

**THE UNIFIED GOVERNMENT OF ATHENS-CLARKE COUNTY
COMMISSION AGENDA ITEM**

SUBJECT: CY22 Pavement Management Program Project - Change Order to Existing Contract

DATE: May 8, 2023

BUDGET INFORMATION:

REVENUES:	\$ 290,908	FY21 General Fund Carryforward
	\$ 700,000	FY23 General Fund Capital Budget
	\$ 24,705,646	TSPLOST 2018 Project #07 (All Tiers)
	\$ 1,421,676	2022 GDOT LMIG Program
	<hr/>	
	\$ 27,118,230	Total Funds Available

EXPENSES:	\$ 26,446,690	Current Expenses & Encumbrances (Previous Paving Programs)
	\$ (780,888)	Change Order due to CY21 program reduction
	\$ 278,470	Paving Inspection Staff Salary & Benefits (Designated Funds)
	\$ 299,957	Materials Testing and Inspection Services (Designated Funds)
	\$ 150,857	Project Management Fees (Designated Funds)
	\$ 248,357	Future Program Funds (Designated Funds)
	\$ 200,000	Program Overall Contingency (Designated Funds)
	<hr/>	
	\$ 274,787	Available for CY22 PMP Project Change Order

FUNDING SOURCE: General Fund Capital Budget
TSPLOST 2018 Project #07
GDOT Local Maintenance and Improvement Grant (LMIG)

COMMISSION ACTION REQUESTED ON: June 6, 2023

PURPOSE:

To request that Mayor and Commission:

- a. Approve a change order in the amount of \$274,786.85 to the CY22 PMP unit price contract to reconcile added quantities associated with pavement rehabilitation and maintenance work items completed on the original roadway list and subsequent change orders already approved by Mayor and Commission; and
- b. Authorize the Mayor and appropriate staff to execute all related documents.

HISTORY:

1. In 1997, Transportation and Public Works Department (T&PW) staff implemented a comprehensive Pavement Management Program (PMP) to address maintenance needs of the public roadway system. T&PW staff evaluates and updates the program on an annual basis.
2. On November 7, 2017, the voters of Athens-Clarke County approved the TSPLOST 2018 Program, which included funding for Pavement Rehabilitation.
3. On December 5, 2017, M&C approved the initial TSPLOST 2018 Program Implementation Schedule identifying the annual PMP funding from TSPLOST 2018 Program #07 to be used in conjunction with other fund sources.
4. On March 6, 2018, M&C approved the first calendar year PMP Project list for the CY18 PMP to match the paving season, which typically starts in March and ends in November. Since 2018, paving projects have been grouped into calendar year (CY) rather than fiscal year (FY).
5. On March 27, 2019, T&PW issued a Notice to Proceed to Arcadis, U.S., to perform automated pavement condition assessment and inventory of all ACCGov roadways including inventory of signs and intersections utilizing an elementary pavement management software, Micro Paver (Paver™).
6. In April 2019, T&PW and other departments began utilizing Cityworks, a cloud-based work order and asset management system, to assign and track day to day operations for staff and to create an asset inventory.
7. On June 15, 2020, Manager Williams shared with the M&C an Interdepartmental Memorandum (IDM) with updates from T&PW on the new automated pavement rating initiative, including history and methodology used to assess the condition of roadway pavement. The memo describes the old rating system process in use through CY20 and the new pavement rating system to be implemented in CY21.
8. Between July 2019 and December 2022, Arcadis U.S., Inc and sub-consultant Infrastructure Management System worked with T&PW staff to identify roadway candidates for annual paving programs based on condition assessment performed in 2019 and hosted training on Micro Paver to T&PW staff.
9. On May 24, 2022, voters of Athens-Clarke County passed the TSPLOST 2023 referendum, which included Project No. 21, Pavement Rehabilitation.
10. On June 7, 2022, M&C approved the selection of 6 firms to provide on-call engineering services, one of which is KCI Technologies, Inc. The recommendations for these 6 firms was based on technical ability, experience, resources, references, interviews and overhead & profit/cost multipliers.
11. On June 10, 2022, M&C awarded a renewable unit cost contract in the amount of \$8,155,131.20 to Pittman Construction Inc.

