Text File

File Number: 20-0150

Agenda Date: 4/14/2020 **Version:** 1 **Status:** Consent Agenda

In Control: Public Works **File Type:** Agenda Item

Agenda Number: 9C.

Title

Consider and take action on a resolution authorizing an agreement with Paradigm Traffic Systems, Inc. through BuyBoard (Contract #524-17) for the purchase of Centracs Advanced Transportation Management System (ATMS) in an amount not to exceed $125,775 (Director of Public Works)

..Background:

Approval of this agreement will authorize the City to enter into an agreement with Paradigm Traffic Systems, Inc. through BuyBoard (Contract #524-17) for the purchase of Centracs Advanced Transportation Management System (ATMS) in an amount not to exceed $125,775.

The City of League City currently maintains 67 traffic signals with an expected growth of up to 75 traffic signals in the next 5-10 years. In order to efficiently operate and maintain this magnitude of complex signal systems, an ATMS system provides an industry standard of computer-based system management. The proposed ATMS software was thoroughly evaluated by the Public Works, Engineering, and Information Technology (IT) Departments. Selection criteria was based on the following; 1) compatibility with existing signal controls and traffic detection equipment, 2) manufacturer's support, 3) system performance reputation and longevity, 4) overall system functionality and flexibility, 5) future expandability, 6) overall cost impact, and 7) system utilization by other entities similar to League City.

The proposed ATMS was presented during the FY2020 Budget and CIP development process and was initially approved in an amount of $116,000 for the initial phase and incorporated into CIP - Traffic System Improvement TR1101A/TR1901 for implementation in FY2020, along with future funding in an amount totaling $925,000 over a three-year period, for future system expansion phases. During on-going traffic demand evaluations and implementation of Phase 1, a fourth traffic corridor was added and budgetary adjustments for future phases were identified requiring additional funding. The additional funding will be proposed in the FY2021 - FY2025 CIP development process. Phase 1 budget shortfall in the amount of $9,775 ($116,000 + $9,775 = $125,775) will be funded from Traffic Operations Budget. Proposed funding breakdown is as follows:

	Current CIP Funding	New CIP Funding	Total CIP Funding
Phase 1 (FY20)	$116,000*	N/A	$116,000
Corridor 1 (FY21)	$320,000	$137,936	$457,936
Corridor 2 (FY22)	$302,500	$269,920	$572,420
Corridor 3 (FY23)	$302,500	$298,541	$601,041
Corridor 4 (FY24)	N/A	$372,073	$372,073
Total CIP Funding	$1,041,000	$1,078,470	$2,119,470
			$9,775* (Operations Budget)
Grand Total			$2,129,245 (5 YR System Total)

*Combined Phase 1 total $116,000 + $9,775 = $125,775.

On February 27, 2020, Public Works and Engineering Staff along with the manufacturer's representative provided a presentation to the City's Traffic Committee. The presentation provided information on the functionality and system operations and maintenance aspect of the base ATMS module. Additional information on add-on modules for future expandability along with the associated cost were also discussed. Discussions identified the advantages of consideration to add the Maintenance Management System (MMS) module ($48,000) to the initial purchase of the base system ($77,775) for a combined purchase cost of $125,775, requiring an additional amount of $9,775, which will be funded from the Streets/Storm/Traffic Department Operations Budget. Recurring maintenance cost in the amount of $18,935 for Phase 1 ATMS will begin in FY2021 and will be incorporated in the FY2021 budget development process.

The proposed software will enable us to better maintain, track, and increase the efficiency of our traffic signal systems to improve traffic flow throughout the City. The Centracs base package provides the backbone of the ATMS and a high level of system management and functionality. The base package will be utilized to monitor and control existing traffic signals in real time as well as alerts to problems with traffic signals, such as red flash condition and vehicle detection failure. This enables staff to diagnose and make remote repairs which minimizes the disruption of traffic and associated signal downtime.

The MMS module provides dispatching and tracking of both employees and equipment. This software module will increase staff work efficiency as well as minimize signal failure downtime because it monitors, measures, and responds to problems through automatic ticket creation and dispatch of technicians before the traveling public notices a disruption of service. The included inventory controls allow for real time location-based asset tracking, reporting, and logging of the entire assets' life cycle.

