Roller Compacted Concrete (RCC)

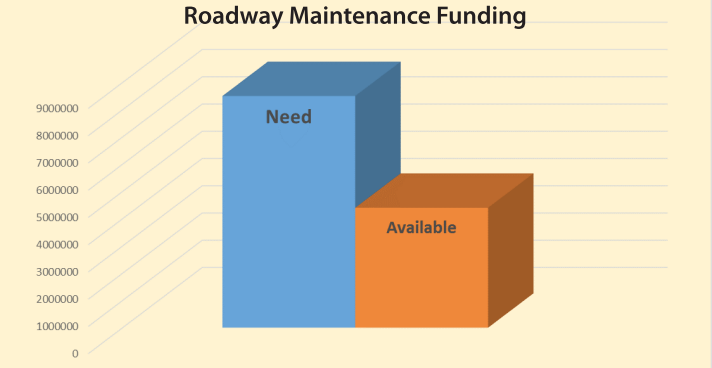
What is it?

- Roller Compacted Concrete (RCC) is a relatively dry concrete mix that is installed with a paving machine and then rolled, just like asphalt
- It is sometimes called "white asphalt"
- This installation method keeps construction costs lower than conventional concrete and very competitive with asphalt
- RCC is generally 4" to 10" thick, installed in a single lift, and does not contain any reinforcing steel
- The City of Roseville requested a cost analysis from both a roadway contractor and an independent consultant. Both concurred that the RCC construction costs are about the same or lower than asphalt concrete (AC) costs for new roads.

Arterial RCC

RCC/AC Cost Comparison for Pleasant Grove (about ½ mile in length)			
Option	*Construction Cost Estimate*	*50-yr. Maint. Cost Estimate*	*Lifecycle Cost Estimate*
RCC over cement-treated subgrade	$914,186	$490,000	$1,404,186
RCC over aggregate base	$1,156,673	$490,000	$1,646,673
Asphalt concrete over cement subgrade	$1,254,962	$785,840	$2,040,802
Asphalt concrete over aggregate base	$1,509,170	$785,840	$2,295,010

RCC/AC Cost Comparison for Westpark Phase 4 Residential (about ½ mile in length)			
Option	*Construction Cost Estimate*	*50-yr. Maint. Cost Estimate*	*Lifecycle Cost Estimate*
Asphalt concrete over cement-treated subgrade	$202,919	$215,392	$418,311
RCC over cement-treated subgrade	$233,940	$160,183	$384,123
Asphalt concrete over aggregate base	$244,607	$215,392	$459,999
RCC over aggregate base	$255,897	$160,183	$416,080



The Challenge

- The City maintains about 1,000 lane miles of asphalt roadway
- Proper asphalt preventative maintenance requires maintaining 100 lane miles per year at a cost of about $8.5 million
- The City has on average $4.4 million per year available for roadway maintenance—about half of what is needed
- Maintenance funds generally come from the Gas Tax paid at the pump
- Gas Tax is distributed to local government based on road lane miles and population

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A Solution

Residential RCC

- As a possible solution to this challenge, the City of Roseville is looking into using RCC for new or reconstructed roadways
- RCC can operate for 20 to 25 years without maintenance, while AC requires resurfacing every 7 to 10 years
- If we construct the City's new roadways with RCC, the growing lane miles and associated population will increase the City's share of Gas Tax. However, the total lane miles of asphalt roadways requiring short-term maintenance will remain unchanged, and thereby reduce the roadway maintenance structural deficit.
- Additional benefits of RCC include unique and pleasing aesthetics, reduced maintenance, fewer resurfacing projects impacting residents, cooler roads during the day, and brighter roads during the night

Pilot Project

- The City of Roseville is preparing to begin the design phase of a pilot RCC project
- Design would begin this fall with construction beginning next summer
- The pilot project is broken up into three locations in order to test varying construction techniques, traffic conditions, and finishes

RCC Utility Collar

- The locations include:
  - Washington from Pleasant Grove to just north of Mountain Park Drive
  - Atkinson, from Church Street, through and including Denio Loop
  - A small section of a residential street
- We encourage the development community to monitor the progress of the project
- Visit **roseville.ca.us/RCC** to learn more.

