Attachment 1- Scope of Work

Pflugerville Master Transportation Plan

I – BASIC SERVICES

PROJECT DESCRIPTION:

This project will consist of utilizing the Pflugerville 2030 Comprehensive Plan and Trails Master Plan in the development of the community's thoroughfare plan to the collector level; development of a transportation model that is compatible with the regional CAMPO model; development of street cross section and standards; the evaluation of the City's Downtown Parking Strategy; wayfinding development and the incorporation of a roadway impact fee study, if Pflugerville decides to proceed with this task. The Engineer Shall:

Task I – Project Management

A. Project Coordination

1. Attend a project kick-off meeting and then monthly project meetings with the City to review progress and address issues. It is anticipated that for the development of the Transportation Plan a total of five (5) project meetings will be required. This includes bi-monthly meetings with City Staff (3) and one meeting with each Planning and Zoning and City Council (see Attachment 3).
2. There were three additional tasks that could potentially be added onto this contract: Roadway Impact Fee Policy development, Downtown Parking Strategy development and City Wide Wayfinding plan (implementation along Pecan Street). If any of these items are included within the initial contract, to the extent possible, the meeting requirements will be included in the above item. However, it is anticipated that additional meetings beyond monthly project meetings will be required. The nature of these meetings is addressed in their respective Tasks along with the associated additional meeting costs.
3. Prepare meeting agendas, meeting minutes and coordinate the meetings.
4. Coordinate with project sub consultant.
5. Prepare monthly progress reports.

B. Quality Control

1. Perform quality control reviews at the various stages of the project.
2. Manage QC documentation.

Task II – Visioning and Goals

A. Stakeholder Meetings

1. Coordinate stakeholder meetings at various stages of project development. It is anticipated that there will be one (1) called stakeholder meeting. This meeting will be called at the discretion of the City's Project Manager; however, it is anticipated to be at a strategic time during project development.

B. Public Outreach

1. Prepare preliminary and final transportation recommendations and present at two (2) scheduled citywide public outreach programs/efforts. The first meeting will be held at the beginning of the project in order to gather citizen input regarding needed transportation improvements. This includes new roadway construction, sidewalks, bicycle facilities, and/or improvement to existing roadways.

1. The second meeting will be scheduled toward the end of the project and will encourage the citizens to comment of the draft Master Transportation Plan. This includes the Thoroughfare Plan, proposed complete street cross sections as well any proposed thoroughfares and the downtown parking study if applicable.
2. A third meeting will be held with the City identified landowners. It is envisioned that this meeting will be coordinated by City Staff and will allow for the further understanding of the potential land uses and/or access needs by the individual landowners.

C. Stakeholder Meeting to Discuss Funding Options

1. Prepare and Present a presentation on the Fundamentals of Roadway Impact Fees to City staff.
2. Transportation Funding Techniques for Texas Cities
   a. Research various funding techniques that are available for Texas cities for the purpose of roadway infrastructure. Prepare a list of up to five (5), a minimum of three (3), Texas cities to contact and explore how these cities fund roadway infrastructure and understand how these cities handle current off-site roadway infrastructure requirements. Selected comparison cities are subject to approval by the City's project manager.
   b. Prepare a summary memorandum detailing the results of the funding options. This memorandum will include a listing of the available funding techniques, the comparison agencies contacted and a summary of the apparent pros and cons of available options for off-site roadway infrastructure. A draft of this memorandum will be provided to the City for review and comment. Upon receipt of review comments from the City, a final version of the memorandum will be provided to the City.

D. Deliverables

During this Task, BGE will be compiling data that will be used for inclusion within the Visioning and Goals section of the Master Transportation Plan. Upon conclusion of the first public outreach meeting, BGE will submit a draft of this chapter for review.

