

**Date:** January 11, 2021

**To:** Mark D. Israelson, City Manager

**From:** Gerald Cosgrove, Director of Public Works &  
B. Caleb Thornhill, Director of Engineering

**Subject:** Public Works and Engineering 2021 Bond Program List

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This memorandum is companion material to the Preliminary Open Meeting presentation to be delivered to Plano City Council on January 11, 2021.

Requested Action:

Receive presentation and provide direction to Public Works and Engineering Departments regarding inclusion of proposed projects totaling \$237,000,000 to the 2021 Bond Program.

Background:

The Departments' focus when developing the list of potential projects is on maintaining, improving, and extending the life of existing infrastructure in addition to correcting non-compliance issues. The recommended list of projects align with this focus.

The Departments were asked to assign a score of "High, Medium, Low" to each project in order to rank them by importance. Each project will show a minimum critical funding amount (high priority), an adequate funding amount (medium priority), optimum funding amount (low priority) as shown below:

- High Priority: Minimum critical funding amount (high priority) which is the current level of roadway maintenance and replacement
- Medium Priority: Added to the high priority funding level to improve the overall condition of the roadway network
- Low Priority: Added to medium and high priority funding levels to optimize the project level funding to reduce additional maintenance/replacement costs in the future

The following pages outline the recommended list of Public Works and Engineering projects for inclusion in the 2021 Bond Program, totaling \$237,000,000, with an estimated corresponding Operation and Maintenance (O&M) cost of \$1,277,336 when the proposed 2021 Bond Program is fully implemented. In addition, the prioritized list has been provided as an attachment for your reference.

## PUBLIC WORKS PROJECTS

**Arterial Concrete Street Reconstruction & Overlay - Total Needed: \$ 100.0M (O&M \$194,984)**  
**High Priority \$70M, Medium Priority \$10M, Low Priority \$20M**

This project includes the rehabilitation of arterial concrete street paving and the installation of an ultra-thin asphalt overlay along the entire project limit. Additional improvements include sidewalk/barrier free ramp repair and new pavement markings. Specific projects will be identified each year based on

pavement condition and coordination with other existing/planned projects in close proximity.

**Justification:**

The City's arterial network is aging and needs to be rehabilitated. If approved, funding will rehabilitate between 35 miles (high priority only) and 50 miles (all priority levels) of the approximately 200 miles of major divided thoroughfares in the City. Rehabilitation is the most cost effective way to extend the pavement life beyond the original design lifespan. If not approved, the City's major thoroughfares will continue to deteriorate and cost more in the future to repair/replace.

***Residential Street & Alley Repair - Total Needed: \$70.0M (O&M \$194,983)***  
**High Priority \$65M, Medium Priority \$5M, Low Priority \$0M**

This project includes rehabilitation of residential streets, sidewalks and alleys in each residential neighborhood zone.

**Justification:**

11 of the City's 50 zones have yet to undergo a major rehabilitation project. Many of these zones are approaching 15-20 years of age. Performing adequate rehabilitation now, will save higher replacement costs in the future. In addition, 19 of the City's 50 residential zones were rehabilitated between 10-20 years ago and will need another rehabilitation project to avoid the large expense and nuisance of replacement in the future. If approved, the funding will rehabilitate approximately 13 zones (high priority only) to 14 zones (all priority levels) of the City's 50 residential zones at an estimated \$5M/zone. If not approved, the residential neighborhood streets will continue to deteriorate and cost more in the future for repair/replacement.

**ENGINEERING PROJECTS**

***Residential & Collector Street Reconstruction - Total Needed: \$24.0M (Est. O&M \$400,000)***  
**High Priority \$16M, Medium Priority \$4M, Low Priority \$4M**

This project includes the complete reconstruction of Residential and Collector Streets. Reconstruction will include pavement replacement and sidewalk replacement and ADA compliancy.

**Justification:** The City of Plano has 10 residential zones that have not been rehabbed and 19 residential zones that have not been in 10-20 years. If approved as part of the 2021 Bond Program, the Engineering Department would program approximately 8 miles (high priority only) of replacement up to 12 miles (all priority levels), estimated at \$2M/mile for replacement. If not approved, deterioration of the City's residential and collector will continue increasing maintenance costs and unsafe roadways.