12. On August 2, 2022, M&C approved a change order in the amount of \$281,243.95 to the CY22 Pavement Maintenance Contract to change the lane configurations and add bike lanes to Prince Ave as part of a pilot project.
 13. On October 11, 2022 T&PW staff received a letter from Pittman Construction requesting renewal to the CY22 PMP contract. This will be the first renewal to the existing contract.
 14. On December 6, 2022, T&PW staff provided Pittman Construction Company with a CY23 PMP roadway list and requested pricing from the contractor.
 15. On December 6, 2022, M&C authorized T&PW staff to apply for Local Maintenance Improvement Grant (LMIG) funding available through GDOT to be used towards the CY23 PMP project. Using GDOT's grant formula for municipalities based on population and centerline road miles, \$1,448,713.78 in LMIG funds are now available for ACCGov transportation projects.
 16. On December 13, 2022, M&C approved a second change order in the amount of \$200,000 to the CY22 PMP contract with Pittman Construction to perform work on TSPLOST 2018, Project 16 – Prince Ave. Corridor Improvement Project.
 17. On January 26, 2023, KCI Technologies, Inc. provided T&PW staff with a scope and fee proposal titled "Pavement Management Services and Right-of-Way Assets Inventory and Condition Assessment" including:
 - a. Core Task: pavement inventory and condition assessment with multiyear maintenance software training compatible with the ACCGov Geographical Information System (GIS) and City Works System for a cost not to exceed \$332,900; and
 - b. Additional Task: right-of-way infrastructure inventory and assessment including traffic signs, pavement markings, pavement striping, curb & gutter, sidewalk curb ramp, and traffic light inventory and condition assessment for a total fee not to exceed \$464,100 (available within 12 months from notice to proceed on KCI's Core Task).
 18. On January 27, 2023, Pitman Construction Company provided a unit price schedule for the resurfacing list and the preventative maintenance list to ACC T&PW staff in the amount of \$7,324,779.92.
 19. On March 7, 2023, M&C approved a contract for services through KCI Technologies to provide a comprehensive pavement inventory and condition assessment with multiyear maintenance report and software training for a cost not to exceed \$332,900.
 20. On April 4, 2023 M&C approve a one year extension to the construction contract with Pittman Construction Company, Inc. for the CY23 PMP project at a cost not to exceed \$7,324,779.92.
-

FACTS & ISSUES:

1. The Initial Project Statement for TSPLOST 2018 Project 07 Pavement Rehabilitation Program reads as follows:

***Project 07 – Pavement Rehabilitation**, provides funding to ongoing necessary preventive maintenance, road reconstruction, and rehabilitation activities for various streets and roadways throughout Athens-Clarke County. The project includes crack sealing, full depth patching, resurfacing, and roadway reconstruction with the intent to preserve and extend the life of existing roadways. All roads with widths that meet or exceed 28' will be considered for modifications to pavement markings with the goal of improving accessibility and mobility for all transportation modes.*

2. The Initial Project Statement for TSPLOST 2023 Project 21 Pavement and Bridge Maintenance Program reads as follows:

Project 21 – This program will provide continuation of preventive road and bridge maintenance, road reconstruction, and/or rehabilitation activities for various streets and roadways throughout ACC. Depending upon actual costs and funding availability, improvements may include, but are not limited to: crack sealing, full depth patching, resurfacing, roadway reconstruction with the intent to preserve and/or extend the life of existing roadways, in addition to bridge maintenance, bridge improvements, bridge repairs, and/or bridge replacements. This is a continuation of the SPLOST 2005, SPLOST 2011, and TSPLOST 2018 Program funding. To the extent allowed by law, budgeted project funds may be used as matching funds for leveraging grant opportunities. Additionally, to the extent allowed by law, other funding sources, including, but not limited to, grants, may be utilized to offset and/or reduce the project budget. Any unspent project funds that accrue as a result of the receipt of grants or other funding sources may be assigned to other approved TSPLOST projects.