Task III – Land Use Assumptions

A. Land Use Allocation Model

1. Using Community Viz 3.3, the BGE team will develop the spatial data planning model that will allow the forecasting of future year development patterns by parcel.
2. Carrying Capacity Analysis and Land Suitability Analysis.
    a. Complete the carrying capacity analysis to further refine developable areas as either "highly constrained for development" or "areas of conflict for development".
    b. Run the land suitability analysis that allows for the measurement of the attractiveness of individual parcels for new development.
3. Scenarios
    i. With the assistance of the City of Pflugerville, BGE will request the existing CAMPO 2035 Travel Demand Model (TDM). This will be used to compare the population and employment data as well as the analysis zones with the City's latest population and employment data. The result of this will be the land use allocation by Traffic Analysis Zone (TAZ). It is assumed that the 2035 trend scenario is mostly complete by the City in GIS format. The trend scenario in general shall represent a future scenario that is based primarily on past trends.
    ii. Two additional scenarios will be developed based on the growth desires and future visions of the community and stakeholders. These scenarios can be vastly different but can serve to test a virtual future and the benefits or consequences of each scenario.

4. Land Use Model Calibration
    a. Working in coordination with the City of Pflugerville the team will calibrate the assumptions and equations embedded within the land-use model.
    b. The city will provide the following land use data (see Attachment A for a list of the data request):

        1) Building permit activity and locations for permits

        2) Building height survey (number of stories)

        3) Observed residential densities.

        4) Observed nonresidential intensities (floor-area-ratio)

5) Surveyed downtown parking lot supply. If the City does not have the information, the Team will complete this task as part of the field work.

6) Land-use mix, if different from Land Use Plan highlighted with the 2030 Comprehensive Plan.

c. Land Use information will be collected for existing and 10-year (2023) conditions in a format suitable for use in the Roadway Impact Fee task. This would include population (dwelling units) and employment (square feet of retail, service, and basic) within each TAZ within the Corporate Limits.

B. Deliverables

Upon completion of this task, a draft Land Use Assumptions section will be submitted to the City of Pflugerville for review. This section will detail all land use allocation data collection efforts as well as a detailed discussion about each of the analysis scenarios.

Task IV – Travel Demand Model

A. Data Collection

1. Obtain the most current and 2035 Travel Demand Model from CAMPO. This includes all model data required to run the model from trip generation to assignment.
2. Obtain from the City of Pflugerville any traffic data that has been collected. This could include intersection Turning Movement Counts or 24-hour mechanical counts (see Exhibit A for a list of the data request).
3. As part of the Master Transportation Plan a total of 12 24-hour tube counts will be completed. These will be completed prior to the end of the Pflugerville Independent School District's school year. A complete listing of the locations is included in Exhibit B.
4. Obtain GIS data pertaining to roadway specifics – roadway geometrics and speed limits (see Exhibit A for a list of the data request). Upon receipt of this information, BGE will perform field observations to verify all roadway information.

B. Model Development

1. Using the current CAMPO TDM as the base model, the team will build and refine the internal zonal structure. Together BGE and the City of Pflugerville will review the internal TAZs to ensure proper alignment and allocation. Where necessary, the existing TAZs will be refined further to reflect anticipated growth and development.
2. Any changes made to the current TDM will be carried forward to 2035 so in effect the BGE team will be developing 2 functional models: current and 2035.
3. Review the land-use assumptions and the zonal estimates of population and employment that were allocated to each of the traffic analysis zones (TAZs). If TAZs have been refined further, the respective population and employment will

also be refined. Ultimately the centroid locations will be located and the TAZ specific population and employment estimates will be developed.

4. In addition to the review of the zonal structure, a review of the model will be completed in order to ensure all pertinent collector level roadways and higher have been included.

C. Building and Defining the Network

1. Utilizing the TAZs and identified centroids, the centroid connectors will be located; thus, allowing the traffic to travel between areas within the City of Pflugerville and the region. This is critical because the location of these connectors ultimately impacts the vehicular demand that is placed on the roadway network.
2. The BGE team will add roadways sufficient to match the new updated thoroughfare plan.

D. Validation

1. Review and compare the initial analysis set (base year) to collected data sets in order to validate the model results to existing data. This is a critical step to ensure the validity of the model.
2. The 2013 model will be validated to existing 24 hour counts. The validation will involve aggregating the Pflugerville streets into arterials and collectors (City's functional classification). The model's network speeds and alpha and beta factors will be refined until the model is considered validated to the aggregated streets.(The latest NCHRP standards will be used). In addition, four sets of screen lines will be established to validate trip making patterns. The selected screen lines will be those where 24-hour traffic counts were completed and will represent as many functional classifications as possible.
3. Using this validation criteria, the model will be calibrated until validation is achieved.

