

PAVEMENT MANAGEMENT PROGRAM UPDATE

Public Works Department

Mobility and Infrastructure Committee September 8, 2022

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TYPICAL DISTRESSES AND TREATMENTS

PCI values provide an indication of the surface conditions and structural integrity of a pavement.

Condition	Typical Distresses – Treatments	PCI Range
Excellent	Little to No Maintenance – Slurry Seal	85-100
Very Good	Minor Cracking – Slurry Seal	70-85
Good	Minor to moderate cracking – Slurry/Patching/Overlay	60-70
Fair	Extensive Cracking – Patching/Repairs/Overlay	50-60
Marginal	Severe Cracking/Rutting – Repairs/Milling/Overlay	40-50
Poor	Major Severe Cracking/Rutting – Thick Milling/Overlay	25-40
Very Poor	Extensive Failures – Reconstruction	0-25
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PAVEMENT DESIGN

- Key parameters that effect pavement design include truck traffic volume and the underlying soil condition.
- Designs that include foundation improvements increase the pavement life but is also more expensive.
- Pavements are engineered to carry truck traffic during their life.
- The City Traffic Index Map is outdated meaning there is more traffic throughout the City.
- Cores collected periodically throughout the City have indicated many streets are under designed.



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TYPICAL PAVEMENT TREATMENTS

- Slurry Seals: A mixture of water, asphalt emulsion, aggregate (very small, crushed rock), and additives.
- Dense Graded Asphalt Concrete: A mixture of aggregates with an asphalt cement binder which is a highly viscous liquid form of petroleum that acts as a glue.
- Asphalt Rubber Hot Mix: A hot-mixed asphalt pavement containing crumb rubber. The crumb rubber serves as a "modifier" of the liquid asphalt. Its addition gives the liquid asphalt greater viscosity (resistance to flow) and improves other properties which resist reflective cracking and rutting and prolong pavement life.



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- Asphalt Rubber Aggregate Membrane: Consists of mixing 3/8-inch aggregate rock with a rubberized liquid material comprised of scrap tires and other additives. The membrane resists reflective cracking and water intrusion. This is a cost-effective alternative for reconstruction and other conventional strategies. The City is utilizing this product extensively as it benefits our budget deficiencies.
- 100% Recycled Hot Mix Asphalt: Manufactured with 100% recycled asphalt material generated from waste collected from construction projects. The product provides a benefit to the environment.

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CONSTRUCTION CONTRACTORS AND AWARDS

- City construction projects are available to all contractors with the proper license to complete the work.
- Construction contracts are awarded to the lowest responsive bidder as required per the City's formal procurement procedures.
- Construction contractors that manufacture their own asphalt near the City typically can construct projects more cost effectively.
- The City potentially could adopt different procedures to award contracts based on a qualifications-based system and potentially adding some scoring benefit to local City contractors. However, the construction contract amounts will likely increase.



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POTENTIAL PMP STRATEGY MODIFICATIONS

- Focus on maintaining streets in the "Marginal" PCI range to prevent excessive growth in the City's backlog of street in the "Poor" and "Very Poor" PCI range.
- Increase the preservation treatment on street in the "Good" PCI range to extend the pavement useful life.
- Extend the pavement moratorium from 3 to 5 years.
- Adopt a utility trench cut fee.
- Consider concrete approaches in heavily truck traveled locations.

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