entire states. The primary basis for FAF3 is a 2007 survey of the shipping behavior of 100,000 U.S. manufacturers and wholesalers (i.e., the Commodity Flow Survey or CFS), supplemented by the Journal of Commerce's Port Import Export Reporting System (PIERS), the U.S. Army Corps of Engineers' Waterborne Commerce Database, and the STB's Carload Waybill Sample Public Use File for rail. The forecast incorporated into FAF version 3.4 was produced by IHS using Q2 2012 as the base period and includes projected volumes for 2040, as well as the

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intermediate years of 2015, 2020, 2025, 2030 and 2035. FAF3.4 also includes a 2012 provisional data that is synthesized from the 2007 base year data.

The PB team has developed a method to disaggregate the FAF3.4 multimodal commodity flow data from FAF zones to the county level. Using employment by industry at the county level and a series of regression equations developed for FHWA, the FAF zones corresponding to North Carolina will be disaggregated to the county level for a detailed analysis of the freight flows in the region. Because NCDOT already has a disaggregated prior version of FAF truck flows, this new disaggregation effort will be focused on the other modes; however, we will cross check all modal volumes against the 2012 Commodity Flow Survey data that are scheduled for release at the end of 2014, and we will make adjustments as called for.

Deliverable(s):

- FAF3.4 Datasets for Truck Mode, Disaggregated from FAF Zones to Triangle Regional Model Zones
- FAF3.4 Datasets for Other Modes, Disaggregated from FAF Zones to Triangle counties
- Update of disaggregated FAF3.4 modal volumes as called for, based on upcoming 2012 CFS Datasets for Truck & Other Modes (if available from FHWA by March, 2015)

3.3 Origin/Destination Surveys

Traditional origin/destination (O/D) surveys for freight planning involved stopping trucks at key locations including weigh stations, freight facilities and truck stops. However this approach has numerous notable deficiencies impacting its effectiveness including:

- Safety concerns for interviewers;
- Security concerns lead to carriers refusing to provide information or giving false information; and
- Cost.

In addition, the introduction of GPS based truck data has led to decline in need for traditional O/D surveys. For this study, the PB team will purchase Truck GPS data from third parties. The GPS data will be obtained for the primary freight corridors for the most recent 12 month period. This GPS data will be combined with truck counts, establishment data and commodity flow data to gain insights on truck trip origins and destinations. PB will also use the Truck GPS data to examine the seasonality and temporality of truck flows and identify truck delay bottlenecks.

PB will need from the MPOs and the NCDOT any available truck counts for the most recent 12 month period along the primary freight corridors. PB will also need the InfoUSA and other business data for identifying the freight related businesses along the freight corridor.

Deliverable(s):

- Truck Flow O/D Pattern

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- Truck Flow Seasonal Patterns
- Truck Flow Time of Day Patterns

3.4 On-line Survey

On-line surveys can be a cost effective way of gathering input from stakeholders. The key to on-line surveys is to keep them brief and develop a marketing plan with organizations viewed as a trusted agent such as a Chamber of Commerce, local traffic club or industry association. The PB team will develop and implement an on-line survey using the following work tasks:

- Secure survey partners to assist in disseminating and marketing survey for each stakeholder group
- Develop questionnaire in coordination with study partners
- Administer survey including initial launch and follow-up reminders
- Compile survey findings

A second, specialized on-line survey will be produced by the PB team member Tompkins International and addressed to an industry audience. Tompkins maintains a routine survey capability as part of its supply chain practice, and will tap hundreds of pre-qualified contacts with operations in North Carolina. Less geographically specific to the Triangle region, but more targeted to supply chain decision makers, this second survey will examine changes in logistics, trade patterns, facility forms, or other factors that promise to affect the nature of freight demand.

Deliverable(s):

- On-line survey with target industry groups
- Specialized survey on Supply Chain Industry Trends, Issues and Opportunities

3.5 Private Sector Stakeholder Interviews & Focus Group Meetings

Private sector involvement is critical to the success of the regional freight study, which means more than just getting someone to agree to an interview. Because of its importance, PB will ensure that we will be able to actively and effectively engage the private sector freight community by building trust, leveraging existing and establishing new relationships, and obtaining quality input not only for this effort but also for future freight planning and implementation efforts in the region. PB will conduct up to fifteen interviews with an appropriate sample based on geographic, industrial and freight role diversity to develop a comprehensive private sector perspective of existing and future freight opportunities and challenges for the Triangle region under alternative economic futures. PB will use existing relationships through the Council of Supply Chain Management Professionals and team member Tompkins International to identify appropriate contacts.

To supplement the interviews, PB will take two further actions. The first is a set of three focus group meetings with three specific groups – motor carriers, beneficial cargo owners or shippers, and economic developers and industrial real estate professionals. The focus group meetings will provide an opportunity to communicate the value of freight mobility and freight-based development, solicit input

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and feedback on freight movement opportunities and challenges and to discuss potential mitigation strategies.

In the second, PB will tap findings from the Tompkins International Supply Chain Consortium. This is a network of 400 manufacturers, retailers, distributors and third party logistics service providers who seek to improve their supply chain operations through benchmarking. They track key decision and performance factors, and changes affecting both. PB maintains a relationship with Tompkins, and through the Consortium, our team will access this unique database to accurately view changing supply chain dynamics, and segment the findings for regional developments. Information available includes facility usage, modal usage, performance requirements, sourcing and trade, decision drivers, workforce and automation, and expected changes in such elements.

Deliverable(s):

- Findings from Private Sector Stakeholder Interviews
- Findings from Focus Group Meetings with Motor Carriers, Cargo Shippers, and Developers
- Information and Insights from the Tompkins International Supply Chain Consortium

3.6 Input from Truck Drivers

Our experience with MPOs across the country has shown that while “traditional” data collection activities are a critical element of a successful freight plan, there are additional, more innovative strategies that can help MPOs more precisely pinpoint problem locations as well as encourage private sector engagement in the planning process. In this context, PB will carry out the following tasks:

- Collect real-time truck travel data— We will use the truck GPS data discussed in task 3.3. This data includes spot speed analysis, travel time, average speed and congestion analysis, estimates of relative volume and estimates of parking needs. These data will be critical in helping to “localize” freight flow information, and understand what facilities and networks are most critical to local and regional distribution.
- Identify truck “hot spots” using break room maps— PB will develop and place regional freight system maps in the break rooms of key Triangle region shipper and carrier companies to allow drivers to identify chokepoints and potential solutions.

Deliverable(s):

- Synthesis of Truck Speed and Travel Time Data
- Maps showing Truck Hot Spots

3.7 Freight Assets Database

Any effort to understand freight travel in a region requires estimates of the number, size, location, and type of truck freight producers and attractors. For numerous reasons, many “lists” of freight facilities that contain addresses and other information are frequently incomplete. And many that are complete

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do not have correct location or size information. For this reason the PB team will build a Freight Facility database using the following procedures:

- Improve the North Carolina Statewide Model (NCSTM) freight node database that was originally generated from various information sources. For the Triangle study area, there are approximately 130 known NCSTM freight nodes. Using aerial imagery and other software tools, the PB team will verify these locations.
- Fill in the missing NCSTM freight nodes. The PB team will identify and establish data for up to 260 additional facilities (prioritized by size) in the Triangle study area. The types of facilities included in this data development include distribution centers, intermodal facilities, manufacturing, and very large retail locations. The PB team will utilize aerial imagery and other readily available information to locate these facilities.
- Build connectivity to the freight network. For each of the valid and updated “freight nodes”, the team will establish a coordinate for the center of the facility and identify the appropriate access node/link on the freight network. This will allow modelers to correctly link estimated trip generation to the access point on the transportation network.
- Quick evaluation of “last mile” road network. In each of these freight clusters or large facilities, the PB team will review the likely routes to the closest interstate. Along these routes, the team will identify key railroad crossings and bridges based on aerial imagery. The identification of these bridges will include the name of the road and a coordinate representing the center of the bridge. Culverts are not included.
- All of the work above will be based on available databases at the start of the project and rely heavily on available aerial imagery and available street view images. Site visit and verification is not included.