3. ACCGov owns and maintains 626 centerline miles (1270 lane-miles) of public roadways, including collectors, arterials, and local streets.
4. Pavement maintenance activities require temperatures of at least 45 degrees, and therefore typically take place between the months of March and October. To match the paving season, T&PW staff began to group the delivery of paving activities into calendar year (CY) rather than the fiscal year (FY).
5. Since the change from Fiscal Year to Calendar Year, annual contracts have incorporated anticipated General Capital for each fiscal year. The CY22 PMP budget was approved in the amount of \$700,000 in FY23 General Capital paving funds.
6. The ACCGov annual Pavement Management Program prior to CY20 consisted of three main elements:
 - a. Inventory and evaluation of ACCGov roadways: T&PW Engineering Division staff inspect and evaluate the condition of arterial and collector roadways annually and every two

years on residential roadways. This evaluation is used to define the general condition of each road and generates a numeric score known as the Pavement Performance Index (PPI).

- b. Pavement maintenance activity selection: T&PW staff determines the appropriate maintenance strategy needed for each road segment, estimates the quantity and cost of such work, and prioritizes the roadways based on the numeric score and available funds.
 - c. Annual project development: T&PW staff develops the annual project list and maintenance activities based on the available budget and roadway conditions.
7. Prior to CY20, PPI condition scores were on a scale from 0 to 60 (0 for new roadway pavement and 60 for dirt roadway surface). A roadway segment with a PPI score ≥ 23 is considered to be poor to very poor and typically requires immediate rehabilitation and/or maintenance.
 8. T&PW requested PMP funding from the 2018 TSPLOST Program of \$50,000,000 to address the accumulated deficit roadways with a PPI score ≥ 23 as well as future pavement maintenance needs.
 9. The 2018 TSPLOST was approved with \$25,000,000 funding for the Pavement Maintenance Program. Funding for the PMP also includes General Capital Funds, SPLOST, and State/Federal LMIG Funds.
 10. T&PW requested PMP funding from the 2023 TSPLOST Program of \$75,000,000 to address the accumulated deficit roadways with a PCI score ≤ 40 as well as future pavement maintenance needs.
 11. The 2023 TSPLOST was approved with \$22,000,000 funding for the Pavement & Bridge Maintenance Program, including \$2,000,000 designated for Bridge Maintenance and \$20,000,000 for PMP projects. Funding for the PMP also includes General Capital Funds, SPLOST, and State/Federal LMIG Funds
 12. In calendar year 2020 (CY20), T&PW initiated a new PMP methodology consisting of the following elements:
 - a. Inventory and evaluation of ACCGov roadways: A consultant performs an automated pavement condition and distress data collection utilizing advanced and sophisticated equipment mounted on a vehicle. A condition assessment and numerical Pavement Condition Index (PCI) score is generated for each roadway segment based on industry standards and the American Societies for Testing and Materials (ASTM) Standard D6433. Automated rating and surveying will be conducted every four years on all ACCGov maintained public roadways.
 - b. Asset maintenance software & tools: PCI scores will be entered into PAVER™ (also known as MicroPaver) software, a Pavement Maintenance Management System originally developed in the late 1970s for the Department of Defense (DOD) to manage its vast inventory of pavements. The PCI for roads and parking lots became an ASTM standard in

1999 (D6433-09). PCI scores will be entered into the software every four years concurrent with future ratings.

- c. Pavement maintenance activities selection: T&PW staff will work with consultants and local contractors to set up the PAVER™ software with preferred pavement treatments and historic unit costs.
- d. Annual project development: T&PW staff will use the PAVER™ software to generate a multi-year program with alternative treatments based on the PCI based on available budget and preferred average PCI scoring.

13. Field automated rating and inventory collection began in June 2019 and was completed in summer of 2020. The IDM sent to the ACCGov Manager Williams and the consultant report provide further details on ACCGov current roadway conditions as compared to national ratings performed and observed by the consultant. The Infrastructure Management Services report was preliminary and T&PW staff presented annual programs lists based on condition assessment and ratings recorded from 2019 PCI scores.

14. In 2021, T&PW staff created an online map viewer that enables the user to view currently approved program progress, pavement condition index (PCI), and information tools available to the public. The current progress map can be accessed on the T&PW Pavement Maintenance Program web page: <https://www.accgov.com/5341/Paving>. A future map and schedule for the CY22 PMP will be posted on the Pavement Management Website (<http://www.accgov.com/5341/Paving>) once a Notice to Proceed is issued to the contractor, anticipated in July 2022.