E. Alternatives Analysis

1. Once the model has been validated and accepted, work with the City of Pflugerville and develop a list of base and committed projects for inclusion within the model analysis. This analysis scenario will constitute the base plus committed scenario and will only be completed for the 2035 model year. This model run will enable the Team to determine the location of potential roadway deficiencies.
2. Building on the selected land use scenario and knowing where the location of potential roadway deficiencies, a list of potential transportation projects will be developed. This list will be refined further with City staff. Ultimately the alternatives chosen for analysis will be included within the model and the impacts

analyzed. A total of 2 roadway alternative model analyses will be completed for the 2035 model year.

3. Develop a prioritization list that includes an implementation plan and conceptual level cost estimates. Conceptual level cost estimates include a general estimate of the anticipated project's construction cost. This could include consideration of roadway geometrics, potential right-of-way acquisition, utility re-location, and roadway (re)construction. A unit cost per mile will be developed based on the proposed roadway cross section for each type of roadway. For right-of-way and utility costs, the Engineer will utilize unit cost data made available by the City.
4. Perform a conceptual level analysis of proposed thoroughfare alignments to assess constructability. Included in this will be a conceptual level review of existing barriers that might impact roadway construction. This would include (but is not limited to) drainage ways, flood plains, existing structures, creeks/streams, topography, and utility corridors.

F. Deliverables

Upon completion of this task, a draft Travel Demand Model section will be submitted to the City of Pflugerville for review. This section will detail all TDM data collection efforts as well as a detailed discussion pertaining to each of the subtasks identified above.

Task V –Project Prioritization

1. Using community values, preferences and technical analysis develop and recommend project selection criteria that will aid in the prioritization of needed transportation projects. This will include both projects within the City Limits as well as the ETJ and it will include both new (green field) projects as well as existing roadway improvement projects. This criterion will be reviewed with the City Staff to ensure community needs are being met.
2. Using the developed criteria, determine a project list, including each of the project types listed above, that is based upon both the community's priorities as well as the project's fiscal viability. The conceptual level cost estimates developed in Task IV.E.4 will provide the basis for the fiscal constraint analysis and under this analysis method projects will be prioritized based upon probable funding availability. Working with the City's Project Manager, up to three (3) funding scenarios will be developed and presented for possible inclusion within a citywide transportation bond election.
3. Once the list is developed, it can be used as part of a Pflugerville Capital Improvement Program and CAMPO's Transportation Improvement Program (TIP) and Long-Range Plan.
4. Build upon the Pflugerville 2030 Comprehensive Plan and further develop a multi-modal approach to transportation projects for the City of Pflugerville. This includes roadway needs and can include a review of alternative transportation

considerations, including but not limited to bicycle and pedestrian modes. Transit references should be considered only as appropriate for the community.

5. Based upon the outcome of the transportation funding conversations, the team will develop a project prioritization matrix that will allow for a funding mechanism comparison. This matrix will be developed in a way to ties goals to objective criteria for measurement and ranking of projects.

Task VI –Transportation Plan Development

A. Master Transportation Plan Document

1. Build upon the Pflugerville 2030 Comprehensive Plan and further develop a multi-modal approach to transportation projects for the City of Pflugerville. This includes roadway needs.
2. Included within the document will be the review and incorporation of the City of Pflugerville's Trails Master Plan as well as alternative transportation considerations. This can include a review and recommendation of the bicycle and pedestrian needs. Transit needs should be considered only as appropriate for the community.
3. The latest state of the practice Complete Streets guidelines will be used to develop cross sections. It is anticipated that this may necessitate the addition of several cross sections to the currently defined cross sections in the 2030 Comprehensive Plan where appropriate.

B. Deliverables

1. As identified in the tasks above, draft sections of the Master Transportation Plan will be submitted to the City of Pflugerville at various stages of the project. Each of the sections will serve as part of the Master Transportation Plan. It is envisioned that the development of the document will be on-going throughout the project so that each of the sections is addressed in a timely manner. Upon completion of this task, the complete draft document will be prepared for review and presentation at the second Public Outreach (identified is Task II) meeting.
2. After the final Public Outreach meeting all comments will be incorporated into a final draft document and be presented to the Pflugerville City Council (identified in Task I).
3. If there are comments from the City Council and/or City Staff that require revisions to the report, these revisions will be made and five (5) copies of the final report, an electronic version of the final report, related .shp (GIS) files and Community Viz files will be submitted to the City of Pflugerville.

