

## **TRAFFIC SIGNAL MAINTENANCE SCOPE OF SERVICES**

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## GENERAL INFORMATION

The City of Pflugerville is one of the fastest growing communities in the nation and is located approximately 20 miles north of Austin. The City has witnessed significant increase in population from approximately 19,500 in 2000 to approximately 48,500 in 2010 per the Census Bureau. The population is anticipated to exceed 60,000 in the 2020 Census.

The City requires assistance in the operations and maintenance of their growing number of traffic signal and flashing beacon infrastructure consisting of approx. 45 traffic signals and 42 flashing beacons.

## SCOPE OF WORK

The Contractor shall provide routine preventive maintenance, scheduled repairs, emergency repairs, and new equipment installations/upgrades to traffic signals, traffic signal equipment, flashing beacons, and other related equipment by duly trained and qualified personnel as well as coordinate installation of new signals. All preventive maintenance and scheduled repairs will be billed at an established flat rate, with additional emergency work/unscheduled repair paid at hourly labor rates and vehicle and equipment rates, in accordance with the cost proposal per this RFP.

The Contractor shall provide and maintain emergency service response of the City's traffic signals, and flashing beacons on a twenty-four (24) hour a day, seven (7) days per week basis, including all holidays.

The Contractor must provide vehicle(s) to be used by the Contractor's Technicians which shall be equipped with warning beacon/strobe lights; traffic cones; construction warning sign; a hydraulic bucket capable of reaching a height of at least twenty-eight (28) feet from the roadway surface; necessary computer laptop for programming, maintenance and testing of traffic signal controllers and various equipment; and communications equipment for dispatch.

The Contractor must possess, and have readily available in functioning order, all required tools, equipment, apparatus, facilities, and materials needed to perform all work necessary to maintain and repair the traffic signals, and flashing beacons in the City in compliance with current City and TXDOT standards and specifications. All excess materials and equipment in the Contractor's inventory shall be the property and responsibility of the Contractor until such materials or equipment are used or installed in the City.

The Contractor shall furnish temporary flashing beacons and other appropriate replacement equipment for non-operational traffic signals. Contractor furnished temporary spare equipment shall be equivalent to the component being replaced in manufacture, make, and model. The Contractor shall provide traffic control/lane closures that conform to Federal Highway Administration (FHWA) – Texas Manual on Uniform Traffic Control Devices (TXMUTCD).

The Contractor shall cooperate with the City and its agents in recalibrating traffic signal coordination timing and progression and shall make all information available to City. The Contractor shall change the timing of traffic signal only upon the direction or advance written approval of the City or its agents. During emergency conditions, the Contractor shall assure full cooperation with the City and those employees of the City and other agencies as indicated.

The Contractor shall not represent the City in matters of policy or procedures under this contract, shall not make any reference to City policy or procedures, and shall refer all questions or inquiries from the public regarding policy and procedures, or terms and conditions of this contract to the City.

### Routine Preventative Maintenance

The Contractor will provide routine preventative maintenance for each traffic signal as described in the following list and subsequent detailed sections of this document:

- Annual Preventative Maintenance – the contract shall begin with the Annual Preventative Maintenance checklist
- Semi-Annual Preventative Maintenance – to initiate 6 months after Annual Preventative Maintenance is complete

The Contractor will be required to furnish and use a preventive maintenance checklist form approved by the City for each inspection. The Contractor will be required to provide one electronic copy of the maintenance checklist to the City following each inspection, to maintain a copy of the maintenance checklist in the traffic signal controller cabinet, and to maintain a copy of the maintenance checklist at the Contractor's office of records.

### Semi-Annual Preventative Maintenance

The Contractor shall submit perform the following maintenance tasks at each location on a semi-annual basis and submit a report summarizing all activities and findings:

1. Detectors and Loops
  - Visually inspect for exposed wires, cracks, and/or pot holes and recommend repairs or replacement as needed
  - Check and re-calibrate detection configurations for all detector types
    - i. This includes detection zones for video and radar detection
2. Controller Cabinet
  - Measure voltage level at service entrance in cabinet and record
  - Vacuum and clean controller cabinet and contents; includes removing, cleaning, and replacing cabinet air filters.
3. Battery Backup Systems
  - Test battery charge and report if replacement is needed
  - Measure voltage level at service entrance in cabinet and record
  - Vacuum and clean controller cabinet and contents
4. Controller Cabinet
  - Check wire schematics and records to make sure they are in the cabinet. Notify the City if they are not present
  - Inspect terminal blocks and tighten as needed
  - Lubricate hinges and lock
5. Signal Heads
  - If visual inspection warrants, clean and polish signal lenses and reflectors
  - Align signal heads as needed
6. Miscellaneous

- Adjust all mast arm mounted street name signs as needed
- Check condition of paint (frameworks, heads, cabinet, poles, and other appurtenances) and make recommendation for repainting as needed.
- Check cabinet inventory list and update as needed. Provide an electronic copy to the City.

### Annual Preventative Maintenance

In addition to the quarterly and semi-annual preventative maintenance activities, the Contractor shall conduct Annual Preventative Maintenance consisting of the following tasks within the first two (2) months of the start of each contract period:

1. Signal System Assessment
  - Perform conflict monitor (MMU) test and submit printout. The City shall furnish appropriate testing equipment to the Contractor.
  - Check for water accumulation and reseal ducts
2. Night Inspections
  - Walk intersection and check for proper visibility and operation of traffic signal heads, pedestrian signal heads and flashing beacons
  - Check operation of safety lighting and recommend repairs and replacements to the City as needed.
3. Signal Heads
  - Check the mounting and wiring of each signal head using bucket truck and adjust/tighten the mounting, as required
4. Miscellaneous
  - Check any other equipment utilized during the term of the Agreement but not specifically listed (ie, cameras, radios, etc).
  - Tighten anchor bolts
  - Emergency preemption detection lenses must be cleaned/polished and aligned
  - Megger test all loops and make recommendations
  - Megger test cabinet resistance to ground
  - Load test all Battery Backup System batteries
  - Replace lithium batteries on PROM module, if equipped, every two years

### Inventory Records

Contractor shall maintain an inventory list of the equipment in the controller cabinet at each location. The inventory should include the model, manufacturer, serial number, and quantity of each piece of equipment and installation date. The inventory list shall be continuously updated and a copy shall be furnished to the City every six (6) months in a digital format specified by the City.

### Scheduled Repairs

The Contractor shall investigate and determine the corrective requirements for each reported malfunction, failure, or outage of the traffic signal system. The Contractor is to provide the City with a list of items recommended for corrective action. Repair work will be performed by the City or by the contractor at the City's discretion. All replacement parts must be equal or equivalent to existing

equipment. All repair work including parts and installation must be approved by the City prior to proceeding. Approved work will be paid for on a time and materials basis per the fee schedule submitted by the Contractor. Typical repair work includes but is not limited to the following elements:

Signal Indications and Signal Heads, Signal Wiring, Overhead Signage, Vehicular Detection equipment, Pedestrian Detection Equipment, Ground Boxes, Cabinet Foundation, Cabinet Components (Load Switches, Relays, Surge Suppressors, I/O Cards, Breakers, Fuses, etc), Controllers, Cameras, Preemption Equipment), Communications Equipment, Luminaires, Flashing Beacon Equipment, etc.

No permanent change shall be done without prior approval of the City. Whenever equipment is replaced or removed, the City representative shall be notified by phone and emailed within twenty-four (24) hours

When entire parts or equipment become obsolete or are deteriorated beyond repair, report such conditions to the City and provide satisfactory evidence that replacement is necessary. Should replacement of a controller, camera, radar, or communication unit is required, the serial number of any unit removed will be recorded and the removed unit should be delivered to the City. The Contractor shall handle all warranty and Return Merchandise Authorization (RMA) repairs with equipment manufacturers and vendors on behalf of the City.

### Emergency Repairs

The City may request that the Contractor perform unscheduled Emergency Repairs on the traffic signal system not covered by routine preventative maintenance and scheduled repairs. This work shall be performed on a time and materials basis in accordance with the unit costs provided in the Contractor's proposal or by a negotiated cost.

The Contractor shall provide response and service on a twenty-four (24) hour, seven (7) day per week basis. Immediate action shall be taken to safeguard the public any time a signal installation becomes partly or totally inoperative from any cause whatsoever. The Contractor shall provide the City with a contact name and phone number of personnel responsible for 24/7 services. The maximum response times shall be as follows:

1. Emergency and accident maintenance – one (1) hour
2. Repair/replacement of pedestrian equipment (signals and detection) – two (2) hours
3. Replacement of burned out signal faces – four (4) hours
4. All other signal maintenance – twenty-four (24) hours

Signal on flash, signal blackout not caused by a power outage, and any malfunction of pedestrian signals shall constitute an emergency. The City may extend the maximum response time for maintenance on a case-by-case basis if the signal remains operational in a satisfactory manner and the condition poses no immediate hazard to the public.

Repetitive failure to meet response times described above shall be deemed sufficient cause for the City to terminate the contract.

## New Equipment Installations and Upgrades

The Contractor shall install new equipment and upgrade existing equipment at the direction of the City. The City will typically provide the equipment needed for installation and supply it to the Contractor. In instances where the City utilizes the Contractor to procure the equipment, the Contractor will supply an estimated invoice for materials and installation costs to the City for approval prior to procurement and installation of equipment.

Compensation for installation of new equipment as identified above will be paid at the hourly labor rates and vehicle and equipment rates, in accordance with the Cost Proposal. Material markup will not exceed the value specified in the Cost Proposal.

## System Integration

The City may request the Contractor to assist with the deployment and integration of a Central Control Software/Advanced Transportation Management System (ATMS). The Contractor may sub-contract this scope of work with an appropriate vendor, as approved by the City, that can provide expertise on City's preferred choice of a Signal Central Control System.

## New Signal Installations

The selected Contractor shall be required to coordinate with the City for any new traffic signals installed by another project under contract with the City or by another project under contract with a private party under the City's jurisdiction. The Contractor will be responsible for assuming maintenance responsibilities for all new traffic signals following activation.

Compensation for reviewing new traffic signals as identified above will be paid at the hourly labor rates, and vehicle and equipment rates, in accordance with the Cost Proposal.

## Extra Work

New and unforeseen work will be classed as "extra work" when the City determines that such work is not covered by any of the various items for which there is a cost proposal or unit cost, or by a combination of such items. In the event portions of such work are determined by City to be covered by none of the various items for which there is a cost proposal, unit cost, or combination of such items, the remaining portion of such work will be classified as extra work. Extra work also includes work specifically designated as such in this RFP.

The Contractor shall submit a scope of work and cost proposal to The City (within 48 hours of a request) for review and approval prior to performing any extra work. If approved, the City shall provide the Contractor (within 24 hours of approval) with a written work order for Contractor to furnish labor, materials, and equipment therefore.

## Reporting

The Contractor shall provide a computerized quarterly activity report to the City by the fifteenth (15) working day of each month for the previous month. This report shall include documentation for semi-annual and annual preventative maintenance when applicable. The report shall be sent via email to the City with the invoice. No payment will be made without submittal of the report. The report shall include Unscheduled and Emergency Response Work; Scheduled Repairs; and Preventative Maintenance. Note:

All data gathered and stored by the Contractor while under contract with the City is the property of the City. In the event that the City no longer contracts with the Contractor, full data records will be given to the City in an electronic format.

### Equipment

The Contractor shall maintain an inventory of signal heads and electrical components and hardware that are typically required for standard industry practice for routine and emergency repairs. The Contractor shall also maintain an inventory of at least two (2) timber poles that may be used for temporary span-wire operations for an approach during an emergency signal pole knockdown situation.

The Contractor shall be subject to a random inquiry of inventory levels and required equipment by the City staff. All materials list shall be listed by the MUTCD sign codes and are standard roadway sizes. All materials shall be high intensity grade reflective sheeting unless otherwise directed by a City representative.