Contact

For more information or questions, please contact:

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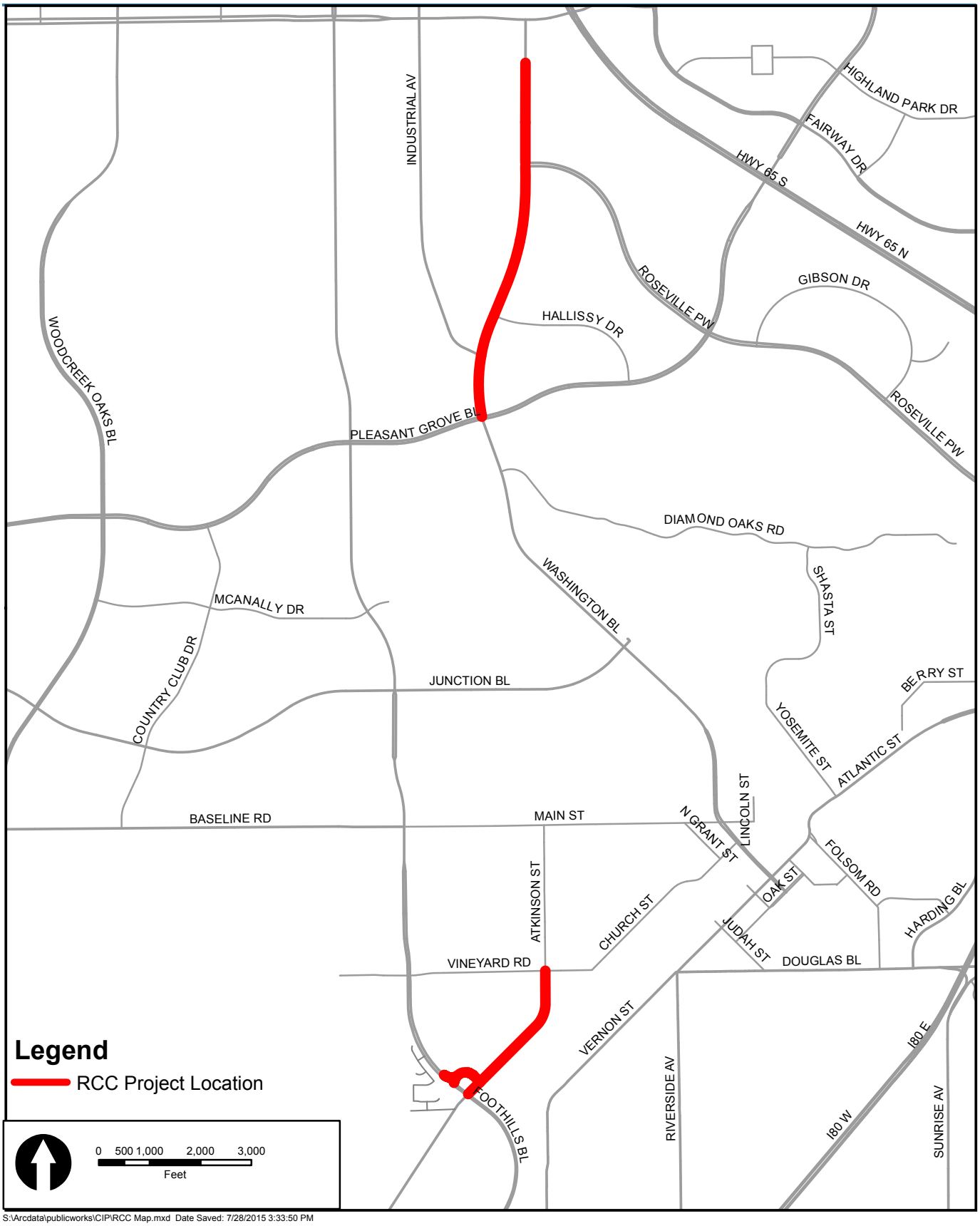
CITY OF ROSEVILLE CALIFORNIA

Roller Compacted Concrete (RCC) – 2016 Project Locations



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