CITY OF CERES

ENGINEERING SERVICES

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PAVEMENT MANAGEMENT PROGRAM

THE BASICS

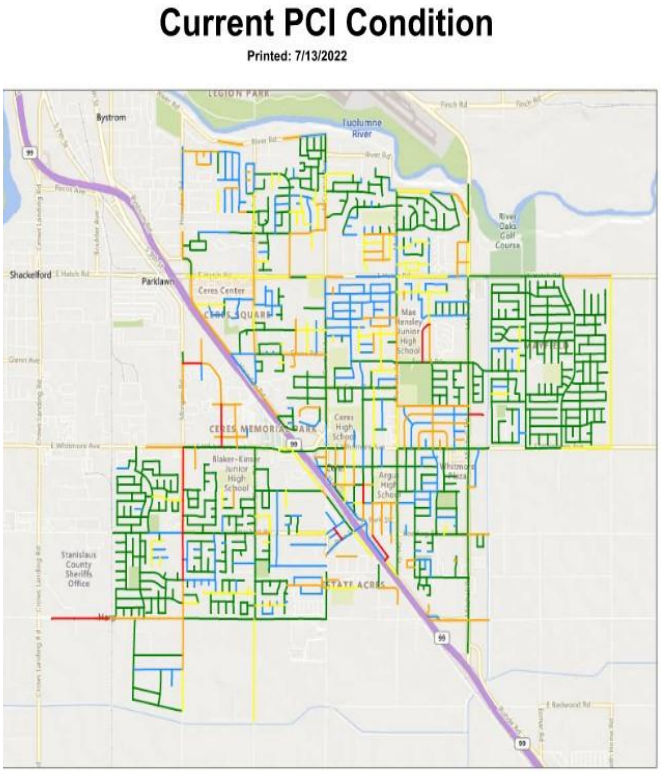
Ceres has resurfaced or rehabilitated more than 22.5 centerline miles of pavement in the last 5 years. The total centerline length for our pavement network is 134 miles and represents a $142 million investment. The pavement network is currently at 55.9% in good condition, 26.9% in fair condition, and 17.2% in poor condition.

City staff organizes pavement projects to have the greatest effective results and most efficient use of funds. Items considered during selection of projects are pavement condition, underground utility's scheduled maintenance, future growth of commercial or residential lands, public requests, available funding, and scope of work.

SELECTION

THE METHOD

Generally, Ceres roads can be categorized into three categories: arterial, collector, or residential roads. City staff delivers two paving projects each year, one for an arterial road and the other for collector & residential roads. Selection of the roads begins with the pavement condition index score given to each road following an in-person visual inspection. The higher the score, the better the condition. Staff then coordinates internally to phase underground construction projects to be completed prior to pavement repairs. Staff then notifies all other utility companies of the planned improvements and allows time for underground projects. Project limits and scope of work are determined on existing features and needs of the area. Projects may include ADA upgrades for sidewalk, curb ramps, street sign replacements, new striping configurations, storm drainage improvements, and other various improvements.



STRATEGY

THE FUNDING

Staff with the professional assistance of a consultant, apply and secure grant funding for roadway improvements completed annually. Arterial and collector roadways qualify for our typical grant funding and is half of all pavement projects we complete. Residential roads are usually funded through Measure L, our regional ½ cent gas tax. The City only receives Measure L revenue monthly and funds are retained until a reasonable figure allows a construction project to proceed. Currently, the annual revenue is approximately $2 million and the current need for our roads exceeds the fund balance. The budget is reviewed and written annually and may be amended mid-year.

DESIGN

THE DESIGN

Roads are built with layers of natural or engineered materials and expected to last several years before any noticeable wear and tear. Roads in Ceres are paved with flexible pavement or rigid pavement. Flexible asphalt is a mixture of various aggregates with a petroleum-based binder. Rigid pavement also includes aggregate, sand, and rocks but uses cement as the material binding agent. Our best tool for determining pavement repair projects is the pavement condition index score. Different types of repair or preservation methods and methodology allow for proper project selection based on available funding.

Ceres separates pavement treatment into two categories, resurfacing and rehabilitation. Separating projects into general groups allows for better planning and resource partitioning. Staff can design the pavement project in-house or choose to hire a professional consultant to design project plans. This flexibility allows quicker results moving through planning, design, and construction of pavement projects.

Resurfacing includes crack sealing, slurry seal, cape seal, and other various surface treatments with no subgrade work completed.

- Crack sealing begins with crack size determinations. Crack treatment only targets cracks from ¼ to 1 ½ inch to minimize wasted materials. Cracks smaller than the specified width will be captured with the overall surface coating. Cracks larger than the specified width need structural section repairs. Cracks are prepared by removing all organic materials, cleaning cracks with oil-free compressed air, and then sealed with polymer modified asphaltic emulsion.
- Slurry seal is used to coat and protect roads that have lost surface smoothness by weathering of the sand and oils at the pavement surface. Slurry seal consists of mixing asphalt emulsion, aggregate, and water.
- Cape seal is used to coat and re-level roads that have more deficiencies and have some areas of unevenness. The cape seal consists of bituminous asphalt rubber 3/8-inch aggregate precoated and placed on a clean, dry road followed by a slurry seal coat.

Rehabilitation includes full-depth pavement removal and replacement, subgrade scarification and re-compaction, grinding, and overlays.

- Full depth asphalt replacement completely removes a specified area of pavement by clean saw cuts or grinding and replacing to the full thickness.
- Subgrade scarification is the scraping and excavation of existing materials to remove unwanted materials and blend the ground to prepare for re-compaction.
- Grinding shaves layers of asphalt away to set new grades allows an overlay on a base of existing material. During the design investigation, it is decided if this treatment is feasible.

GOALS

THE PLAN

With grant and available local funds, we are planning to complete the projects listed below:

Local Roads and Subdivisions: Resurfacing (may include some Rehabilitation as needed)

Name	Limits	Preliminary Estimate	Tentative Construction Year
Northridge Heights Subdivision	Wallace to Grover	$1,200,000	2025/26
Fruitridge Gardens Subdivision	Grover to Moffet	$1,000,000	2025/26
Lu Ran Estates 1&2 Subdivisions	Central to Lynley	$1,200,000	2026/27
Lynley Manor 1&2 Subdivisions	Lynley to Moffet	$1,500,000	2026/27
Northridge Subdivision	Central to Lynley	$1,400,000	2026/27
Glenbrook Park Subdivision	Fowler to End	$700,000	2023/24
Ceres Farm Labor Subdivision	Central to End	$750,000	2024/25
Stonehenge Estates Subdivision	Evans to End	$550,000	2023/24
Shady Acres Subdivision	Evans to End	$800,000	2024/25
Northwoods Subdivision	Lehi to Changason	$600,000	2027/28

Arterials and Collectors: Rehabilitation

Name	Limits	Preliminary Estimate	Tentative Construction Year
Whitmore Avenue	Crows Landing to Morgan	$3,500,000	2023/24
5TH Street	Whitmore to El Camino	$3,000,000	2024/25
Moffet Road	Hatch to Whitmore	$3,500,000	2024/25
Crows Landing Road	Whitmore to Service	$4,000,000	2025/26
Service Road	Crows Landing to Morgan	$3,000,000	2026/27
Richland Avenue	Hatch to Herndon	$3,000,000	2027/28

Actual project scope will be determined by funding and potential design constraints.