



Development of Regional Scenario Modeling Guidebook Agreement of Participation

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R. Michael Wells, Sr. Div. 9

THIS AGREEMENT OF PARTICIPATION is hereby made, entered into, and effective as of the ____ day of _____, 2017, or the date of execution by both Parties, whichever is later, by and between **the PIEDMONT AUTHORITY FOR REGIONAL TRANSPORTATION**, hereinafter referred to as “**PART**,” and **GUILFORD COUNTY**, on behalf of the **GUILFORD COUNTY PLANNING AND DEVELOPMENT DEPARTMENT**, hereinafter referred to as the “**COUNTY**,” and also collectively referred to as the “Parties.”

Participating Agencies: Although the Participating Agencies are entering into separate Agreements of Participation, it is anticipated that the Participating Agencies shall consist of the following: the Piedmont Authority for Regional Transportation (PART); the North Carolina Department of Transportation (NCDOT); the Greensboro Urban Area Metropolitan Planning Organization (GUAMPO); the City of Greensboro, on behalf of the City of Greensboro Planning Department; the High Point Urban Area Metropolitan Planning Organization (HPUAMPO); the City of High Point on behalf of the City of High Point Planning Department; the Winston-Salem Urban Area Metropolitan Planning Organization (WSUAMPO); the Winston-Salem Forsyth County City-County Planning Department; Alamance County, on behalf of the Alamance County Planning Department; and, Guilford County, on behalf of the Guilford County Planning and Development Department, all collectively referred to as the “Participating Agencies.”

Background: The Piedmont Triad’s cities and towns face complex yet important decisions about their future. As population increases, our communities need a greater understanding how growth impacts their revenues (property tax) and expenses related to services. Fundamentally, communities need to decide how hundreds of economic, environmental and social considerations can be addressed and woven together to create vibrant places to live now and in the years to come.

While these decisions are important, they are also complex. Myriad factors are in play. Making wise, informed decisions requires combining science, data, and points of view from many fields at once. The participating agencies have agreed to explore advancing the Piedmont Triad’s modeling effort to include scenario planning related to land use, utility and transportation infrastructure, and natural resources.

Piedmont Together: A Comprehensive Regional Plan completed in 2015 included scenario planning as means to illustrate that how growth was integrated into the region impact the factors mentioned above. The scenario planning tool used was called CommunityViz. There was a great deal of effort, time and expense using the model and developing a regional database. Piedmont Together also recommended the expansion and continued use of CommunityViz in the regional.

Use of CommunityViz or a similar tool should make it easier to adjust for changes in future land use plans and see how they impact the performance of future transportation improvements throughout the region and its MPOs. Also, different land use scenarios being considered can be run through this tool to know in advance how they impact the transportation system. This tool can be used to assist us with the socio-economic data projections that are used in the regional travel demand model, potentially making all our jobs easier and at the same time better coordinated.

The foundation for the Piedmont Triad Regional (Travel Demand) Model is socioeconomic data — including population, housing, students and employment estimates — organized into distinct geographic subareas referred to as traffic analysis zones (TAZs). Collectively, this information represents the assumed growth and development potential for the Piedmont Triad Region. Demand on the transportation system (trip generation) is calculated directly from the model’s socioeconomic data. Four metropolitan planning organizations — Greensboro, Winston-Salem, High Point and Burlington-Graham — rely on information from the Piedmont Triad Regional (Travel Demand) Model for developing their adopted Metropolitan Transportation Plans.

The current process to develop socioeconomic data for the Piedmont Triad Regional (Travel Demand) Model is time intensive, and the top-down, manual process creates challenges for allocating future year growth in the region. Specifically, it can 1) create a miss-match between demand and supply statistics for growth allocation in some growth categories and in some parts of the region, 2) marginalize some of the unique conditions for cities and towns in the region by misrepresenting local plans and ordinances, and 3) limits the ability to evaluate the effects of alternative development patterns on the efficiency of the regional transportation system.

Task: The Participating Partners want to study the merits, needs, capabilities and next steps for building a Piedmont Triad CommunityViz Model using CommunityViz software, which will replace current socioeconomic data allocation processes for the region (including both a base year data management tool and a future year allocation tool). The new Model would incorporate data, logic, partnerships and staff experience developed for the Piedmont Together CommunityViz Model in 2013 — making the transition to a new tool more efficient and cost-effective. A document will summarize key steps for moving forward with the model build program in the context of a project guidebook.