II – Additional Services

Task VII – Impact Fees

A. Roadway Impact Fee Analysis

1. Prepare the Land Use Assumptions for Roadway Impact Fees in conformance with Chapter 395 of the Local Government Code and shall include the following:

   a. Data Collection. Coordinate with the City to obtain the following data:
      1) City Contacts – The City shall provide the organization structure and contact information for the applicable City staff involved with the land use assumptions.
      2) Comprehensive Master Plans – The City shall identify and provide the City's most recent comprehensive master plans. Some of these plans are currently being developed and/or updated.
      3) Building Permit History – The City shall provide building permit history (both residential and non-residential) for the previous ten (10) years.
      4) Maps – The City shall provide available AutoCAD or GIS shapefiles, associated databases, and layer files in ESRI ArcGIS 8.x format. All data shall be projected in NAD 83 State Plane, Central Texas Zone coordinates. Data should include:
         - Current Zoning Map;
         - Future Land Use Plan Map;
         - City Limits and ETJ Map; and
         - As available for CAPCOG, Most recent digital orthophotograph (DOQ) of the City.

   b. Service Area Boundaries. Meet with the City to develop the roadway impact fee service area boundaries within the existing City limits consistent with the six (6) mile limit required by law. It is anticipated that two (2) service areas will be required for roadway impact fees.

   c. Existing Land Use Assumptions. The City will prepare the existing land use information in a format suitable for use in the roadway impact fee policy development. The information will be presented in tabular form by roadway service area. KHA will then for each service area, population (persons and number of dwelling units) and employment (amount of square footage of basic, service, and retail land uses) will be summarized. The existing land use assumptions will be completed for the year 2013.

   d. Build out Land Use Assumptions. Develop the build out demographics (population and employment) within the existing City limits in tabular format for each roadway service area. The development of these demographics will be an interactive process with the City. Two (2) meetings will be held with the City during this task. The first meeting will be to review anticipated densities of development throughout the City, while the second will be to review the

demographics developed. The future land use data collected will be used to determine future land uses in undeveloped areas within the existing City limits.

e. Ten-Year Land Use Assumptions. Chapter 395 of the Texas Local Government Code states that impact fees may only be used to pay for items included in the Impact Fee capital improvements plan and attributable to new service units projected over a period of time not to exceed ten (10) years. Based on guidance from the City regarding projected development patterns and growth rates, the Ten-Year Land Use Assumptions for the 2013 – 2023 will developed.

f. Documentation. The service area boundaries and Land Use Assumptions information will be put into the Roadway Impact Fee report. No additional documentation will be produced.

g. Meetings. Prepare for and attend up to one (1) meeting (in addition to those identified in the scope above) with City staff to discuss and review the proposed Service Area boundaries and Land Use Assumptions.

2. Prepare the roadway impact fee analysis in conformance with Chapter 395 of the Local Government Code and shall include the following.

a. Data Collection. Coordinate with the City to obtain the following data:
   1) City contacts – City shall provide the organization structure and contact information for the applicable City staff involved with the completion of the roadway capacity analysis and roadway impact fee Capital Improvements Plan (CIP).
   2) Traffic Counts – The City shall provide any available data (current and historical) for all roadway segments on the current Master Thoroughfare Plan. Obtain recently completed traffic counts for state highway facilities from TxDOT. Collect new PM peak hour traffic count data at up to ten (10) locations, as approved by the City's project manager, within the City for use in the roadway impact fee analysis.
   3) Historical Project Costing Information – The City shall provide available data on the actual City costs for previously completed arterial roadway improvement projects to assist in the development of planning level project costs for future projects and to include any project costs for previously completed projects with excess capacity available to serve future growth.

b. Ten-Year Growth Projections and Capacity Analysis.

   1) In consultation with City staff, determine land use categories to be included in the land use vehicle-mile equivalency table.

