

Innovative Paving Method Saves Time, Money and is Better for Environment

You may have noticed the smooth new section of Farm Bureau Road between Wren and Walnut avenues. This was not any old paving job. This Complete Streets Project managed by the City and sponsored by the Contra Costa Transit Authority used an innovative paving method that saves both time and money and is more environmentally friendly.

Known as full depth reclamation, or FDR, this recycling process uses cement as a main component of the road base by combining the ground-up deteriorated asphalt pavement with base materials and pulverizes them in place. Cement and water are added to form a new and durable base material. Then a new top surface of asphalt is applied to create a smooth finish.

Since crews don't have to haul off excess soil once the old roadway is torn up, this process saves time and money. It is also more sustainable as it allows the reuse of the old materials, and the project's carbon foot print is reduced by decreasing the amount of truck traffic coming and going from the area.

Benefits of full-depth reclamation include:

- Recycled cement base material is stronger
- Cost-effective by reusing/recycling materials
- Corrects drainage problems by enabling the adjustment of the road grade that would not be possible with a regular pavement overlay



Full Depth Reclamation is a sustainable paving method that grinds up and reuses cement base material to create a stronger, longer-lasting road

- Meeting environmental and sustainability goals with less truck traffic transporting materials
- Life expectancy of recycled cement base is 20+ years versus 8-10 years for a 2-inch grand and overlay method

This project was Phase 2 of a three-phase project, and cost approximately \$3 million. It was funded through Measure J (the County's voter-approved ½-cent transportation sales tax), Measure Q (the City's voter-approved ½-cent sales tax) and state gas tax funds, and it is estimated that this paving method saved \$150,000 in materials alone as a result of the project's sustainable nature.

It also saved time – this FDR portion of the project took just over two weeks

from start to finish. Conventional reconstruction methods would have likely taken 1-2 months to repave this same stretch of roadway. Phase 3 (from Walnut Avenue to Clayton Road) has not yet been scheduled, but it will likely be programmed in 2021-22. The City is actively working now to identify future grant funding for Phase 3.

This is only the second time the City of Concord has used full depth reclamation to pave a road. The first time was in 2015 when Hillsborough Drive was repaved. Unfortunately, only a handful of contractors in California have the specialized equipment to do this type of work, so full depth reclamation is not as common as we expect it to be in the future. ♦



Complete Streets Project By the numbers:

- Rehabilitation of over 90,000 square feet of roadway surface
- Placement of approximately 4,000 tons of hot mix asphalt
- Establishment of 3,300 linear feet of new sidewalk for the community
- Creation of over 1,500 square feet of bioswales to treat roadway drainage
- Interaction with close to 70 different residences and businesses near the site
- Reconstruction of over 50 driveways fronting the project
- Installation of 8 new energy efficient LED streetlights
- Upgrade of 1 major intersection at Concord Boulevard with new traffic signal new signal loops, and accessible ramp upgrades at all 4 corners



During the paving process, crews installed traffic signal loops at Farm Bureau Road and Concord Boulevard (top), and they placed about 4,000 tons of hot mix asphalt (center and bottom). This process saved about \$150,000 in materials alone, and took just over two weeks to complete.