Statement of Work: The project guidebook development will be organized into three general tasks: 1) project management and kick-off activities, 2) partnering strategy and 3) a playbook for building the Piedmont Triad CommunityViz Model. Collecting data and building the CommunityViz model will occur sometime in the future as a separate initiative. The work would be performed by CityExplained, LLC. Refer to Attachment A for the detailed work plan.

Cost Sharing Terms and Conditions: PART and NCDOT will contribute \$9,000 from the PTRM FY 17 Budget as a Model Enhancement activity. The other participating agencies will share the remaining cost as a joint city/MPO and county partners. Below is a breakdown of the cost share:

Guidebook Development Cost	\$17,800
PTRM Enhancement Funds	
PART Share	\$ 6,750
NCDOT Share	\$ 2,250
Partner Agencies	
GUAMPO	\$ 2,200
HPUAMPO	\$ 2,200
WSUAMPO	\$ 2,200
Guilford County	\$ 1,100
Alamance County	<u>\$ 1,100</u>
Grand Total	\$17,800

PART will manage the contract and serve as project manager. PART will utilize the PTRM reimbursement process for NCDOT's share. The Partner Agencies shares will be invoiced at the conclusion of the project but prior to July 1, 2017.

Appropriation. This Contract is subject to annual appropriation of funds by the Guilford County Board of Commissioners or other funding source, pursuant to N.C.G.S. Chapter §153A-13.

Term. This Contract shall be in effect until completion of the project as described herein.

Amendment. The terms of this Agreement may only be modified or amended with a written Contract Amendment executed by both Parties.

Notices. All notices pursuant to this Agreement shall be in writing and delivered personally or mailed by certified mail, registered mail, postage prepaid, with return receipt requested, at the addresses appearing below, but each Party may change such address by written notice in accordance with this paragraph. Notices delivered personally will be deemed communicated as of actual receipt. Mailed notices will be deemed communicated as of three (3) days after mailing.

Marty K. Lawing, Guilford County Manager
GUILFORD COUNTY
P.O. Box 3427 (zip code 27402)
301 West Market Street

Mark E. Kirstner, AICP, PART Director of Planning
PIEDMONT AUTHORITY FOR REGIONAL
TRANSPORTATION (PART)
107 Arrow Road

Independent Contractor/Indemnification. The Parties shall operate as independent contractors for all purposes. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between the COUNTY and either PART or any employee or agent of PART. PART is an independent contractor and not an employee, agent, joint venture or partner of the COUNTY.

The Parties agree to each be solely responsible for their own acts or omissions in the performance of each of their individual duties hereunder, and shall be financially and legally responsible for all liabilities, costs, damages, expenses and attorney fees resulting from, or attributable to any and all of their individual acts or omissions to the extent allowable by law.

Severability. If any provision of this Contract is held unenforceable, then such provision will be modified to reflect the Parties' intention. All remaining provisions of this Contract shall remain in full force and effect.

Jurisdiction. The Parties agree that this Contract is subject to the jurisdiction and laws of the State of North Carolina. The CONTRACTOR will comply with bid restrictions, if any, and applicable laws, including N.C.G.S. §143-129(j) regarding E-Verify. Any controversies arising out of this Contract shall be governed by and construed in accordance with the laws of the State of North Carolina.

Iran Divestment Act of 2015. Whereas, N.C.G.S. §147-86.59 requires that a State agency or political subdivision of the State must require persons attempting to contract therewith, including contract renewals or assumptions, to certify that the persons or the assignees are not identified on the list created by State Treasurer pursuant to N.C.G.S. §147-86.58. Effective as of the date of this Contract, and in accordance with N.C.G.S. Chapter 147, Article 6E entitled "Iran Divestment Act," each Party hereby certifies that it is not identified on the Final Divestment List created by the State Treasurer, which list of persons the Treasurer has determined engage in investment activities in Iran, including any subcontractors of either Party.

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This Agreement continues on the following page.)

Entire Agreement. This Contract, including the Exhibits and/or Attachments, if any, sets forth the entire Agreement between the Parties. All prior conversations or writings between the Parties hereto or their representatives are merged within and extinguished. This Contract shall not be modified except by a writing subscribed to by the Parties.

The undersigned hereby agree to the terms and conditions set forth above:

PIEDMONT AUTHORITY FOR REGIONAL TRANSPORTATION (PART)

Scott W. Rhine
Executive Director

Date

Approval by Finance Officer

This Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

Connie Conklin, Finance Director

Date

GUILFORD COUNTY, on behalf of the GUILFORD COUNTY PLANNING & DEVELOPMENT DEPARTMENT

Marty K. Lawing
Guilford County Manager

Date

ATTEST:

Robin B. Keller
Guilford County Clerk to Board

Date

Approval by Finance Officer

This Agreement has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.