15. T&PW staff uploaded 2019 rating scores into the PAVER™ program and have attended multiple virtual training sessions to learn how to utilize the software in order to maximize efficiency and transparency. CY20, CY21, CY22, and CY23 paving programs were development based on 2019 ratings.

16. Roadway PCI scores have been utilized to develop annual paving programs, including the CY22 PMP resurfacing list, based on available funding. The table below explains the scores and preferred applicable treatment in a perfect funding scenario:

PCI Range	Roadway Condition	Preferred Treatment (goal)
85-100	Excellent	Like new conditions – crack sealing planned four years from resurfacing
70-85	Very Good	Good to very good conditions that may\should receive crack sealing as preventative treatment

60-70	Good	Good conditions that should have received crack sealing and may be considered for other preventative treatments based on observed localized deteriorations.
40-60	Marginal	Acceptable conditions that requires immediate planning for heavier surface treatments, thin overlays and/or resurfacing. May require immediate localized treatments.
25-40	Poor	Not acceptable condition that requires overlays, surface replacement, base reconstruction, and/or possible subgrade stabilization.
0-25	Very Poor	Similar to poor conditions with high percentage of full reconstruction.

17. A roadway segment that scores poor or very poor ($PCI \leq 40$) typically requires immediate rehabilitation and/or maintenance. The CY21 PMP resurfacing and rehabilitation list was developed with focus on the lowest PCI scores and according to allocated and available budget. The objective is to resurface most roadway segments with $PCI \leq 35$, and add roadways with $PCI \leq 40$ nearby or directly adjacent to said poor roads to the proposed resurfacing CY23 PMP program.
18. Remaining roadway segments in poor to very poor condition & with $PCI \leq 40$ scores not selected within the Calendar Year resurfacing list, are aligned to be next on future Calendar Year paving programs. Additional roadway segments will be added based on allocated budget, projected deterioration rates, and approximate location to poor roadways ($PCI \leq 40$).
19. The Pavement Maintenance Program for ACCGov is funded by a combination of TSPLOST revenues, local General Fund capital funds, and state funding from GDOT.
20. The Cityworks Asset Management System is currently being used to assign work orders to staff, and geographically track this work over time. The software also has the capability to integrate with third-party systems, including the new Pavement Express software presented by KCI. This integration would allow roadway work orders to inform pavement condition ratings in real time. This would also allow paving inspectors to manually update pavement ratings through the Cityworks inspection module in addition to relying on the automated ratings being performed every 4 years.
21. In the next few months, T&PW staff will begin working with KCI Technologies to kick start automated inventory and assessment of ACCGov's roadway pavement for the 2023 calendar year with the goal to present to M&C a multi-year pavement maintenance and management plan based on multiple funding scenarios by fall 2023. In addition, and as part of the approved Core Task, staff will be trained to utilize Pavement Express software to track on-going pavement maintenance and run multi-year pavement programs scenarios based on funding.
22. This approach can provide important condition assessment of existing assets that need to be considered when developing a life cycle model for repair and replacement of selected items

in the public rights-of-ways. With KCI's proposal and Core Task, they will capture other assets in the rights-of-way during their survey and ACCGov will have the option to pursue a complete asset inventory and assessment, that will be available within the next 10 months, for an added cost as shown below:

a. Traffic Sign Inventory	\$63,000
b. Traffic Sign Reflectivity – Nighttime Survey	\$60,000
c. Pavement Marking Inventory	\$35,000
d. Pavement Striping Inventory	\$35,000
e. Pavement Marking Reflectivity – Nighttime Survey	\$32,100
f. Pavement Striping Reflectivity – Nighttime Survey	\$32,100
g. Curb and Gutter Inventory	\$63,000
h. Curb Ramp Inventory	\$35,000
i. Sidewalk Inventory	\$42,000
j. Sidewalk Condition Assessment (limited)	\$38,900
k. Traffic Light Inventory	\$28,000

