

**Submitted By:** Transportation & Public Works  
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**Project Type:** Streets/Roads/Bridges related projects - Transportation & Public Works Department  
**General Program Goal:** Economic Prosperity

**Previously Submitted and Rejected:** Yes - SPLOST 2020  
**Continuation Project:** No

**Project Total Cost: \$ 7,080,000**      **Total Annual Operating Cost: \$ 51,000**

**Abbreviated - Project Description:** Project is to improve the safety and operations of the roadway network through current technology and prepare for the future of transportation. The project will include technology such as: fiber optic cable, connected vehicle capability, pedestrian/bicycle detection, adaptive traffic signal systems, advanced vehicle detection technology, emergency vehicle/transit detection, and other emerging transportation technology.

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**Project Location/Address:** Athens-Clarke County

**Is the Site currently owned by the Unified Government of Athens-Clarke County?** Yes

**Is the Site within State Highway Rights-of-Way?** Yes

**Site Specific Information:** Athens-Clarke County Roadways.

**Does this Project require the acquisition of any land rights, whether existing sites, new site, easements, or Rights-of-Way?** Unsure

**Project/Program Description:** Smart City Technology project will implement fiber optic connectivity in tandem with emerging transportation technology to improve Athens-Clarke County's transportation network and prepare for the new generation of connected and autonomous vehicles to reduce congestion and improve roadway safety.

**Project Mission Statement/Selection Criteria:** The purpose of this project is to improve the safety and operations of the existing roadway network through current technology and prepare for the future of transportation. The project will include technology up to and including: fiber optic cable, connected vehicle capability, pedestrian/bicycle detection, adaptive traffic signal systems, advanced vehicle detection technology, emergency vehicle/transit detection, and other emerging transportation technology. To improve current traffic operations, this project would be eligible to convert the current time of day signal system to an adaptive traffic signal system. An adaptive traffic signal system relies on artificial intelligence to predict and adapt to actual traffic conditions as they change throughout the day or with special events including UGA games. To improve safety, this project would be eligible to fund preemption systems that detect the potential for a collision at a traffic signal and modify timings appropriately. Vehicle connectivity for pedestrian and bicycle

detection within intersections and mid-block crosswalks. To improve future connectivity, this project would be eligible to fund vehicle to infrastructure (V2I) communication which is part of preparing the network for connected and autonomous vehicles. This capability broadcasts timing information to improve vehicular safety.

**How is this Project recommended/included in any approved ACCGov Land Use Plan, Master Plan, Corridor Study, or Service Delivery Plan?** N/A

**How is this Project included in the Madison Athens-Clarke County Oconee Regional Transportation Study (MACORTS) long-range Transportation Improvement Plan (TIP)?** Advanced Transportation Management System (ATMS) Project (V-8)

### PROJECT JUSTIFICATION

**How will the Project meet one or more of the Selection Criteria?**

**Promotes the Goal of improving Equitability of capital improvements throughout the Community:**

Smart technology for the roadways will improve sustainability for business with increased access, reduced freight delivery delays and community use through improved accessibility to the workplace by providing real time data for residents and commuters.

**Protects the community's existing Transportation Infrastructure Investments:** Completing the fiber optic connectivity with the signalized intersections, mid-block crosswalks, school flashers and safety corridors will allow for further advancements with the current facilities and invested equipment.

**Promotes the Upgrade and Continued Use of Alternative Transportation Facilities:** With advanced detection for pedestrians, bicycles and vehicle automation along the roadways and intersections transit and electric vehicles can reduce travel time delays.

**Promotes increased access to existing public facilities:** Intelligent technology to connected vehicles will provide traffic data through variable message signs and notifications of special hazards to reduce delay.

**Promotes increased usage of the Transit System, including improving Pedestrian access to Transit Facilities:** The smart connected technology capabilities with a complete fiber network will allow for advanced pedestrian detection to reduce the wait times for walking access even during high vehicle volumes by adaptive timing. Connected technology will also standardize additional pedestrian safety features including advanced signage, markings, smart ped signals, electronic button activation systems and ADA access

**Increases capital for Transit Services or expands the Transit System:** Fiber connectivity and smart technology can reduce transit travel times by detecting the public transit vehicles and providing real

time travel delay within the proximity of intersections therefore reducing the delay during peak vehicle volumes.

**Maintains or Improves Air Quality:** Smart technology for the roadway will provide connected vehicles and freight delivery advanced notifications for traffic data to reduce travel time delays.

**Reduces vehicle miles traveled and traffic congestion:** Advanced notice by variable message signs, automated detection and traffic data will reduce the traffic congestion and travel time delays.

**Reduces time spent traveling in vehicles:** Connected vehicle access to the network of intersections and advanced traffic data can allow for an alternative path to a roadway experiencing delays due to a crash or special event.

**Promotes Health and Safety:** Advance pedestrian, bicycle and crash data will improve safety for all roadway users offering less travel time, reduced congestion and automated pedestrian detection for vehicles within intersections.

### Triple Bottom Line Impacts

**Positive Benefits for the Economic Prosperity of Athens-Clarke County:** Connected vehicle technology allows for an improved interaction with citizens to human services, encourages greater use of sustainable transportation, improves access to jobs, reduces freight truck delivery/congestion, improves safety through alternative transportation detection, incident reduction and uses smart logistics to provide real-time traffic information for improved commuter mobility.