***Screening Wall Reconstruction - Total Needed: \$16.0M (Est. O&M \$250,000)***  
**High Priority \$12M, Medium Priority \$2M, Low Priority \$2M**

This project includes the complete reconstruction of Screening Walls. Reconstruction will include replacement of screening walls and adjacent sidewalks.

**Justification:** The City of Plano has nearly 100 miles of screening wall to maintain. Most screening walls have reached their end of life and were not installed to today's standards. If approved as part of the 2021 Bond Program, the Engineering Department would program approximately 12,000 linear feet (high priority only) of replacement up to 16,000 linear feet (all priority levels), estimated at \$1M/1,000ft for replacement. If not approved, deterioration of the City's screening walls will continue increasing maintenance costs and unsafe pedestrian paths adjacent to the walls.

***Sidewalks - Total Needed: \$5.0M (Est. O&M \$80,500)***  
**High Priority \$4M, Medium Priority \$0M, Low Priority \$1M**

This project includes the reconstruction or addition of sidewalks. Reconstruction or addition will include sidewalks and necessary easement acquisition.

**Justification:** The City of Plano has nearly 100 miles of missing sidewalk. As well as, many locations throughout the City where sidewalks do not meet current ADA standards. If approved as part of the 2021 Bond Program, the Engineering Department would program approximately 20 miles (high priority only) of replacement up to 25 miles (all priority levels), estimated at \$200,000/Mile. If not approved, sidewalk gaps will remain creating non-ADA compliant pedestrian paths.

**Intersection Improvements - Total Needed: \$4.0M (Est. O&M \$65,000)**  
**High Priority \$3M, Medium Priority \$0M, Low Priority \$1M**

This project includes the capacity and safety improvements of intersections. The addition of turn lanes, upgrading of existing signals or ADA compliancy of pedestrian facilities will be included at each location.

**Justification:** The two biggest issues at each intersection is congestion and safety. The Engineering Department reviews all intersections on a yearly basis to identify improvements to address both of these concerns. If approved as part of the 2021 Bond Program, the Engineering Department would program approximately 3 locations (high priority only) of replacement up to 4 locations (all priority levels), estimated at \$1M/location. If not approved, congestion and safety concerns will exist at various locations throughout the City. Including several locations that will remain non-ADA compliant.

**Alley Reconstruction - Total Needed: \$6.0M (Est. O&M \$91,868)**  
**High Priority \$4M, Medium Priority \$1M, Low Priority \$1M**

This project includes the complete reconstruction of residential alleys. Reconstruction will include full pavement replacement at each location.

**Justification:** The City of Plano has 10 residential zones that have not been rehabbed and 19 residential zones that have not been in 10-20 years. If approved as part of the 2021 Bond Program, the Engineering Department would program approximately 4 miles (high priority only) of replacement up to 6 miles (all priority levels), estimated at \$1M/Mile for replacement. If not approved, deterioration of the City's alleys will continue increasing maintenance costs and unsafe access to residents.

**Traffic Improvements - Total Needed: \$12.0M (Est. O&M \$0)**  
**High Priority \$6M, Medium Priority \$3M, Low Priority \$3M**

This project includes improvements to the City's transportation system impacting Traffic Technology and Traffic Safety improvements.

Traffic Technology improvements will consist updates to outdated traffic signal controller cabinets, hardware and software, vehicle/pedestrian detection systems and communication systems enabling staff to better manage traffic congestion and safety at the 260+ intersection locations.

Traffic Safety Improvements will include adjustments and safety enhancements to median noses at intersections, updating pedestrian ramps, crosswalk signage and pavement markings and neighborhood traffic calming improvements.

**Justification:** Pre-Covid traffic volumes continue to congest many areas of Plano. This item will assist in addressing congestion and improving safety for the traveling public. If approved as part of the 2021 Bond Program, the Engineering Department would update the aforementioned outdated systems. If not approved, mitigating congestion will be limited.

Attachments:  
Attachment 1-Priority Scoring