23. KCI pavement inventory and condition assessment with multiyear maintenance software training and report is planned to be completed early 2024. KCI consultant and T&PW staff shall present a multiyear maintenance report based on PCI scores and available budget by fall 2023. Pavement maintenance activities shall include traditional mill and inlay, full depth reclamation, thin overlay treatment (preservation treatments), crack sealing, and patching based on observed PCI scores and recommendations from KCI consultants.
24. Based on observed pavement deterioration, T&PW's goal and industry standard sets a resurfacing frequency of 10 years for arterials, 15 years for collectors, and 20 years for local roads. This equates to resurfacing 75 lane-miles annually for a weighted frequency of about 17 years as opposed to the current 50-year cycle based on current funding. T&PW staff estimates that the annual PMP funding would need to be approximately \$9.2 million to achieve the recommended frequency, but this level of funding still does not address the backlog in paving that has accumulated from years of underfunding.
25. Pavement deterioration rates are different for each roadway; therefore, PCI score changes over time and when asset management tools are utilized over a number of years (5 to 20 years), it will allow departmental staff to better predict needed maintenance including resurfacing in the future. Proactive planning, periodic inspections, preventative maintenance, and adequate funding will better equip T&PW staff to accurately provide future paving and maintenance schedules.
26. Roadway surface deterioration is driven by multiple factors including:

- a. Traffic loading: this includes total annual traffic counts and the type of vehicles navigating the roadway.
 - b. Roadway construction and subsurface integrity: This can vary based on the roadway pavement thickness and whether there is adequate sub-base or not. For example, roadways built without graded aggregate stone are prone to swelling and deterioration much faster than roads that have the adequate subsurface construction.
 - c. Utility cuts: All utility cuts are prone to failure, and a lack of oversight and quality inspections may lead to substandard work that may fail, cause water to seep into cracks and cause major pavement failures.
 - d. Weather: Water and excessive low and high temperature will contribute greatly to escalating deterioration rates. With contraction and expansion comes more cracks that allow for more water to enter into the roadway subsurface which leads to roadway surface and subsurface failure.
 - e. Lack of funding: If there is lack of funding to implement preventative maintenance including crack sealing, thin patching, and thin overlay, the pavement surface will deteriorate faster and will require far more expensive repairs during the preparatory work prior to resurfacing.
27. The CY20, CY21 and CY22 PMP included the rehabilitation of 144 lane-miles of roadway (475 roadway segments) and preventative maintenance of 253 lane-miles (751 roadway segments), with expenditures over \$21,000,000.
28. Pittman Construction began work on CY22 PMP early August 2022, and two change orders have been issued for the new lane configuration and addition of bike lanes on Prince Ave funded by TSPLOST 2018, Project 16 – Prince Avenue Corridor Improvements – Sub-Project #1.
29. Pittman Construction has completed 98% of the CY22 PMP project with 100% completed on preventative maintenance list and 97% completed on the resurfacing/rehabilitation list. All CY22 PMP work, including added work on Prince Avenue Lane Configuration, is scheduled to reach substantial completion by May 30, 2023.
30. The proposed CY23 PMP work includes:
- a. **Rehabilitation (Resurfacing)** will be performed on 164 roadway segments totaling approximately 38 lane-miles of roadway at an estimated cost of \$6,373,358. *Rehabilitation activities typically include one or more of the following preparatory treatments followed by a structural asphalt overlay (commonly referred to as resurfacing): crack seal, chip seal, full-depth patch, milling and inlay, gutter milling, crack preventative layer, leveling, and full depth replacement. In addition to Shoulder buildup for rural roadways.*
 - b. **Preventative Maintenance**, work on 408 roadway segments totaling approximately 37 lane-miles of roadway at an estimated cost of \$951,422 including:

- i. Post-resurfacing crack sealing performed on entire roadway segments with pavement from 4 to 5 years old.
- ii. Deep patching with crack sealing performed on localized deteriorated areas within poor and marginal roadways (PCI < 50) which exceeds the Department's in-house capabilities to address.

Preventative maintenance activities are designed to preserve existing asphalt pavements and arrest deterioration before it becomes more serious and costly to repair. The effect of timely preventative maintenance is the extension of the life of roadway pavements, thereby delaying resurfacing and/or reconstruction for several years. Preventative Maintenance activities include one or more of the following treatments: crack seal, chip seal, and patching/repair of high severity potholes, corrugation, and rutting.