N. Reid Baker, III
Guilford County Finance Director

Date

ATTACHMENT A

STATEMENT OF WORK PIEDMONT TRIAD COMMUNITYVIZ MODEL GUIDEBOOK

One of the tools available for studying long-term impacts to the regional transportation system is the Piedmont Triad Regional (Travel Demand) Model, which is a computer program that forecasts future year demand on existing and planned transportation facilities using anticipated land use, demographic information, and travel patterns unique to the region. Planning horizon years in the travel demand model consider conditions 10, 20 and 30 years beyond base year conditions. Approximating future year conditions on the transportation system helps transportation officials assess the implications of growth, compare alternative transportation solutions, and provide a framework for measuring the impact of policy decisions.

The foundation for the Piedmont Triad Regional (Travel Demand) Model is socioeconomic data — including population, housing, students and employment estimates — organized into distinct geographic subareas referred to as traffic analysis zones (TAZs). Collectively, this information represents the assumed growth and development potential for the Piedmont Triad Region. Demand on the transportation system (trip generation) is calculated directly from the model's socioeconomic data. Four metropolitan planning organizations — Greensboro, Winston-Salem, High Point and Burlington-Graham — rely on information from the Piedmont Triad Regional (Travel Demand) Model for developing their adopted Metropolitan Transportation Plans.

The current process to develop socioeconomic data for the Piedmont Triad Regional (Travel Demand) Model is time intensive, and the top-down, manual process creates challenges for allocating future year growth in the region. Specifically, it can 1) create a miss-match between demand and supply statistics for growth allocation in some growth categories and in some parts of the region, and 2) marginalize some of the unique conditions for cities and towns in the region by misrepresenting local plans and ordinances. The manual process also limits the ability to evaluate the effects of alternative development patterns on the efficiency of the regional transportation system.

The Piedmont Authority for Regional Transportation wants to study the merits, needs, capabilities and next steps for building a Piedmont Triad CommunityViz Model using CommunityViz software, which will replace current socioeconomic data allocation processes for the region (including both a base year data management tool and a future year allocation tool). The new Model would incorporate data, logic, partnerships and staff experience developed for the Piedmont Together CommunityViz Model in 2013 — making the transition to a new tool more efficient and cost-effective. A document will summarize key steps for moving forward with the model build program in the context of a project guidebook (implemented independent of this Statement of Work).

Socioeconomic data allocated in the Piedmont Triad CommunityViz Model will streamline the workflow for running the Piedmont Triad Regional (Travel Demand) Model. Output data will be normalized for the travel demand model study area and formatted for direct input into the travel demand model software; saving time and potential errors translating data from several sources. One section in the project guidebook will also focus on specific data needs and model components in CommunityViz that might benefit the Region's work on a new Transit Boardings Estimation and Simulation Tool (TBEST).

The Statement of Work is organized into three general tasks: 1) project management and kick-off activities, 2) partnering strategy and 3) a guidebook for building the Piedmont Triad CommunityViz Model. Collecting data and building the CommunityViz model will occur sometime in the future as a separate initiative of the Client.

TASK 0

PROJECT MANAGEMENT & KICK-OFF ACTIVITIES

Task 0A – General Coordination

The Consultant's Project Manager will participate in six conference calls with the Client's Project Manager to discuss matters related to the Statement of Work. Coordination activities may be used to discuss preliminary findings, discuss on-going issues, or obtain feedback on draft deliverables. Routine coordination in between conference calls will occur via telephone, email or interaction over a file share point site.

Task 0B – Data Exchange

The Client will make available to the Consultant GIS data, resource documents, growth forecasts, stakeholder lists, development data, etc. identified as important for the creating the Piedmont Triad CommunityViz Model Guidebook. Data will be exchanged via a file share point site or hard drive disk. The Consultant will rely on this starting data for its inventory and analysis to support recommendations in subsequent phases of the Statement of Work.

Task 0C – Project Kick-Off Meeting

The Consultant will meet with the Client and other key officials at a project kick-off meeting to seek their input on key decisions (model architecture, key data formats and calculations, final deliverables, travel demand model communication strategy, etc.) for conceptualizing a Piedmont Triad CommunityViz Model. Information collected at the meeting will be used in subsequent phases of the Statement of Work.