Future system expansion will include the addition of Edaptive modules, vehicle detection and associated controllers for multiple traffic corridors. This addition allows for automated real-time adaptive signal control and cycle optimization of traffic signals which will adjust signal timings in response to real-time events. This will increase roadway efficiencies and reduce commuter delays by use of software by all traffic signals working together as one system. Software enables proactive optimization of traffic signals even as traffic conditions change through both real-time and historical data. Software provides uninterrupted data collection and monitoring for increased signal performance through vehicle detection systems to adjust to traffic conditions on a continuous basis. Data collection abilities will reduce or eliminate the need to obtain traffic counts from an outside source. League City staff will be able to review analytical and historical data, then will be able to make routine adjustments to maximize the signal timing efficiencies which will reduce the need to obtain signal timings from an outside source. The reduction of third-party services will provide a sufficient overall cost saving.

Reasons why the Centracs software was chosen -

- Has the functionality identified as needed by staff
- Compatibility with existing traffic controllers
- Produced by a well-established company
- Local software support by a trusted vendor
- Very intuitive interface that is easy to learn
- 30 agencies in Texas currently use this software as well as local agencies such as TxDOT Houston District and Harris County
- Asset management
- Dispatch scheduling and on-call notification planning.

- Location-based storage and retrieval of drawing manuals and other documents in industry format such as PDF, and Word
- Real time alerts and alert escalation to increase awareness of system disruption

The initial Phase 1 implementation will be followed-up by a 4-year progression of system expansion that will ultimately encompass all major traffic corridors within the City, the associated annual cost is evaluated each year during CIP development and adjusted accordingly based on real-time need of controllers, vehicle detection equipment, and Edaptive software module for the specific traffic corridor.

Detailed System Cost is as follows:

- FY2020 Phase 1 - $125,775: Base ATMS Module $77,775, MMS Module $48,000 (Annual Maintenance $18,935)

- FY2021 Corridor 1 - $457,936: FM 518, Maple Leaf to Park Ave
  16 signalized Intersections: Software - $9,936; Controllers - $48,000; Vehicle Detection - $400,000 (Annual Maintenance $8,464)

- FY2022 Corridor 2 - $572,420: (Five Corners) FM 518, Texas Ave to Lawrence Rd & FM 2094, Stadium Dr to Lawrence Rd
  20 Signalized Intersections: Software - $12,420; Controllers - $60,000.00; Vehicle Detection - $500,000 (Annual Maintenance $10,580)

- FY2023 Corridor 3 - $601,041: LC Parkway, Bay Area Blvd to Isla Vista (Mar Bella)
  21 Signalized Intersections: Software - $13,041; Controllers - $63,000; Vehicle Detection - $525,000 (Annual Maintenance $11,109)

- FY2024 Corridor 4 - $372,073: FM 646, Bay Creek Dr to South Shore Blvd & FM 517, Cemetery Rd to Calder Rd
  13 Signalized Intersections: Software - $8,073; Controllers - $39,000; Vehicle Detection - $325,000 (Annual Maintenance $6,877)

Total Capital Cost over 5 years: $2,129,245

Total Annual Recurring Operations Cost (Maintenance) after 5-year implementation: $55,965

Staff is requesting Council's consideration to approve the purchase in an amount not to exceed $125,775, utilizing the BuyBoard Contract #524-17.

Attachments:
1. Data Sheet
2. Proposed Resolution
3. Exhibit A - Agreement with Paradigm Traffic Systems, Inc.
4. CIP Project Sheet
5. Map of Corridors
6.. Report Card

FUNDING
{X} Funds in the amount of $116,000 is available from Fund 5105 with expenses charged to project expense string TR1901-CONSTRUCT-TS-CASH and $9,775 is available from Streets Traffic Control

Supplies operating budget account# 3300000-51650.

STRATEGIC PLANNING
{X} Develop and Maintain Infrastructure

Resolution No. 2020-46

APPROVED
APR 14 2020
CITY COUNCIL