31. The pavement maintenance contract for the project typically allows for additions and deletions of work to provide contract flexibility and to meet program objectives. Any road appearing on this list not completed due to budget constraints or other reasons will be carried over and reconsidered as part of the CY23 PMP project.

32. To hold the contractor to a firm timeline, ACCGov T&PW & Purchasing staff made multiple changes and enhancements to the contract document and have incorporated the following:
 - a. The Contractor shall commence actual physical work on the Project within ten (10) calendar days of the date of the Notice to Proceed.
 - b. The Contractor and Sub Contractors shall commence actual physical preventative maintenance and resurfacing operations on the Project within twenty (20) calendar days of the date of the Notice to Proceed.
 - c. The Contractor shall assign one (1) rehabilitation and resurfacing crews and one (1) Superintendent and/or Project Manager, on full time basis, for rehabilitation operations for the duration of the Project.
 - d. Impose financial burden/liquidated damages on the contractor for delaying and/or abandoning the project after Notice to Proceed is issued.
 - e. Enhance renewal terms with the option for the contract to be renewed for two (2) additional one (1) year periods. The renewed contract(s) shall have the same terms and conditions, provided:
 - i. The existing pay item pricing is firm and any adjustments have been pre-approved.
 - ii. Contractor must have provided satisfactory performance, as determined by the ACCGov Project Manager, and both parties are willing to renew.
 - iii. Contractor must submit an official letter requesting renewal of the Contract prior to the original substantial completion date of current calendar year contract and no later than October 15 of the same year.
 - iv. Athens-Clarke County Mayor & Commission shall have the right to accept or reject the prices and or contract renewal at any time.

33. T&PW staff is working with the contractor to execute the CY23 PMP project contract and anticipates a Notice to Proceed by May 30, 2023.

34. Under the terms of the approved CY22 PMP unit price contract, the contractor completed work on the approved M&C roadway list as directed by T&PW staff. The required and directed work prompted overages on a number of unit price items, pushing totals beyond the estimated quantities set in the contract and subsequent change orders triggering the need for \$274,786.85 for additional unit items completed on the CY22 PMP Project.
35. This change order is to address overages for items associated with rehabilitation and resurfacing work including preparatory treatments and utility adjustment as follow:

ITEM CODE	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
ACC-P003	Asph. Conc. Patching 3 In. Thick; Incl Rec Asph. Conc. 19mm, Bitum Matl, Hyd. Lime and tack.	Square Yard	1,097	\$74.85	\$82,110.45
ACC-P003	Asph. Conc. Patching 3 In. Thick; Incl Rec Asph. Conc. 12.5mm, Bitum Matl, Hyd. Lime and tack.	Square Yard	1,764	\$70.85	\$124,979.40
407-0010	Asphalt-Rubber Joint and Crack Seal, TP M	Pounds	17,815	\$3.80	\$67,697.00
Total					\$274,786.85

36. If M&C approves this agenda item, this change order will increase the current contract by \$274,786.85, for a new total of \$8,886,740.51, and staff will move forward with paying remaining invoice(s) for work completed to date and shall close the CY22 PMP project.

37. This recommendation supports the following ACCGov Strategic Plan Goal and Strategy:

- Safely Move Around Athens, Strategy E: *Enhance safety for all modes of transportation.*

OPTIONS:

1. Mayor and Commission:

- Approve a change order in the amount of \$274,786.85 to the CY22 PMP unit price contract to reconcile added quantities associated with pavement rehabilitation and maintenance work items completed on the original roadway list and subsequent change orders already approved by Mayor and Commission; and
- Authorize the Mayor and appropriate staff to execute all related documents.

2. The Mayor and Commission deny the change order in the amount of \$274,786.85 to the CY22 PMP unit price contract.
3. Mayor and Commission defined option.

DEPARTMENT RECOMMENDED ACTION: Option #1a and b.

DEPARTMENT: Transportation & Public Works
Prepared by: Derick Mason, Engineering Administrator
Rani Katreeb, P.E., Assistant Director



Julia Johnson

May 8, 2023

Date:

ADMINISTRATIVE COMMENTS:

ADMINISTRATIVE RECOMMENDATION:



Manager

May 10, 2023

Date: