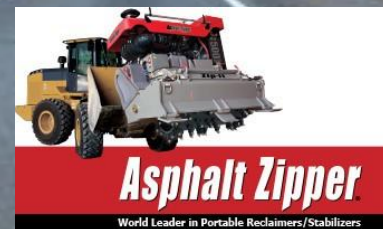


Closing the Road Maintenance Funding Gap

How California County and Municipal Road Crews Can Help Extend Limited Road Repair Budgets



Agenda: Examine the Road Repair & Budget Challenges That Engineers Need to Manage and The Potential Solutions



- . Declining Repair Budgets vs. Increased Construction Costs
- . Contractor Dependency
- . Insufficient Crew Repair Knowledge
- . Optimal Equipment for Increasing In-House Repairs



What are the Engineers Saying.....



- **Our road-repair needs are greater than the available budget.**
- **We have more distressed pavement than we can address annually.**
- **Small failures continue getting worse while waiting for larger projects.**
- **Contractor mobilization can make small projects inefficient.**
- **Contractor availability can dictate our schedule.**
- **Our crews are often capable of doing more than routine pothole repairs.**
- **We need to use existing employees and equipment more strategically.**



Message to Crews:



- Bring Selected FDR Repairs, Alleys Repairs, Stabilization and Dust Control Back In-House
- We cannot contract our way out of every maintenance problem. We need to determine which repairs our crews can efficiently perform themselves.



Five Pressures Are Competing for the Same Road Dollars

Pavement
preservation and
rehabilitation

Bridges, culverts
and drainage

ADA and safety
improvements

Storm and
wildfire damage

Rising labor,
material,
equipment and
regulatory costs

Fiscal Challenge: The Money Isn't Keeping Up With the Road Need

County and Municipal Engineers Face a Structural Funding Problem



- A projected \$69.7 billion 10 year shortfall
- Construction costs increased approximately 30% between 2020 and 2022
- Fuel-Tax dependent revenues face long-term pressure from declining fuel consumption
- Compleitive grants are valuable but episodic and project-specific
- Preventive maintenance budgets are frequently redirected to emergencies
- Deferred base failures eventually require more expensive reconstruction

Contractor Challenge: Small Projects Carry Large Indirect Costs

- Mobilization & Traffic control and public notification
 - 2025 Oxnard pavement bid: **\$265,000 to \$500,000 for mobilization and \$550,000 - \$911,000 for traffic control. (City of Oxnard bid tabulation)**
- Bonding, insurance, administration and prevailing-wage compliance
- Minimum production quantities
- Contractor scheduling and availability
- Change Orders for variable subsurface conditions
- Limited interest in small, dispersed or remote projects

Contractor pricing is most efficient when counties can bundle large, continuous quantities.

Contractor Challenge:

Contractor Dollars Need to be Used Strategically

- Contractors remain essential for:
 - Major road reconstruction
 - Long continuous FDR corridors
 - Large paving operations
 - Structural drainage reconstruction
 - Projects requiring specialized traffic control
 - Federally funded or complex capitol projects
 - Projects beyond County or municipal crew capacity



The objective is not to eliminate contractors – it is to reserve contractor capacity and dollars for the projects where contractors provide the greatest value

Not Every Repair Needs to Become a Large Contract

Equipment Challenge: Counties & Municipalities Often Have a Capacity Gap

- Conventional graders, loaders and rollers can support rehabilitation but cannot efficiently pulverize failed pavement.
- Large reclaimers may be oversized for patches, alleys and narrow road repairs.
- Equipment transport can add cost and scheduling complexity.
- Aging support fleets create downtime and repair expense.
- California diesel-emission requirements must be included in fleet planning.



CARB maintains emission requirements covering diesel equipment operated by public agencies and utilities. California Air Resources Board

Equipment Capacity Challenge: Move Beyond the Traditional Maintenance Toolbox –

Typical crew capabilities already include:

- Grading
- Excavation
- Compaction
- Trucking
- Asphalt placement
- Aggregate Handling
- Shoulder work
- Traffic control

The opportunity is to add the ability to:

- Pulverize failed asphalt
- Rework existing base material
- Blend aggregate
- Mix stabilization agents when engineered
- Regrade
- Prepare the repaired area for surfacing

Can we convert our maintenance crews from primarily reacting to failures into crews capable of structurally repairing them?

Crew Knowledge Challenge: FDR Is More Than Pulverizing Asphalt

Crews need repeatable procedures for:

- Project and treatment selection
- Asphalt and base sampling
- Pulverization depth and gradation
- Moisture management
- Cement, lime or emulsion selection
- Stabilizer application and calibration
- Grading and compaction
- Density and Strength testing
- Curing, drainage and final surfacing



FDR: How It Works



FDR Patch Repairs:

Represents The Best Opportunity to Expand In-House Repair Capabilities.

Target Localized Structural Failures – Ideal candidates:

- Base failures
- Alligator cracking
- Rutting
- Failed wheel paths
- Bus/truck loading areas
- Failed intersections
- Pavement edges
- Short failed roadway sections
- Repeated pothole areas



Instead of:

Saw Cut, Chunk and Haul

Move toward:

Pulverize – reshape – stabilize if required – compact –surface

Stop repeatedly treating a structural problem as a surface-maintenance problem.

The Opportunity Is To Develop a Hybrid Delivery Model



Work Type	Recommended delivery
Major corridor reconstruction	Contractor
Large continuous FDR and overlay	Contractor
Specialty asphalt surfacing	Contractor or term contract
Small base-failure patches	In-house
Narrow alleys and shoulder stabilization	In-house
Road-edge and shoulder stabilization	In-house
Unpaved-road stabilization	In-house
Scheduled dust-control application	In-house where operationally practical
Emergency and pre-overlay base repairs	In-house

Caltrans notes that in-place FDR can reduce disposal, truck trips, and taxpayer cost while addressing cracking, rutting, potholes, subgrade instability and lost structural capacity.

Public Works Departments Crew Repairs

Asphalt Zipper® The Ultimate Versatility



Compare Fully Loaded Costs, Not Just Machine Rates. Use the same cost categories for both delivery methods.

Contractor cost

- Bid Price
- Mobilization
- Traffic control
- Engineering and inspection
- Change orders
- County contract administration
- Final Surfacing

In-house cost

- Fully burdened labor
- Reclaimer ownership or rental
- Support equipment
- Fuel, wear parts and maintenance
- Water, aggregate, and stabilizer
- Traffic Control
- Testing and inspection
- Final Surfacing

Formula:

Savings per SY = Contractor fully loaded cost per SY – In-house fully loaded cost per SY
$$\text{Savings per SY} = \text{Contractor fully loaded cost per SY} - \text{In-house fully loaded cost per SY}$$

Illustrative Small-FDR Savings

The following is a planning scenario, not a statewide bid-price claim. It should be replaced with county's actual costs.



Repair Size	Contractor Scenario	In-House Scenario	Potential Savings
500 SY	\$27,500	\$16,000	\$11,500 / 42%
1,000 SY	\$45,000	\$27,000	\$18,000 / 40%
2,000 SY	\$76,000	\$48,000	\$ 28,000 / 37%

Assumed effective rates:

- Contractor: \$55, \$45 and \$38 per square yard
- In-house: \$32, \$27 and \$24 per square yard
- Includes base reclamation/stabilization activities
- **Excludes the final asphalt, chip-seal or other wearing surface.**

For context, a large 2024 Sonoma County contract carried an FDR-C bid item of **\$11.75 per square yard on 76,010 square yards**—illustrating the production efficiency of large quantities, but not the fully loaded price of a small scattered repair. [Sonoma County bid tabulation](#)

Alleys, Stabilization and Dust Control Add More Savings



Illustrative planning examples

Application	Quantity	Contractor	In-house	Potential Savings
Narrow alley rehabilitation	1,000 SY	\$45,000	\$27,000	\$18,000
Unpaved-road stabilization	5,000 SY	\$80,000	\$50,000	\$30,000
Dust-control application	100,000 SY	\$110,000	\$70,000	\$40,000

Important qualifications:

- Dust-control economics depend heavily on product, haul distance, application rate and repeat frequency.
- Stabilizer selection must be based on soil testing and project conditions.
- Drainage deficiencies must be corrected; FDR alone does not solve drainage failures.
- County labor availability must be confirmed before claiming savings.

A Modest Annual Program Could Redirect \$300,000

Illustrative annual workload:

Work performed in-house	Annual Savings
Five 1,000-SY FDR Patches	\$90,000
Four 1,000-SY alley projects	\$72,000
Two 5000-SY stabilization Projects	\$60,000
Two 100,000 -SY dust Control cycles	\$80,000
Illustrative annual savings	\$300,000

Potential uses for the savings:

- **Complete additional base-failure repairs**
- **Increase pavement-preservation quantities**
- **Fund equipment replacement**
- **Build emergency-response capacity**
- **Reduce the deferred-maintenance backlog**

Build Capacity Without Overextending the Crew

Recommended Operation Model:

- **Identify a core four-to-six-person trained crew.**
- **Begin with low-volume, low-risk pilot locations.**
- **Use engineering or laboratory support for treatment design.**
- **Create a written FDR and stabilization checklist.**
- **Track labor, fuel, equipment hours, additives and production daily.**
- **Verify moisture, depth, gradation and density.**
- **Conduct post-project inspections at 30 days, six months and one year.**
- **Cross-train additional operators to prevent single-person dependency.**



The FHWA checklist stresses calibration, moisture, stabilizer timing, rolling pattern, density and curing controls. [FHWA Full-Depth Reclamation Checklist](#)

Let's get started: Approve a Controlled Pilot

Proposed 90-day preparation and pilot



- **Select three representative projects.**
- **Retrieve recent contractor bids and invoices.**
- **Calculate the county's fully burdened crew and equipment rates.**
- **Confirm procurement, labor and funding requirements with county counsel.**
- **Train the crew and establish quality-control procedures.**
- **Complete the pilot projects.**
- **Compare actual cost, production, quality and schedule.**
- **Present the results before considering an equipment purchase or expansion.**

Closing statement:

Keep contractors focused on the large projects they perform efficiently. Give county crews the tools and training to handle smaller repairs before they become large contracts.

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Key presentation safeguard

Label the financial tables “**Illustrative Cost Model—Replace With County Actuals.**” The final business case should use:

- The county’s last three relevant contractor contracts
- Actual labor and benefit rates
- Internal equipment-rate schedule
- Expected annual utilization
- Financing or ownership cost
- Stabilizer and surface-treatment costs
- Five-year payback and return-on-investment analysis



Questions & Discussion



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