### Spare Inventory

Contractor shall have the following materials on the truck on a daily basis:

- 2 signal heads with LED inserts
- 1 traffic signal controllers
- 1 conflict monitor (MMU)
- 4 load switches
- 2 flasher load switches
- 4 loop detector cards
- 4 DC isolators
- 2 APS push-button units and 2 non-APS push button units
- 2 Countdown pedestrian display units

### Salvaged Equipment

The Contractor shall deliver any salvaged or salvageable equipment or material to the location in the City as directed by the Public Works Department. Any material or equipment declared non-salvageable by the Public Works Department shall be taken from the City and disposed of properly by the Contractor. Components such as mast arms and luminaries that are undamaged may be re-used at the direction of the City.

### Warranty Service

Any materials that are furnished by the Contractor shall be warranted for at least a period of one year or the manufacturer's warranty, whichever is greater. During the warranty period the Contractor shall make all communications to the vendor or manufacturer in order to get the appropriate item replaced. Once a replacement is made the Contractor shall notify the City personnel for their records. In the event of natural events such as storms, fires etc., the Contractor will not be held to any additional warranty of the product if the manufacturer's warranty had expired.

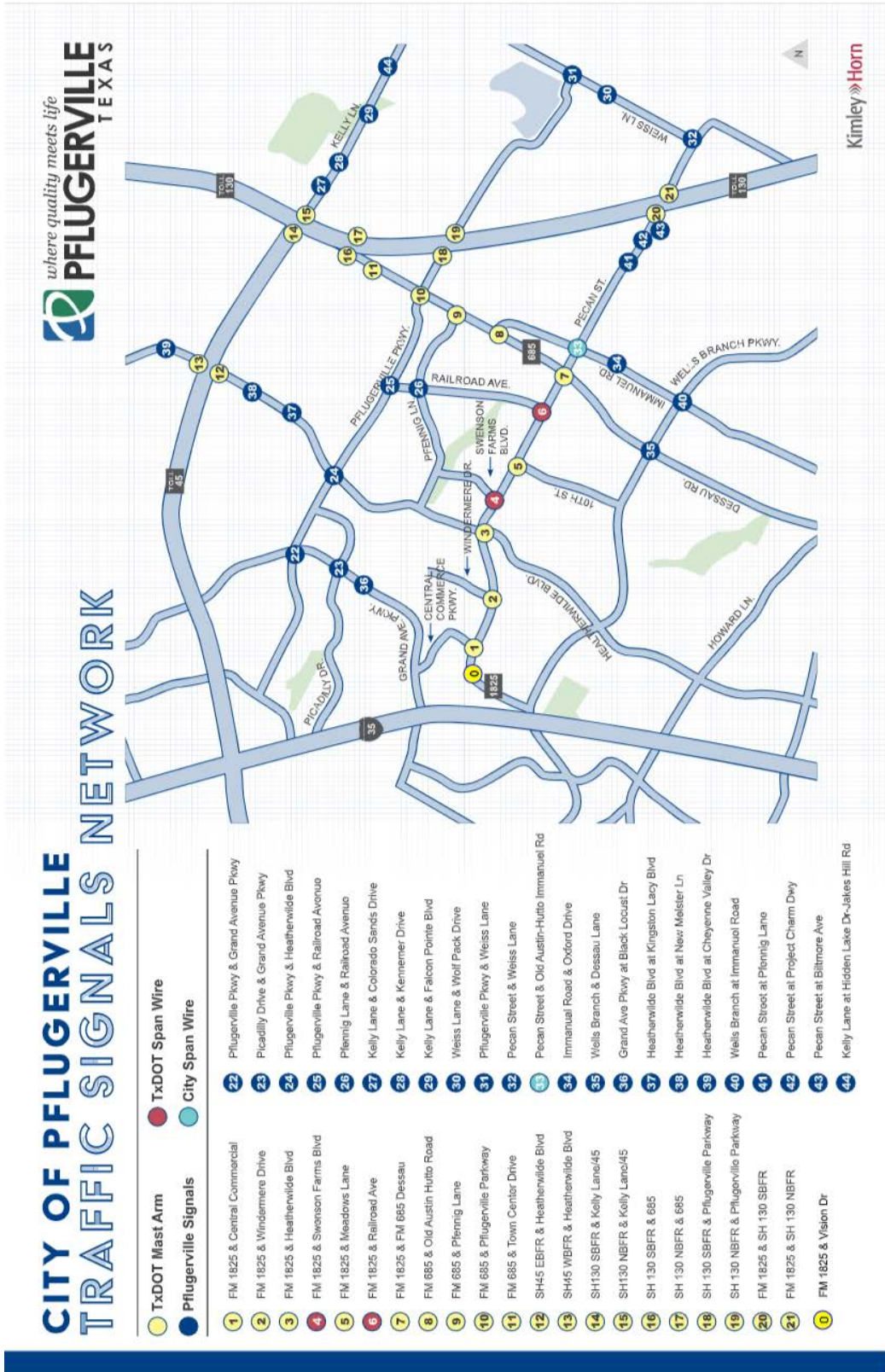
## APPENDIX

### List of Traffic Signals

0. FM 1825 @ Vision Drive
1. FM 1825 @ Central Commerce
2. FM 1825 @ Windermere Drive
3. FM 1825 @ Heatherwilde Blvd
4. FM 1825 @ Swenson Farms
5. FM 1825 @ Meadows Lane
6. FM 1825 @ Railroad Avenue
7. FM 1825 @ Dessau Road
8. Old Austin Hutto Road @ FM 685
9. FM 685 @ Pfennig Lane
10. FM 685 @ Pflugerville Pkwy
11. FM 685 @ Town Center Drive
12. SH 45 EB @ Heatherwilde Blvd
13. SH 45 WB @ Heatherwilde Blvd
14. SH 130 SB @ Kelly Lane
15. SH 130 NB @ Kelly Lane
16. SH 130 SB @ FM 685
17. SH 130 NB @ FM 685
18. SH 130 SB @ Pflugerville Pkwy
19. SH 130 NB @ Pflugerville Pkwy
20. SH 130 SB @ Pecan Street
21. SH 130 NB @ Pecan Street
22. Pflugerville Pkwy at Grand Avenue Pkwy
23. Grand Avenue Pkwy at Picadilly Drive
24. Pflugerville Pkwy at Heatherwilde Blvd
25. Pflugerville Pkwy at Railroad Avenue
26. Pfennig Lane at Railroad Avenue
27. Kelly Lane at Colorado Sands Drive
28. Kelly Lane at Kennemer Drive
29. Kelly Lane at Falcon Pointe Blvd
30. Weiss Lane at Wolf Pack Drive
31. Pflugerville Pkwy at Weiss Lane
32. Weiss Lane at Pecan Street
33. Pecan Street at Old Austin-Hutto/Immanuel Road
34. Immanuel Road at Oxford Drive
35. Dessau Lane at Wells Branch Pkwy
36. Grand Avenue Pkwy at Black Locust Drive
37. Heatherwilde Blvd at Kingston Lacy Blvd
38. Heatherwilde Blvd at Meister Lane
39. Heatherwilde Blvd at Cheyenne Valley Drive
40. Wells Branch at Immanuel Road
41. Pecan Street at Pfennig Lane\* (under construction)
42. Pecan Street at Project Charm Driveway\* (under construction)
43. Pecan Street at Biltmore Avenue\* (under construction)
44. Kelly Lane at Hidden Lake Drive\* (under construction)



Map of Traffic Signal Network



## List of Flashing Beacons

1. 10<sup>th</sup> Street and Settlers Valley
2. Oxford and Settlers Valley
3. Zola and Pflugerville Parkway
4. Applewood and Railroad
5. Kelly and Kennemer
6. Falcon Pointe
7. Kingston Lacy
8. Wolf Pack
9. Immanuel and Dove Haven
10. Settlers Valley and Heatherwilde
11. Picadilly
12. Grand Avenue
13. Railroad and Pfennig
14. Pecan Street and Swenson Farms