**Detrimental Impacts to the Economic Prosperity of Athens-Clarke County:** N/A

**Positive Benefits for the Social Well-Being of our Residents and visitors:** Smart road technology can provide safety by regulating the speed of our connected vehicles and implementing warning systems, but also transmit real time data and share information across the network, making it simpler and quicker to get around, to find parking, to commute effectively and communicate with each other.

**Detrimental Impacts for the Social Well-Being of our Residents and visitors:** N/A

**Positive Impacts on the Environment:** Smart technology allows for a reduction in emissions, time spent traveling on the roadway and delivery of supplies for business sustainability.

**Detrimental Impacts on the Environment:** N/A

**Positive/Negative Impacts on ACCGov Departments, Agencies, or other Organizations, if not covered in one of the above questions:** Completing the ACCGov Transportation fiber network will not only improve the roadway capabilities but also connect other ACCGov departments into the network for productive connectivity linking all facilities. The general condition and operation of the transportation system in ACCGov

typically has a very positive impact on all other local departments and agencies. The more efficient the system is creates a reduction on other departments/agencies response time and operating budgets.

## Project Costs

**Detailed project capital budget costs (to be funded from TSPLOST 2023 only):**

Project Costs (round to thousand)	Amount
1. Land Acquisition / ROW / Easement:	\$ -
2. Design Fees: (Min.12% of New Const.; 14% of reno,; 16% for LEED proj.)	\$ 65,000
3. Miscellaneous Fees: (Min. Minimum of 3% of Construction Costs – used for permitting, etc. Utilize minimum of 10% if land acquisition if necessary.	\$ 154,000
4. Construction:	\$ 5,140,000
5. Construction Contingency: (10% of the Construction line item)	\$ 514,000
6. Acquisition of Capital Equipment:	\$ -
7. Testing:	\$ 150,000
8. Project Management: (4% of the total budget line items above)	\$ 241,000
9. Project Contingency: (10% of the total budget line items above)	\$ 626,000
10. Public Art: Calculated at 1% of the Construction line item.	\$ 51,000
11. Other 1:	\$
12. Other 2:	\$
<b>Project Subtotal:</b>	<b>\$ 6,941,000</b>
14. Program Management (2% of Project Subtotal):	\$ 139,000
<b>TSPLOST 2023 Project Total:</b>	<b>\$ 7,080,000</b>

### Operating Cost

**Total Annual Net Operating Costs when Project is complete:**

*Only identify additional or net operating costs to be paid by ACCGov as a result of this Project. Identify the additional or net costs needed, above ACCGov's current operating budget, to operate the requested project; as well as any additional Project related revenues that would be generated. Provide budget costs for each identified category below.*

Operating Costs (round to thousand)	Estimated Impact for Annual Operating Expenditures
<b>TOTAL PROJECTED REVENUES FROM PROJECT</b>	
<b>PROJECTED EXPENDITURES</b>	
1. Personnel Costs: from Appendix A	
2. Annual Utilities:	
• Natural Gas:	
• Electrical:	
• Water:	
• Sewer:	
• Phone:	
• Solid Waste Collection:	
• Other:	
3. Operating Supplies:	
4. Equipment Maintenance:	50,000
5. Facility Maintenance:	
6. Other: Public Art Maintenance minimum	1,000
7. Other:	
8. Other:	
<b>TOTAL EXPENDITURES</b>	51,000
<b>NET OPERATING COSTS OF PROJECT:</b>	<b>\$ 51,000</b>

**Project Financing**

Is the proposed Project to receive funding from source(s) other than TSPLOST 2023? Yes

**Total Capital Financing for Project:**

If the proposed Project is to receive funding other than TSPLOST 2023, provide a listing of amounts from each of the categories listed below. Please round all dollar amounts to the nearest \$1,000.

Project Sources (round to thousand)	Amount
1. TSPLOST 2023 <sup>1</sup> :	\$ 7,080,000
<b>OTHER SOURCES</b>	
2. ACCGov General Fund:	\$ 60,000
3. ACCGov Enterprise Fund:	\$
4. State Grant:	\$
5. Federal Grant:	\$
6. Previous SPLOST:	\$
7. Other (describe):	\$
8. Other (describe):	\$
<b>TOTAL SOURCES:</b>	<b>\$ 7,140,000</b>

<sup>1</sup> If any additional sources of funding other than TSPLOST 2023 are indicated above, please provide information related to the source here. Be specific and be prepared to provide all necessary written approvals. (For example: Roadway projects that have approval for Federal Aid and will utilize TSPLOST 2023 funding for matching funds, you would need to provide specific written approval by GDOT)

**Describe the current commitments for the other sources funding this project:** Currently, the Transportation and Public Works biennial Capital Budget for fiber optic cable is \$30,000 which does not address the ATMS requirements.

Construction costs are based on the installation of approximately 45 miles of underground fiber optic cable:

- Installation of underground conduit \$15 per linear foot
- Installation of pull boxes \$400.00 each
- Installation/material cost of fiber optic cable \$1.50 per linear foot
- Splicing/communication equipment costs \$2,800.00 each location