Deliverable(s):

- An ArcGIS database of freight nodes with relevant attribute data
- An ArcGIS database of freight intensive bridges and crossings

Task 4: Develop Freight Goals, Objectives, Performance Measures & Targets

In developing vision, goals, objectives, performance measures and targets for the Triangle region’s freight plan, the PB team will incorporate four key elements into the process:

- Build off of the existing Metropolitan Transportation Plan (MTP) vision, goals, objectives, performance measures and targets that have already been established;
- Anticipation of freight vision, goals, objectives, performance measures and targets that will be used at the State and Federal level;
- Best practices for developing freight performance measures to support public sector freight planning activity;
- Practical metrics which are both useful for decision makers and readily available to collect in the Research Triangle region.

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The DCHC MPO has already developed a transportation planning goal related to improving the mobility of freight and goods movement. Both CAMPO and the DCHC MPO have embedded several freight and goods movement aspects into their broader list of goals and objectives. The PB team will examine the full set of current multimodal goals in the Triangle region and explicitly describe the relationship of freight to each goal. Then, we will develop a shortlist of freight-specific goals and objectives based on this analysis and the development of a higher vision for freight in the region as developed from working through the other elements of this task.

The PB team will also incorporate the most recent work at NCDOT and FHWA on developing a freight vision, goals, objectives, performance measures and targets, and related to this we will identify key metrics utilized in the project prioritization process at both the State and the Federal level. The PB team will ensure that the performance measures and targets used by DCHC and CAMPO regionally fold neatly within the statewide process (STI 4.0) that will be used to select projects in the next round of STIP development.

The PB team will select measures across six areas: performance, condition, safety, community and environmental impacts, and investment. The PB team will ensure that the performance measures can also serve Federal freight programs such as TIGER grants. The PB team will develop a menu of potential measures and performance indicators/metrics that will be specific to the region, consistent with state and Federal activities, and relatable to the general public, private sector freight stakeholders, and elected officials.

Deliverable(s):

- Technical Memorandum on Freight Performance Measures

Task 5: Identify Existing Trends & Conditions and Develop Existing Conditions Report

5.1 Baseline Freight Movements by Mode

The PB team will use the commodity flow data from task 3.2 to produce a commodity flow profile report with maps, tables and graphs detailing what goods are moving, how much is moving, how are they moving and where are they moving. This analysis will be conducted for the base year and the forecast year. To accomplish this, the PB team will:

- Identify the current mode of shipment into the study region;
- Identify the top origin and destination markets countries for each mode above;
- Identify the timing and potential impact of new and/or expanding services in terms of ports, rail infrastructure, highways, air centers, or other trade corridors which may affect the pattern of goods movement to, from, or through the study region including.
 - The long-term outlook for competitiveness and capacity at North Carolina and other East Coast ports.

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- New Panama Canal capacity and East Coast port expansion that could divert cargo to the East Coast.
- Rail-related developments that would impact how goods flow into, through or around the study region.
- Air cargo related developments that could change densities at gateway markets, or forwarder alliances which may change routing of direct air cargo, indirect air cargo, and ground-air cargo movements.

Deliverable(s):

- Task 5 Technical Memorandum with chapter on Freight Movements

5.2 Economic Linkages between Local Industrial Production and Global Market and Role of Freight Mobility

The PB team will develop a database of the locations, capacities, and operational characteristics of existing freight facilities using a combination of stakeholder interviews, national, statewide, and regional databases, and team knowledge. The database will include traditional freight facilities such as transload facilities and industrial parks as well as other “non-traditional” freight facilities. These facilities or establishments may not be freight, goods, or services facilities per se, but they can generate significant related activity. Examples include major attractions, convention and conference facilities, hospitals, universities and colleges, military bases, and major industrial and commercial parks.

The PB team will then identify existing and emerging industries that are driving the region’s economy and its future growth and assess the benefit of these industries to the region by quantifying the number of jobs by industry sector, occupational categories, and wage rates. This analysis will be done at the four or five-digit NAICS level so that industry patterns can be observed when comparing the current conditions to future conditions. The PB team will then develop a geographic analysis of industry clusters and their relationship to critical multimodal infrastructure elements. Special attention will be paid to exporting industries and their dependencies on global markets.

Deliverable(s):

- Task 5 Technical Memorandum with chapter on Economic Activities Linked to Freight Movement

5.3 Freight Distribution/Supply Chain Network Issues

An important component of any regional freight movement study is the understanding of local development and land use patterns, particularly as they pertain to cargo handling facilities. The success of a transportation system is often limited by the organization of a region’s land use. The PB team will use a combined approach to profiling the logistics activity within the study region. The PB team will use the stakeholder interviews, land use data, establishment data, and economic data to develop a comprehensive picture of freight-related activity throughout the region, detailing what economic activities are dependent on efficient goods movement, and what transportation infrastructure and land uses is critical to supporting that activity. In this approach, the PB team will do the following tasks:

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- Identify the key elements in the location decisions made by freight owners or their logistics services providers.
- Develop a matrix that reflects the priority of criteria related to these site selection decisions.
- Determine how cargo owners distribute their goods to users, stores, or consumers in the relevant market.
- Evaluate the role of the cargo delivery infrastructure in the context of how it adequately, or does not adequately serve the needs of cargo owners in the study area.
- Review and integrate information from the relevant comprehensive plans and providing feedback to local land use planning agencies about how their plans may positively or negatively affect regional freight mobility.
- Develop and implement a survey to collect key input on land use policies.

Using the data collected from this approach, the PB team will map the logistics processes of each of the region's major and emerging industries. The PB team will identify modal dependencies, important highway and rail links, and the interdependencies of industries within each supply chain. This has proven to be a very effective technique for demonstrating the business impacts of transportation system deficiencies on specific industries and it also is useful for prioritizing infrastructure investments to promote economic development.

Deliverable(s):

- Task 5 Technical Memorandum with chapter on Supply Chain Issues and Opportunities

5.4 Regional Freight Rail Network Conditions and Issues

The PB team will document existing rail freight traffic in terms of the number of trains per week by railroad and route and carloads originated and terminated (at the county level). Unit train and carload merchandise traffic will be distinguished, and we will identify transload terminal activity as far as the data support. Intermodal services are important to incorporate, because of their significance for highway diversion and foreign trade. Norfolk Southern serves the Triangle region from Greensboro, about 60 miles away; CSX service in the state is limited to Charlotte.

The PB team will explore operating issues and market plans through Task 3 interviews with these and other rail carriers, and potential capacity issues with current traffic and from planned initiatives will be defined and discussed. In this analysis, the PB team will review and incorporate current planning efforts by the NCDOT Rail Division, TTA and the NC Railroad Company related to the development of additional Charlotte to Raleigh state-supported Amtrak services (*Piedmont* route) and also planned commuter and light rail services that may operate within the existing freight corridors.

Deliverable(s):

- Task 5 Technical Memorandum with chapter on Freight Rail Issues and Opportunities

5.5 Freight Land Use

Freight-intensive land uses, such as agriculture, natural resources and mining, construction, warehousing, manufacturing, logistics, and port and harbor operations, can bring tremendous positive benefits to a region. Clearly, freight land uses can offer substantial economic, employment, fiscal, and other benefits to a region. Nonetheless, there are negative impacts such as air quality, noise and safety associated with freight operations, particularly when they are concentrated within an urban area.

The PB team will document current and future freight land uses focusing on freight facilities, industrial and commercial land uses. In documenting the land uses, we will identify potential freight land use conflicts such as encroachment and mitigation strategies. This analysis will build on the strategies and case studies in the FHWA's Freight and Land Use handbook and training course.

In addition to compiling regional land uses, the PB team will conduct two case studies of freight intensive areas within the region. The case studies will be selected in coordination with the study partners and will focus on critical freight intensive developments that support significant economic activity and that offer transferable lessons applicable to other regional developments. The case studies will include an inventory of key activities, freight volumes, supporting transportation infrastructure and employment. The analysis will include an assessment of community impacts and potential and existing mitigation strategies.

The PB team will need the existing and future land use data and other related parcel and street data in ArcGIS format from the two MPOs.

Deliverable(s):

- Task 5 Technical Memorandum with chapter on Land Use Assessment and Case Studies

Task 6: Determine Projected Freight Forecasts for Years 2035 and 2045

6.1 Meeting with Triangle Stakeholders to Assess Freight Modeling and Analysis Needs

Under this task the PB team will hold an in-person meeting with the Client and other Triangle Stakeholders to discuss freight analysis issues in the Triangle region and to share the state of the practice in freight modeling. The discussion on freight analysis issues will focus on freight related challenges and opportunities, systems and project planning needs related to freight, key freight markets in the region, and the types of freight related planning analysis that Triangle partners are interested in conducting. The PB team will present to Triangle stakeholders freight modeling 101 general concepts, and will also provide an overview on the state of the practice in freight modeling. The presentation will cover concepts, model types, and data needs.

In order to inform the discussion of freight modeling options at this meeting, the PB team will conduct a detailed review and assessment of the current Triangle Regional Model (TRM) freight and commercial

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vehicle (CV) submodel. The findings and recommendation from this review will be presented to Triangle Stakeholders at this meeting along with strengths, weaknesses, and opportunities for advancement.

Deliverable(s):

- Technical memorandum documenting review of the TRM freight/CV submodel
- In-person meeting and discussion
- Presentation materials

6.2 Decision Support System for Freight Analysis

To supplement the Freight Assets Database developed under Task 3.7, the PB team will select a sampling of freight nodes and will conduct phone interviews to collect information on:

1. Number of employees
2. Daily average number of trucks arriving or departing
3. Percentage of truck trips going less than 50 miles or more than 50 miles
4. Type of facility (warehouse, distribution center, factory)
5. Major commodity

Data will be collected for a minimum of 100 facilities.

The PB team will use the collected data to develop a Negative Binomial generalized linear model (GLM) to estimate the number of trucks generated by each type of facility.

The PB team will convert the database to TransCAD in order to develop a Graphical User Interface (GUI) using the TransCAD standard GISDK scripting language that interfaces the Freight Assets Database with highway assignment outputs from the Triangle Regional Model. The GUI will include application of the Triangle GLM for all freight facilities within the database with options for displaying the data in tabular or geographic format. The GUI will also include up to 3 standard reports or tables, 3 standard visualizations, and 2 spatial analysis tools. Examples of each include a report that shows the number of truck trip productions by geography, a visualization of commodities by type and scale, and a spatial analysis of key freight statistics (commodities, truck trips, etc.) within a mile of a proposed transportation project. Insights gained in Task 6.1 will inform the development of the final selected reports and tools.

Deliverable(s):

- Enhanced Freight Assets Database with supplemental data for at least 100 freight facilities (ArcGIS and TransCAD formats)
- Negative Binomial generalized linear model for estimating truck trip productions
- Customized GISDK GUI including 3 standard reports or tables, 3 standard visualizations, and 2 spatial analysis tools

6.3 Freight Forecasting Tool

For forecasting existing and future freight flows, the PB team will develop a Truck Flow Forecast Model (TFFM) based on readily available data. The PB team will work with the Client to obtain the following data elements to support model development. The Client is responsible for providing the following data:

1. Link volume counts, by time of day, for the freeways and major arterials
2. Average Weekday Traffic (AWDT) counts for as many roadway links as possible
3. Employment by traffic analysis zone
4. Truck classification counts where available
5. Weigh in motion (WIM) station data for any stations within the model area
6. InfoUSA data for major employers by industry sector and geographic location

The PB team will process all data into the input file format required by the TFFM. The PB team will then apply and calibrate the TFFM using the locally observed inputs such as link volumes, truck trip generation estimates. The PB team will estimate truck trip productions using the GLM discussed under Task 6.2. The PB team will also utilize truck trip tables from the North Carolina Statewide Transportation Model (NCSTM). The PB team will calibrate the model through adjustments to tolerance bounds and penalty functions associated with each of the observations. A base year trip truck table will be provided in csv format.

The PB team will use the calibrated TFFM to estimate future year truck flows. The Client is responsible for providing the following data, which are needed as inputs for the future year application of the model:

1. Future year employment data by industry sector and TAZ
2. Future year network traffic volumes (shape file format with daily and time period flows)

The PB team will do the following:

1. Prepare estimates of the OT (originating and terminating values) for each originating and terminating zone.
2. Prepare estimates of the LV (link volume) values based on general network- or sub-network anticipated traffic growth rates.
3. Prepare estimates of OD flows for any OD pairs for which information about future trip making patterns are known.
4. Fit a new set of freight flows to these projections while using the current year trip table as an estimate of the OD flows.

A future year trip truck table will be provided in csv format.

Deliverable(s):

EXHIBIT A: SCOPE OF SERVICES

- Technical memorandum documenting the model development and calibration process
- Base and future year truck trip tables in csv format
- TFFM executable

6.4 Freight Model Design Blueprint

Subtask 6.4A

Building upon what was learned under Task 6.1, the PB team will develop a proposed freight model design for the Triangle region that will include the identification of required and recommended data elements. The PB team will present the recommended design to the stakeholders for discussion and approval. Modifications will be discussed as needed and a final recommended design will be presented. The final recommended design will be documented in a white paper.

Deliverable(s):

- White paper documenting a freight model design for the Triangle region

Subtask 6.4B

In addition to the tasks outlined in 6.4A, the PB team will develop a detailed work plan for developing a freight model for the Triangle region. The work plan will allow for flexibility in the model design so that the region can champion implementation of the advanced freight model components at their desired rate. The work plan will outline major elements and the interaction they have with one another in a flow-chart format. The plan will include estimated hours for implementation considering two scenarios of resource allocation. One scenario will cover implementation by agency staff with the PB team support; the second scenario will cover full implementation by the PB team.

Deliverable(s):

- Freight model work plan outlining major work elements and including estimated work hours for two different resource allocation scenarios

6.5 Multi-modal Freight Forecasts for Years 2035 and 2045

The focus of this task is in developing future year (2035 and 2045) freight forecasts for rail, air, and pipeline modes, and port-related activity. The factors we will use to derive these modal forecasts come from several sources. PB will review the following socioeconomic and trade forecasts to derive these modal forecasts:

- United States Bureau of Economic Analysis (BEA);
- North Carolina Department of Commerce employment and gross state product forecast;
- Population and employment forecasts for the Triangle region;
- Local and state growth trends, such as those from the North Carolina Logistics Plan and Statewide Rail Plan; and
- National freight trends.

Deliverable(s):

- Freight Forecasts for Rail, Air, Pipeline and Marine modes

Task 7: Evaluate Future Conditions - Region's Capacity to Meet Future Demands

The Task 6 forecasts supply a foundation for examining industrial, locational, and modal demand, which respectively reflect service requirements and economic import, geographic volume and concentration, and freight system usage. The capacity implications that the PB team will examine in this Task for the most part will focus on roadway and rail as the principal handlers of traffic, but we will also treat the other modes.

7.1 Assess Future Conditions for the Highway Freight Network

The PB team's principal assessment will be of the effects of forecast truck volume on regional roadways, taking account of passenger traffic growth and level of service projections, locational shifts, and current bottlenecks. This will make use of the modeling capabilities described in Task 6, and we will incorporate testing for the effects of disruptions (such as weather events or infrastructure outages), which increasingly are risks the supply chain community is alert to. We will spell out the implications for performance measures and goals, the exposure of economically important industry, and the significance for intermodal dependence (such as restrictions on feeder routes to airports and railheads).

Approaches that may mitigate facility demand will form part of the PB team's analysis: a salient example is off-hours freight delivery. The PB team's PM Joe Bryan is overseeing federally sponsored urban pilot programs that are experimenting with this, and he has developed typologies that help clarify its potential. Also important will be anticipated changes in the service sensitivity of industry. A key example is the rise of same day and next day retail home delivery. Not only is this performance critical to the competitive fortunes of the retailers – and therefore of high concern to them – but it will turn on access to and conditions in: a) non-traditional distribution points needed for proximity; and b) neighborhoods that are not designed for freight. Our overall projections for growth in this sector will be guided by input from Tompkins, who tracks it, but specific local activity will be uncertain and effects will have to be estimated.

Deliverable(s):

- Technical Memorandum on Highway Freight Network Assessment, to serve as chapter of Future Freight Capacity Conditions Report

7.2 Assess Future Conditions for the Rail Freight Network

Based on Task 6 forecasts, the Parsons Brinckerhoff team will assess likely future freight volumes by commodity, train type and route. In light of the findings from Task 5 and the planned passenger developments identified there, the study team will assess the ability of the rail network in the Triangle

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region to accommodate additional traffic and will identify potential bottlenecks – where additional capacity may be required. Potential opportunities to divert freight from truck to rail will be identified based on current services and the realistic outlook for new ones.

Deliverable(s):

- Technical Memorandum on Rail Freight Network Assessment, to serve as chapter of Future Freight Capacity Conditions Report

7.3 Assess Future Conditions for Other Freight Modes

As part of this task, the PB team will prepare an assessment of the other freight modes:

- Air cargo, in light of volume projections, international (belly) and domestic (integrator) freight, interview and airport master plan findings in respect to capacity limitations and use of road feeder services (which transfer local cargo to outside airports), and access road conditions
- Freight headed to ports, in light of import, export, and domestic activity changes, bulk and containerized traffic volumes, and interview findings in respect to shifts in port usage
- Pipeline activity, considering new construction or conversion, competing rail usage, port involvement, and changes in resource locations – chiefly drawn from interviews, secondary sources, and USEIA analysis

Deliverable(s):

- Technical Memorandum on Other Freight Modes, to serve as chapter of Future Freight Capacity Conditions Report

7.4 Assess Future Market for Freight-Oriented Developments and Supply Chain Logistics

The PB team will review the economic outlooks for the Triangle region and identify economic development opportunities with recognition to external threats and regional competitions. The PB team will consider the following factors that could impact the Triangle region's freight related development projects:

- Timing of U.S. and global freight infrastructure developments relative to economic recovery.
- Federal government export and freight infrastructure initiatives.
- Changes in trucking regulations and fluctuating fuel prices.
- Environmental regulations and initiatives affecting freight flows.
- Emerging energy markets and their impacts on freight transportation capacity and services.
- Sourcing manufacturing at new global locations which may impact the routes used to deliver goods from global origins to local consumers.

The critical task facing the PB team is determining which of these or other trends will affect relevant freight flows for the region, and quantifying those impacts. Forecasting U.S. international trade and domestic freight flows has become more difficult due to unprecedented economic upheaval. The PB team will identify the consensus of economic forecasters provided in prior or contemporary studies as it

EXHIBIT A: SCOPE OF SERVICES

relates to the local and regional markets, the developments they may be sensitive to, and any influence on the Task 6 baseline traffic projections. This will assist in realistically anticipating where, why and how cargo oriented industrial development can take place, and most importantly, how that cargo oriented development will drive economic development and create new jobs in the Triangle region.

The PB team will need prior land use and industry specific growth data either compiled or generated as part of developing the Statewide Logistics Plan.

Deliverable(s):

- Technical Memorandum on Economic Development Opportunities, to serve as chapter of Future Freight Capacity Conditions Report

7.5 Future Freight Capacity Conditions Report

The product of this task will be a synthesis of the technical memorandums prepared as part of prior Task 7 activities. This synthesis report will describe and depict future capacity conditions, the issues they raise, and the implications for freight strategy. It will also account for the methods we use in conducting analysis, both as a record and an aid to future planning. This report will contain maps, tables and graphs, and will readily support a slide presentation of findings.

Deliverable(s):

- Future Freight Capacity Conditions Report

Task 8: Identify and Characterize Freight Corridors and Development Zones

8.1 Strategic Freight Corridors

The PB team will develop an initial list of strategic freight corridors for the Triangle region based on our work in developing the North Carolina Statewide Model (NCSTM) that has already been completed for the NCDOT's Planning Branch. The PB team will further refine the list of strategic freight corridors through a review of the North Carolina Statewide Logistics Plan. This Logistics Plan addressed the State's long term economic, mobility, and infrastructure needs. The Logistics Plan included three main components: 1) identification of priority commerce needs, 2) enumeration of transportation infrastructure actions, including multimodal solutions that will support key industries vital to the State's long term economic growth, and 3) a timetable to meet these identified needs. The action-based recommendations for investment improvements focused on seven main principles: embolden the knowledge-based economy, support existing industries, transform NCDOT into an operations-based agency, facilitate pass-through traffic, support import/export activity, partner with military investments, and support innovations in transportation infrastructure. These statewide recommendations will be factored in developing the strategic freight corridors to the extent they are relevant for the Triangle region.

Deliverable(s):

- Illustrative Map of Strategic Freight Corridors

8.2 Expansion Plans at Morehead and Wilmington Ports, RDU Airport and by the Rail Freight Carriers

North Carolina's main maritime assets are the Port of Wilmington and the Port of Morehead City. Both ports are designated by the U.S. Department of Defense as strategic seaports, capable of simultaneously handling commercial and military requirements. These two ports handle primarily dry bulk and break bulk goods. However, the Port of Wilmington also handles containerized cargo. In addition, the NC Ports operates inland terminals in Charlotte and Greensboro. Currently, over 100 companies are importing and/or exporting goods through these two NC ports because of their proximity to the Triangle region. The Port of Wilmington is primarily accessed by I-40, and it is also served by CSX. The Port of Morehead City is accessed by US 70 and also served by Norfolk Southern. In recent years, new facilities for exporting wood chips have been constructed at both Ports to enable North Carolina foresters to export to global markets. The NC Ports is also positioning to grow in military logistics and agricultural imports and exports. The PB team will review these recent trends and future export plans to quantify the impacts on the Triangle region, identify future capital improvement needs, and the modal pattern. The PB team will explore if additional rail connectivity can improve access to the NC ports and increasing demand at the ports.

Deliverable(s):

- Technical Memorandum on Impacts of Future Plans by Ports, Airport and Railroads

8.3 Freight-supportive Development Opportunity Zones

The PB team will build from the Seven Portals Study to find relevant points of interest in economic development in the Triangle region. More specifically, the PB team will review the recommended logistics village locations in the Triangle region and how they may improve efficiency and competitiveness for nearby businesses by improving logistics support. The PB team will also review the public-private partnership opportunities in the region.

The four major logistics villages have been identified for the Triangle region: Raleigh-Durham (RDU) International Airport area, Triangle North Properties, Johnston County, and Sanford-Lee County Executive Jetport area. The PB team will review these locations as starting points, and will conduct the following tasks:

- Confirm their current viability; and
- Evaluate whether additional or different areas should be added or substituted.

Among the important considerations in this are the changes in supply chain designs, including omni-channel retail and new demand for close-in cross-docks; introduction of automated distribution facilities and the new options they may allow for viable location; updated vectors of population growth and land use projections; updated profiles of industries that are favoring the region and their logistics requirements; competing uses for properties; and the availability and cost of land.

Deliverable(s):

- Technical Memorandum on Freight Development Sites

8.4 Land Use Conflict Areas

The PB team will use ArcGIS land use data sets of the Triangle region as part of this task. The PB team will obtain other data from the region’s InfoUSA and CommunityViz data sets to overlay with the core freight network and freight assets database. Our team will use these ArcGIS data layers to identify areas of land use compatibility issues related to exposure to hazardous freight movements.

Deliverable(s):

- Maps of Land Use Conflict Areas

8.5 Mitigation for Freight-induced Negative Effects and EJ Population Groups

The PB team will use the Census block level socio-economic data to overlay with other ArcGIS layers and run a buffer analysis around the core freight network to identify any environment justice population groups that might be impacted by freight movement-induced noise, emissions and safety risks. The PB team will factor in this analysis results while developing infrastructure project recommendations, freight bypass realignment concept development, or freight development opportunity site screening.

Deliverable(s):

- Maps of EJ Population Groups within the Freight Corridors Influence Area

Task 9: Develop Recommendations and Identify Implementation Strategy

Task 9 is the culminating technical task of the Plan. As such, it builds from and draws together the findings and implications of past tasks. By this point in planning, many of the broad outlines of strategy already will have emerged, and the focus typically turns to ways to make choices, assure overall goal satisfaction, and organize initiatives.

9.1 Program and Project Recommendations

The PB team will devise physical infrastructure recommendations to address significant mobility constraints, based on performance risks identified in prior tasks, the economic sectors they affect, and collateral effects on other traffic. We expect our recommendations to include the outline of a core roadway freight network for the region, which will a) incorporate through and cross-town “stem” routes for efficient navigation of the territory; b) provide access to key existing and planned freight districts, industry and intermodal connections; c) provide route alternatives to limit the effects of traffic jams and other disruptions, and a formal focus for operational management; d) help to concentrate

EXHIBIT A: SCOPE OF SERVICES

investment resources for the greatest effect, and to establish functional relationships between infrastructure projects, which can enable them to be grouped to meet P3 investment thresholds.

The PB team will apply the approach of constructing strategy packages. This approach recognizes that multiple strategies may serve a common purpose or share a common theme (stimulating economic development in a specific part of the region, for example), and a series of policies and projects may fall under them. Packaged solutions then are an effective way to recognize and organize related projects, and they allow for consistent additions in subsequent years. Strategy packages are comprised of a variety of actions, collectively addressing a strategic goal, and marshaled for a mutually reinforcing and combined effect. The PB team will construct such packages, assembling them from the best projects and policies emerging from benefit-cost and prioritization analysis (subtasks 9.4 and 9.5), and designing them cooperatively with the Client team. Packaging also lends itself to effective communication. The PB team will depict each set in a single graphic with a summary description, component operational and infrastructure actions, the goals those actions fulfill, benefits, timelines, costs, responsible agencies, relevant performance measures, and a summary of the implementation plan.

Deliverable(s):

- Program and Project Recommendations
- Implementation Packages (after subtasks 9.4 and 9.5)

9.2 Policy Recommendations

Policy initiatives potentially could include encouragement of natural gas fuel usage, treatments for residential delivery, improved access to modal alternatives, and off-hour delivery programs in some locations. They will encompass operational programs such as ITS deployment, and will stress the importance of live, proactive links to the dispatch centers of logistics service providers. The ongoing role of the RFSAC should be defined, and could extend to granting it authority over a defined, annual fund with established eligibility criteria. Finally, we will identify opportunities for the creation of revenue streams, possibly tapping the private benefits of public investments, as a way to facilitate public/private partnership (P3) investment.

Deliverable(s):

- Freight Policy Recommendations

9.3 Land Use and Economic Development Recommendations

Opportunities for freight-driven economic development and related locations to implement it will be defined in Task 8. To the extent that there are competing choices, we will clarify the strengths and weaknesses of each and urge appropriate decisions. An important tool to consider is special zoning for freight-driven districts, which helps to control the type of development that occurs and supports the efficiencies associated with freight clusters.

Deliverable(s):

EXHIBIT A: SCOPE OF SERVICES

- Land Use Recommendations

9.4 Costs and Benefits

The PB team will generate planning level cost estimates for infrastructure projects and for other initiatives (such as ITS) requiring capital outlays. The PB team will conduct cost-benefit analysis by means of the proven Parsons Brinckerhoff's PRISM tool. PRISM has been used in multiple successful TIGER applications, including for NCDOT, and is recognized by US DOT as an effective platform for the rigorous analysis the TIGER program requires. It distinguishes public and private benefits, and calculates economic impacts. The results of benefit-cost analysis will feed into the prioritization process in the next task 9.5, to shape final recommendations and inclusions in strategy packages.

Deliverable(s):

- Benefits-Costs Analysis

9.5 Implementation Prioritization for the 2040 MTP

NCDOT has developed a project prioritization process which became the Strategic Transportation Investments (STI) Law in 2013. In general, this new STI process now allows for a more transparent and data-driven process for project selection, and allocates funding based more on need-based criteria and less on equity-based criteria that existed prior to STI. The PB team will coordinate with NCDOT's STI 4.0 workgroup to ensure that the upcoming prioritization scoring methods are factored into the freight study. The PB team will prepare the strategy packages based on STI 4.0 prioritization criteria.

Deliverable(s):

- Implementation priority scores

9.6 Implementation Plan

The PB team will include a timeline for program sequencing, and definition of the agency or agencies responsible for each action. The PB team will also identify projects suitable for public-private partnership, based on their character and magnitude, benefit-cost profile, and capacity to support revenue streams.

Deliverable(s):

- Implementation plan

9.7 Freight Mobility Dashboard

The PB team will develop an illustrative map of baseline freight mobility and future performance targets. This map would be posted online to illustrate truck performance measures and truck freight information to public users on a quarterly basis. This online dashboard could display the following information:

EXHIBIT A: SCOPE OF SERVICES

- Truck freight performance measures based on truck GPS data, including truck average speeds, and the percentage of trucks traveling at congested speed thresholds.
- Truck freight volume information, such as Average Annual Daily Truck Traffic (AADTT) for the Triangle region's core truck freight system.
- General information about the core truck freight network features, including bridge weight/height restrictions and recurrent bottleneck areas based on data from the Traffic Management Centers.

Deliverable(s):

- Freight Mobility Dashboard Map

Task 10: Prepare Final Report, Executive Summary, Newsletter and Presentation

10.1 Draft Regional Freight Mobility Report

This task completes Plan development. It is focused on the structured guidance of policy and action over the years ahead, the establishment of a planning framework to help institutionalize the practice of freight planning in the region, and communication to professional, executive, and general audiences. The main body of the Report will be a record of the findings and methods of the study, based on interim deliverables but organized for cogent understanding. The Executive Summary and associated PowerPoint presentation we recommend be written so as to educate the public, legislators, and other agencies on the dynamics and importance of freight transportation to the Triangle region, and to persuade them of the value of the freight planning function, and of the specific program of action the Plan recommends. Our experience is that many constituents have little understanding of freight transportation and its economic benefits, and these communication materials should begin to change this. Lastly, the Report should demonstrate its value to the freight system user community, notably through performance management and improvement, in order to retain their long term engagement in freight planning.

The PB team will prepare the draft Report, Executive Summary, and PowerPoint presentation as outlined above, for review by the Client team. It will be highly visual in content, with maps, tables, photographs, and graphical renderings of the strategy packages. An outline for all content will be agreed on ahead of time with the Client team's project manager.

Deliverable(s):

- Draft Freight Mobility Report with Executive Summary and PowerPoint presentation deck (PDF files)

10.2 Newsletter

The PB team will prepare up to four newsletters at key milestones in the study process. The initial newsletter will be prepared and distributed at the stakeholder/public workshops, providing background information on the study, educational information regarding freight economics, planned developments, and preliminary study goals. The second newsletter will summarize the preliminary analysis results and summarize stakeholder/public feedback collected to date. Newsletters will serve to promote upcoming public meetings and will be distributed by electronic mail and in hard copy at community meetings and events. The newsletter will be posted on the project website for download and will be promoted through social media.

We propose the proactive engagement of the media in study activities to perpetuate a consistent and accurate message throughout the process. Our team has had success using Desk Side Tours—one-on-one engagement of key media contacts at strategic points in the planning process. Prior to each round of public meetings, we would visit with each key contact to provide background information and answer questions. In addition to building relationships with the media and providing details that may not be gleaned from public meetings, this provides an opportunity to promote upcoming study activities through “free media”.

Deliverable(s):

- Newsletters (PDF files)

10.3 Elected and Transportation Officials Presentations

The PB team will deliver up to three PowerPoint presentations utilizing the subtask 10.1 deck, for briefing local elected officials. They will be presented live to elected officials and other executive audiences by the PB team’s PM Joe Bryan.

Deliverable(s):

- PowerPoint Presentations

10.4 Final Regional Freight Mobility Plan Report

The results of the analyses performed in the prior tasks will be summarized in a report by the PB team. The report will include recommendations and an action plan for transportation infrastructure improvements as well as land use and policy recommendations to enhance multi-modal freight mobility and sustain economic competitiveness of the region. An executive summary will be prepared and distributed to the Client team and other governing bodies prior to meetings. This will provide decision-making officials the information they need to make informed decisions while recognizing that they might not need or have time to synthesize the technical analyses. We will present our draft recommendations to the Client team and based on feedback from that meeting, we will revise and prepare final recommendations. The final report will be provided in hard copy and digital format with compelling graphics, charts, and maps to illustrate why freight matters for the Triangle region.

Deliverable(s):

- Final Freight Mobility Report (10 hard copies, and 10 CDs with PDF)

10.5 Plan Adoption Support

This is a task that is currently limited to a few hours and could be modified by the Client team based on actual needs. As part of this on call task, the PB team will provide customized written materials such as briefing documents to support adoption of the Plan by the MPO boards and NCDOT. The PB team will also make presentations to Councils and Boards on an “as needed” basis.

Deliverable(s):

- Planning Support as Needed (subject to available hours and/or contract modification)

EXHIBIT B - ESTIMATED SCHEDULE

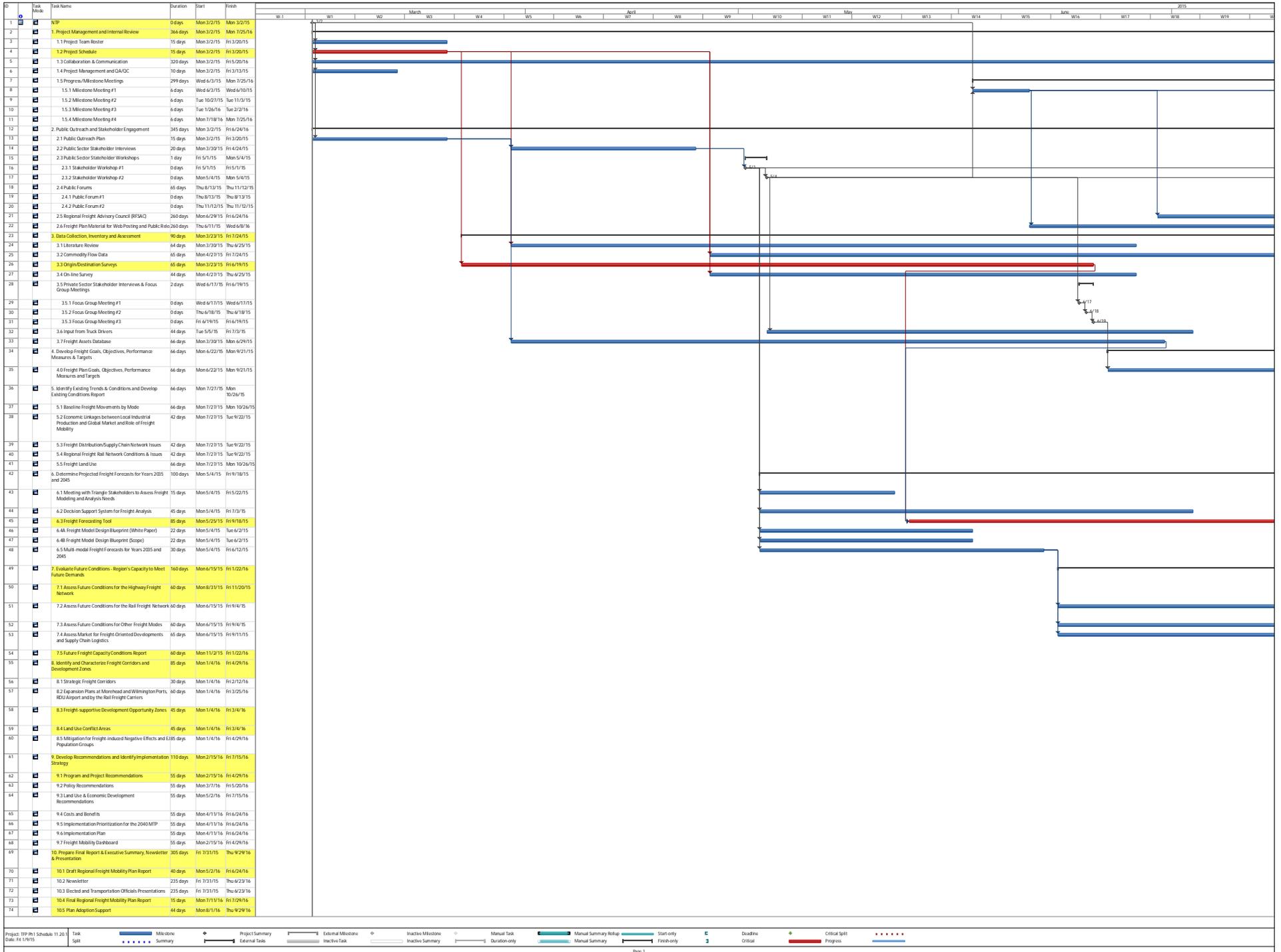
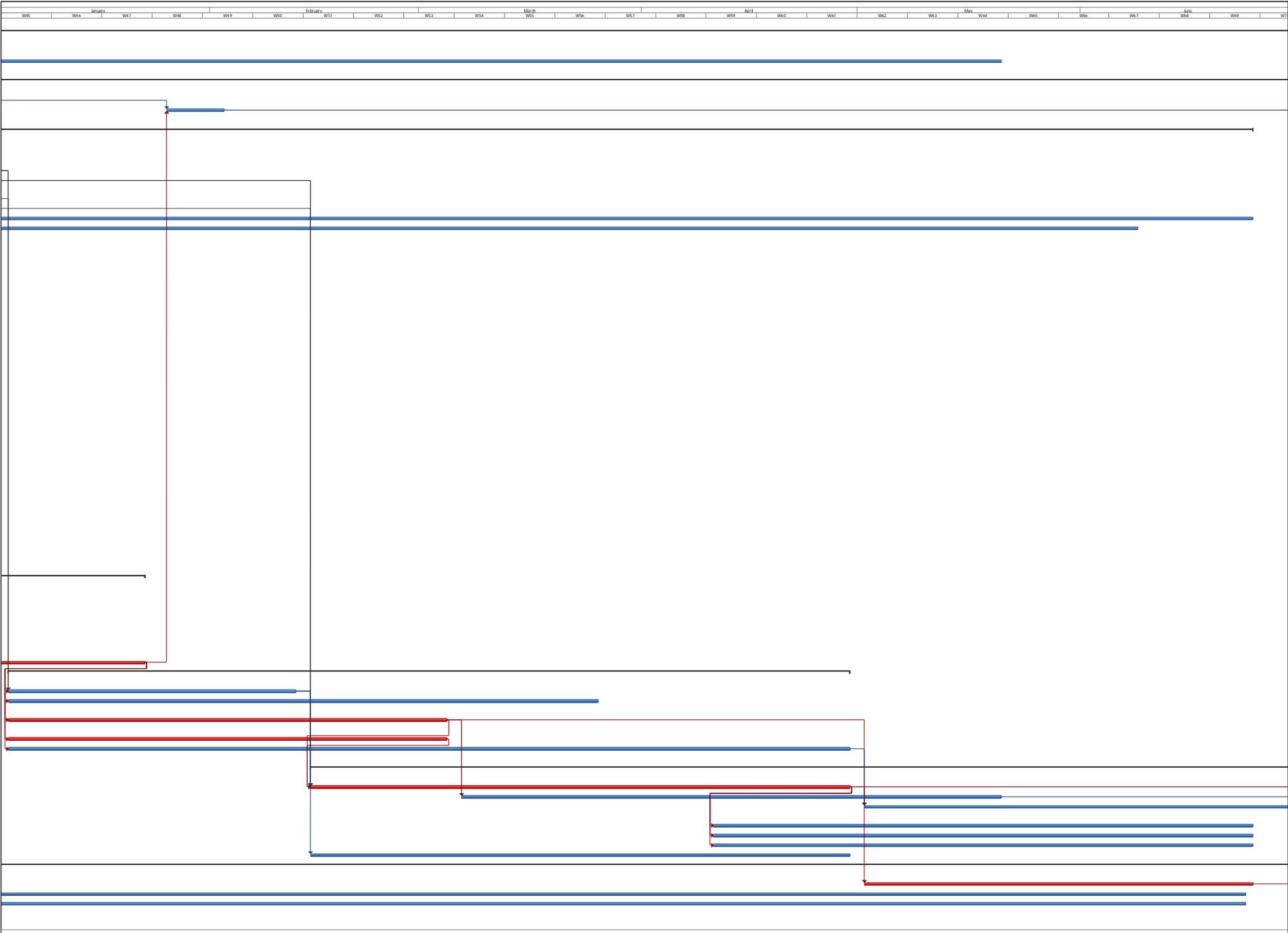


EXHIBIT B - ESTIMATED SCHEDULE



Project: RFP PH Schedule 11.20 | Task: Split | Milestone: Summary | Project Summary: External Tasks | External Milestone: Inactive Milestone | Inactive Milestone: Inactive Summary | Manual Task: Duration-only | Manual Summary: Manual Summary | Start-only: Finish-only | Deadline: Critical | Critical Split: Progress