2) Identify the service units for new development and the average trip length. Using the 9th Edition of the Institute of Transportation Engineer's (ITE) Trip Generation Manual, incorporate trip generation and pass-by trip rates.
3) Perform an analysis of existing conditions. This will include a determination of roadway capacities, volumes, vehicle-miles of supply, vehicle-miles of demand, existing excess capacity, and existing deficiencies.
4) Project traffic conditions for the ten-year planning period, the target year for the impact fee growth projections. This will include growth and new demand by service area. Determine the capacity available for new growth.

c. Roadway Impact Fee Capital Improvements Plan

1) Assist the City in developing a Roadway Impact Fee Capital Improvements Plan (CIP) which will include cost projections for anticipated projects to be included in the study. The Roadway Impact Fee Capital Improvements Plan will include existing oversized facilities and proposed facilities designed to serve future development. The Roadway Impact Fee Capital Improvements Plan shall include a general description of the project and a project cost projection. Planning level cost projections for future projects will be prepared based on discussion with local roadway construction contractors, City staff, and previous experience with roadway construction costs. The City shall provide actual City cost information for previously completed projects with excess capacity and any cost contribution to County, State, Federal, or developer constructed projects.

2) Due to the variety of unknowns associated with roadway project costs projections (ROW acquisition, utility relocations, etc.), the planning level project cost projections utilized in the roadway impact fee analysis should not be used for any future capital improvement planning within the City.

3) Identify the portion of projected improvements required to serve existing demand and the portion of project improvements required to serve new development within the 10-year planning period.

d. Maximum Assessable Roadway Impact Fee Calculation. Using the newly developed ten-year growth projections, roadway impact fee Capital Improvements Plan, and capacity available for new growth, determine the cost of roadway improvements by service area, the maximum costs per service unit, and the resulting maximum assessable roadway impact fees by service area. Incorporate the financial analysis performed in the following task to determine the maximum assessable impact fee per service unit. If the following task is not performed 50% of the Impact Fee Capital Improvements Plan will be used as the credit calculation.

e. Financial Analysis. Using the impact fee eligible capital improvement costs and projected service units, the financial subconsultant will calculate maximum assessable full-cost recovery impact fees for the designated ten-year period for roadway facilities. The financial subconsultant will provide forecasted cash flows for the maximum assessable impact fee for the ten-year period based on projected capital improvement program's implementation schedule (if available) and growth in projected service units.

f. Roadway Documentation. Provide both a draft and final Roadway Impact Fee Report. The report will include:

1) Roadway service areas;
2) Land Use Assumptions
3) Narrative of the impact fee methodology;
4) Impact fee calculations;
5) Roadway CIP; and
6) Supporting Exhibits.

g. At the request of the City, review the proposed Roadway Impact Fee Ordinance as prepared by the City Attorney. It is anticipated the City Attorney will require exhibits from the Roadway Impact Fee Report to be included in the ordinance. It is recommended that the City coordinate with their Attorney to ensure they will be able to prepare the ordinance public hearings and approval task.

h. Meetings. Prepare for and attend the following meetings:

1) Two (2) meetings with City staff to discuss and review the Roadway Impact Fee CIP;
2) One (1) meeting with City staff to review the proposed Maximum Assessable Roadway Impact Fees; and
3) One (1) meeting with City staff to discuss the public hearings and approval process.

i. Deliverables

1) Five (5) copies of the Draft Roadway Impact Fee Report;
2) Electronic (.pdf) copy of the Draft Roadway Impact Fee Report; and
3) Upon final approval of the Roadway Impact Fee Analysis and new ordinance by the City Council, five (5) originals and one (1) electronic (.pdf) copy of the Final Roadway Impact Fee Report will be provided.
4) GIS shape file format of project created maps
5) Community Viz project created data

3. Prepare for and attend each of the following meetings during the Public Hearings and Approval Process.

a. Prepare for and attend one (1) Capital Improvements Advisory Committee (CIAC) / City Council workshop to present fundamentals of Roadway Impact Fees, a summary of the Roadway Impact Fee methodology, Land Use Assumptions, and the CIP and Maximum Assessable Roadway Impact Fees;
b. Prepare for and attend two (2) CIAC public hearings to present the Land Use Assumptions, CIP, and Maximum Assessable Roadway Impact Fees;
c. Prepare for and attend two (2) City Council public hearings to present the Roadway Impact Fee, including the Land Use Assumptions, Roadway Impact Fee CIP and Maximum Assessable Impact Roadway Fees; and
d. Prepare for and attend one (1) City Council meeting where it adopts the ordinance and establishes the actual Roadway Impact Fees.

Task VIII – Downtown Parking Strategy

1. Working with the City of Pflugerville, define the boundaries of the downtown parking area. It is envisioned that this will primarily encompass the Old Town area, but could be extended. As part of the parking strategy, the City of Pflugerville would like to study the potential for pedestrian crosswalks along Pecan Street, between 10th and Railroad, and Railroad, between Pecan and Wilbarger.

2. Perform field work to verify the parking availability in this defined area and determine the parking parameters (meters, signage, time of day limitations, etc).

3. Perform pedestrian counts at the locations outlined above. A total of four pedestrian counts will be conducted and BGE will work with the City to determine the time of day as well as the general locations.

4. Conduct meeting with an open house format that will encourage area retail and commercial businesses to provide input as to what the parking and possible pedestrian issues are.

5. Given the information gained from both the area businesses and the field work, determine the best parking strategy for the City of Pflugerville. This could include items such as additional signage, parking time of day limitations, construction of a parking facility, etc.

6. In addition, based on the field data, BGE will make recommendations as to location and type pedestrian crossing and/or signage should be installed.

Task IX – Wayfinding Development

1. Identify significant and historical features within the City of Pflugerville to be included within the City wide wayfinding program. This includes assistance in developing the policy recommendation with regard to feature eligibility and wayfinding applicability.
2. Coordinate with the City Staff on applicable signage along Pecan Street. Recommend locations that best serve to identify the identified feature while

minimizing the number of signs. It is important to have a balance of signs so as not to confuse the traveling public.

3. Prepared a schematic that highlights the proposed Pecan Street wayfinding signage locations. In addition, prepare a City of Pflugerville sign standard that can be used for Pecan Street signage as well as future signage needs.

Exhibit A
Data to be furnished by the City of Pflugerville

A. Land Use Data Requirements

1. Current Community Viz model.

2. Citywide building permit activity and building locations for the previous 24 months.

3. As provided by Travis CAD, citywide building height survey (number of stories for all commercial and retail buildings) and nonresidential intensities (floor-to-area) ratio.

4. Observed residential densities on a citywide basis. Household per acre will be sufficient.

5. Surveyed parking lot supply and downtown parking availability. Included in the downtown parking availability should be the current parking parameters (meters, signage, time of day limitations, etc).

6. Land-use mix if different from the adopted Land Use Plan highlighted in the Pflugerville 2030 Comprehensive Plan. It is assumed that this information is mostly complete and in GIS database format.

7. All existing land uses information for use both in the development of the Land Use Assumption as well as the development of Impact Fees (if requested).

B. Travel Demand Model Requirements

1. The City shall assist the BGE team in obtaining the most current CAMPO and 2035 Travel Demand Model.

2. The City of Pflugerville shall supply any traffic data that has been collected during the last 12 months. This could include intersection turning movement counts and/or 24-hour mechanical counts.

3. The City shall provide in GIS database format, pertinent roadway information. This could include sidewalk information, speed limits, and roadway geometrics.

C. Downtown Parking Strategy Requirements

1. All parking information pertaining to the identified downtown parking area.

Exhibit B
24-Hour Bi-Directional Traffic Count Locations

1. Wells Branch Parkway (east of FM 1825)
2. FM 1825 (east of Vision Drive)
3. Heatherwilde Boulevard (north of Wells Branch Parkway)
4. Pecan Street (between Dessau Road and Railroad Avenue)
5. Pflugerville Parkway (west of Railroad Avenue)
6. Heatherwilde Boulevard (north of Pflugerville Parkway)
7. Kelly Lane (east of SH 130)
8. Rowe Lane (east of SH 130)
9. Weiss Lane (north of Pflugerville Parkway)
10. Pflugerville parkway (east of SH 130)
11. FM 685/Dessau Road (north of Pecan)
12. Pflugerville East Road (Pecan Street) (east of SH 130)