TASK 1

PARTNERING STRATEGY

Task 1A – Stakeholder Interviews

The Consultant will attend up to five stakeholder interviews for writing the Piedmont Triad CommunityViz Model Guidebook. The Client will provide a list of individuals to interview and arrange all meeting dates, times and locations. The Client is encouraged to attend all stakeholder interviews with the Consultant. Stakeholder interviews will be completed over a one-day period. Information collected in the interviews will be used in subsequent phases of the Statement of Work.

Potential stakeholder interviews for writing the Piedmont Triad CommunityViz Model Playbook include:

- Federal Highway Administration
- North Carolina Department of Transportation
- Piedmont Triad Regional (Travel Demand) Model Team
- Piedmont Authority for Regional Transportation
- Piedmont Triad Council of Governments

Task 1B – Focus Group Meetings

The Consultant will attend two focus group meetings for writing the Piedmont Triad CommunityViz Model Playbook. The Client will convene the groups and arrange all meeting dates, times and locations. The Client is encouraged to attend all focus group meetings with the Consultant. Focus group meetings will be completed over a continuous two-day period. Information collected in the interviews will be used in subsequent phases of the Statement of Work.

Potential focus groups for writing the Piedmont Triad CommunityViz Model Guidebook include:

- Metropolitan Planning Organization & Rural Planning Organization Directors
- Local Government Planning Department Directors

Task 1C – Policy-Maker Briefing

The Consultant will provide one briefing to the Piedmont Authority for Regional Transportation (and their coordinating agencies) to describe the Piedmont Triad CommunityViz Model Guidebook, next steps, probable schedule, budget expectations, etc.

TASK 2 PIEDMONT TRIAD COMMUNITYVIZ MODEL GUIDEBOOK

Task 2A – Formalize Study Area & Reporting Geographies

The study area boundary and internal reporting geographies (most likely county boundaries) for the Piedmont Triad CommunityViz Model will be determined with input from the Client and their project partners. Other information will be tagged to the Model's preferred unit of analysis (most likely a vector-based, graduated grid cell) to measure, compare and report different features or impacts associated with the socioeconomic data allocation process.

Task 2B – Database Verification & Validation

The Consultant will review technical and non-technical data provided under Task 0B, and compare it with thoughts collected under Task 1, to verify and validate data required for building the Piedmont Triad CommunityViz Model (including a base year data management tool and future year allocation tool). Preferred data sets, data formats, and collection dates will be identified, and combined with data collection and coding protocols, to guide future efforts of the Client.

Task 2C – Model Architecture

The Consultant will prepare a model architecture (flow chart) that identifies specific modules, data, steps, processes, assumptions, nested equations, etc. important for building the Piedmont Triad CommunityViz Model (including a base year data management tool and future year allocation tool). An annotated model process diagram (narrative) will supplement the model architecture, highlighting specific details for each step in the model architecture (general description, general steps and important considerations).

The model architecture and model process diagram will be included in the Piedmont Triad CommunityViz Model Guidebook (see Task 2E).

Task 2D – Project Schedule & Action Plan

The Consultant will identify a milestone schedule and action plan for developing the Piedmont Triad CommunityViz Model consistent with the model architecture described in Task 2C. Each step in the action plan will include a narrative, implementation timeframe, and responsible party. The project schedule and action plan will be included in the Piedmont Triad CommunityViz Model Guidebook (see Task 2E).

Task 2E – Guidebook Document

The Consultant will develop a Piedmont Triad CommunityViz Model Guidebook to summarize key steps for moving forward with a model build program (independent of this Statement of Work). The document will be graphically-oriented and supported by text, tables and maps appropriate for conveying information. General headings in the document will include: introduction, study area, reporting geographies, relationship to the Piedmont Triad Regional (Travel Demand Model), partnering strategy, overview of CommunityViz software, unit of analysis, data inventory and analysis, data creation, growth control totals, household category ratios, household size ratios, employee space ratios, model architecture, model calibration, project milestone schedule, project budget reserve, and next steps moving forward. Information used for writing under the headings above may come from previous guidebooks or technical documents prepared by the Consultant.

The Consultant will prepare and submit a draft guidebook document for Client review. An outline for the document will be submitted for Client approval at the completion of Task 2D. One electronic copy (PDF format) of the draft document will be delivered to the Client to facilitate the review process. The Client will be responsible for making copies of the draft document for distribution to interested parties.

The Consultant will revise the draft document to reflect comments or requests for revision from the Client. One electronic copy (PDF format) of the final guidebook document will be delivered to the Client for their use independent of the Consultant. The Client will be responsible for making copies of the final document for distribution to interested parties. Working files used to develop the final guidebook document will be submitted to the Client at the completion of Task 2E.

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