EXHIBIT B - ESTIMATED SCHEDULE

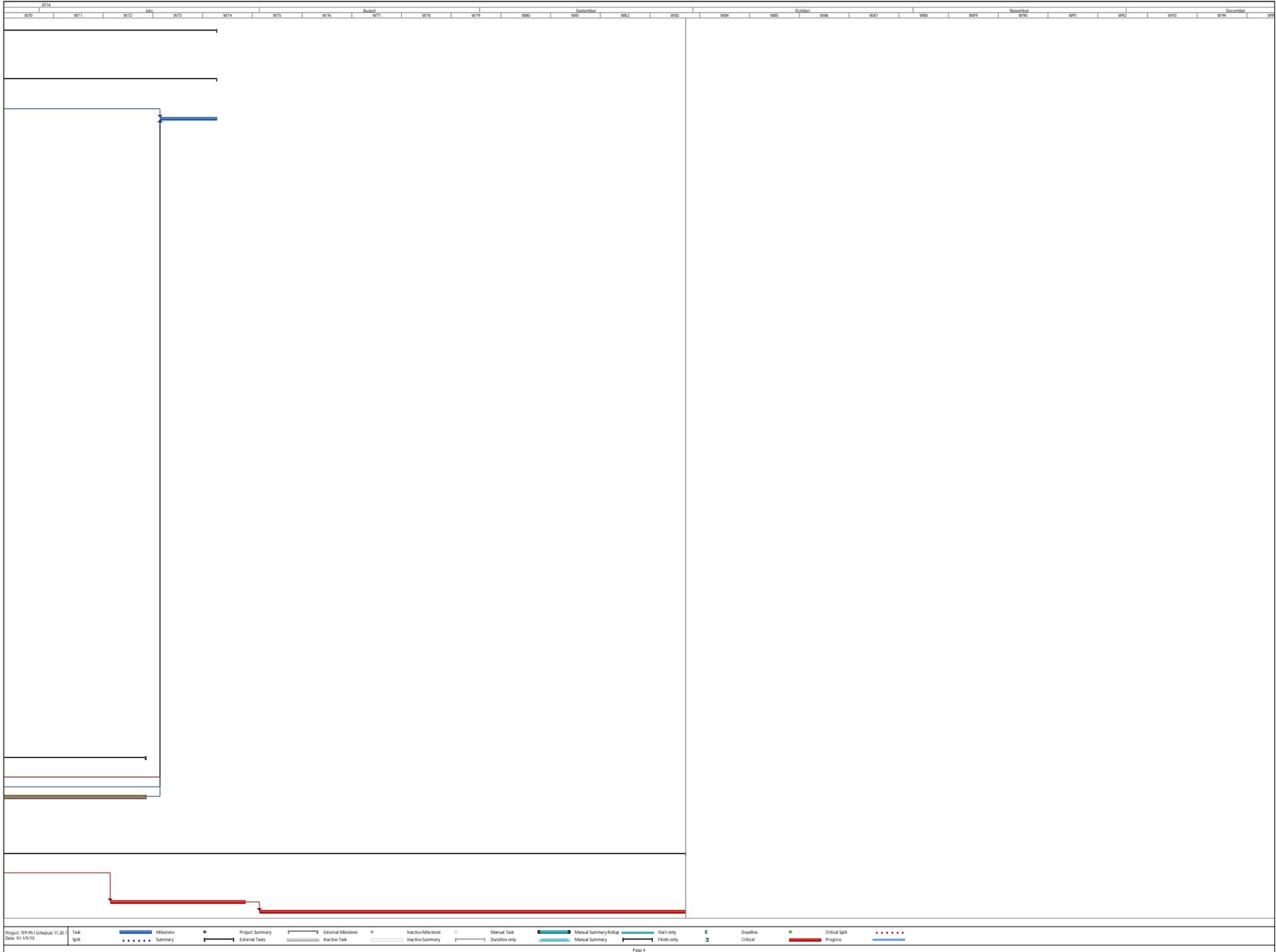


Exhibit B: Estimated Schedule

Triangle Freight Plan Task Name	Task Duration	MONTH																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Project Management and Internal Review	366 days	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
2. Public Outreach and Stakeholder Engagement	345 days	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
3. Data Collection, Inventory and Assessment	90 days	█	█	█	█	█												
4. Develop Freight Goals, Objectives, Performance Measures & Targets	66 days		█	█	█	█												
5. Identify Existing Trends & Conditions and Develop Existing Conditions Report	66 days					█	█	█	█									
6. Determine Projected Freight Forecasts for Years 2035 and 2045	100 days			█	█	█	█	█	█									
7. Evaluate Future Conditions - Region's Capacity to Meet Future Demands	160 days			█	█	█	█	█	█	█	█	█						
8. Identify and Characterize Freight Corridors and Development Zones	85 days											█	█	█	█			
9. Develop Recommendations and Identify Implementation Strategy	110 days											█	█	█	█	█	█	
10. Prepare Final Report & Executive Summary, Newsletter & Presentation	305 days									█	█	█	█	█	█	█	█	

**Exhibit C
Schedule of Fees and Charges
Triangle Freight Plan (Phase 1)
Prepared by PARSONS BRINCKERHOFF**

	TOTALS	Joe Bryan	Muehlig Rahman	Lea Hurtstanger	Jeanne Shivers	Alan Moyes	Joe Garulis	Shobank Shahar	Jeff Chang	Nicole Bennett	Sasha Guarino	Robin Christians	Kathryn DiFormet	Rick Donnelly	Kyle Ward	Chris McFarlane	Mackling Ingram	Other PB Support Staff	Lance Counstock	Paula Dowell	Dixie Abanoub	Lisa Dostro	Chris Lamm	Other CS Support Staff	Billy Bachman	M. Wilby	Other Westat Support Staff	Dr. George List	Bruce Tomplins	
9.2 Policy Recommendations	20 hrs \$ 6,542.88																		8 hrs	8 hrs										
9.3 Land Use & Economic Development Recommendations	20 hrs \$ 5,125.44				8 hrs															8 hrs										
9.4 Costs and Benefits	60 hrs \$ 9,865.59					4 hrs			16 hrs		16 hrs										8 hrs		8 hrs							
9.5 Implementation/Prioritization for the 2040 MTP	16 hrs \$ 3,846.97		8 hrs																											
9.6 Implementation Plan	36 hrs \$ 9,248.42										8 hrs									4 hrs	8 hrs	8 hrs								
9.7 Freight Mobility Dashboard	88 hrs \$ 12,614.85		4 hrs		16 hrs			24 hrs			8 hrs	16 hrs																		
10. Prepare Final Report & Executive Summary, Newsletter & Presentation	178 hrs \$ 36,988.64																													
10.1 Draft Regional Freight Mobility Plan Report	82 hrs \$ 16,263.65		8 hrs	2 hrs	8 hrs						20 hrs							12 hrs	4 hrs	16 hrs	8 hrs									
10.2 Newsletter	12 hrs \$ 2,295.75		1 hrs	2 hrs														1 hrs		2 hrs	2 hrs									
10.3 Elected and Transportation Officials Presentations	16 hrs \$ 5,199.94																													
10.4 Final Regional Freight Mobility Plan Report	60 hrs \$ 10,629.32		6 hrs	2 hrs	8 hrs						20 hrs																			
10.5 Plan Adoption Support	8 hrs \$ 2,599.97		4 hrs															8 hrs	4 hrs	8 hrs										

Direct Expenses Breakdown (Parsons Brinckerhoff Only)	Number	Unit Cost	Total
Local Mileage	1000.00	0.56	\$ 560.00
Air Travel	7.00	575.00	\$ 4,025.00
Auto Rental	14.00	75.00	\$ 1,050.00
Hotel	14.00	150.00	\$ 2,100.00
Per Diem	16.00	75.00	\$ 1,200.00
Parking, fuel, other	16.00	65.00	\$ 1,040.00
FedEx	16.00	10.00	\$ 160.00
Reproduction	2500.00	0.10	\$ 250.00
Color Reproduction	500.00	1.00	\$ 500.00
Freight Database Purchase (Estimate for Truck GPS Data)	1.00	3000.00	\$ 3,000.00
Direct Expenses Total (Parsons Brinckerhoff Only)			\$ 13,885.00

TOTAL COST	Labor	Expenses	Total
Parsons Brinckerhoff	\$ 188,509	\$ 13,885	\$ 202,394
Cambridge Systematics	\$ 127,108	\$ 5,892	\$ 133,000
Westat	\$ 26,600	\$ 1,000	\$ 27,600
Dr. George List	\$ 21,500	\$ 500	\$ 22,000
Tomplins International (Shown as Other Direct Costs, or ODC)	N/A	\$ 15,000	\$ 15,000
Total	\$ 363,717	\$ 36,276	\$ 399,994