



ARAM Quarterly

Spring
2012

Asphalt-Rubber Aggregate Membrane

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Underestimating Public Inconvenience

Gridlock, Community Complaints, Confusing Detours &

Mounting Frustration

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APWA 2012

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Street maintenance will always be necessary to consistently provide adequate traveling lanes for residents and commuters. However, from crack sealing to full reconstruction, maintenance strategies almost always create some degree of public inconvenience. While budgets and funding are always at the top of Public Works Departments' lists, public inconvenience should never be overlooked. Choosing the right strategy can not only save a significant amount of a city's budget, but also have the least negative impact on the community in terms of increased traffic, noise, dust and confusing detours.

Asphalt-Rubber Aggregate Membrane (ARAM) applications have proven for decades that high performance maintenance strategies can be both cost effective and have a minimal negative impact on a community. ARAM Cape Seals (System 1) in residential areas are an excellent example of this. They usually do not require any grinding or utility adjustments, and the ARAM can be driven on within minutes of an application. There are never lengthy road closures and neighborhood streets are often finished in a matter of minutes, not hours. In addition, ARAM qualifies for the CalRecycle RAC grant program, which can save taxpayers up to an additional \$250,000 per project, as ARAM recycles the equivalent of 600 California scrap tires per lane mile.

City of
Oxnard



lane open

ARAM equipment lines up in a "train" for fast applications on neighborhood streets

Alternatives to Reconstruction



Reconstruction usually results in significant disruptions



Costs to residents include both time and money

Fully reconstructing a residential or arterial street is expensive, time consuming and can be very disruptive to local drivers. It's more often than not a significant inconvenience and costs residents both time and tax dollars. Many of these streets simply do not need reconstruction and would perform for well over a decade with a far less expensive ARAM Composite Layering System (System 3 and 4). A reconstruction project costing \$40+ per square yard could be converted to an ARAM project costing less than \$20 per square yard, with a 15+ year performance life. The time to complete the ARAM project could also be cut in half or more, saving taxpayers both time and money.



Sections of Beverly Blvd. in Pico Rivera were reconstructed in Summer 2011. This was a perfect candidate for a much more cost effective ARAM Composite Layering System



Up to 8 inches and more of asphalt was removed from Beverly Blvd., but only 2 inches or less could have been removed using an ARAM Composite Layering System

A lot of the time and money required to complete a reconstruction project goes into removing up to a foot or more of existing asphalt, which often closes lanes for weeks and then requires a significant amount of asphalt tonnage to rebuild the street. The City of Pico Rivera reconstructed Beverly Blvd. last summer, which took several weeks to complete and caused significant traffic disruptions. The arterial street was a perfect candidate for an ARAM Composite Layering System, which would have cut both the cost and construction time by half or more. Up to 8 inches and more of asphalt was removed from Beverly Blvd., but only 2 inches or less could have been removed with an ARAM project and the street would have performed for up to 15 years or more with little to no maintenance. Pico Rivera has since completed an almost 100,000 square yard ARAM project in 2012 on residential streets, which will provide over a decade of maintenance free performance without the use of costly grinds and overlays.



Caltrans Corner

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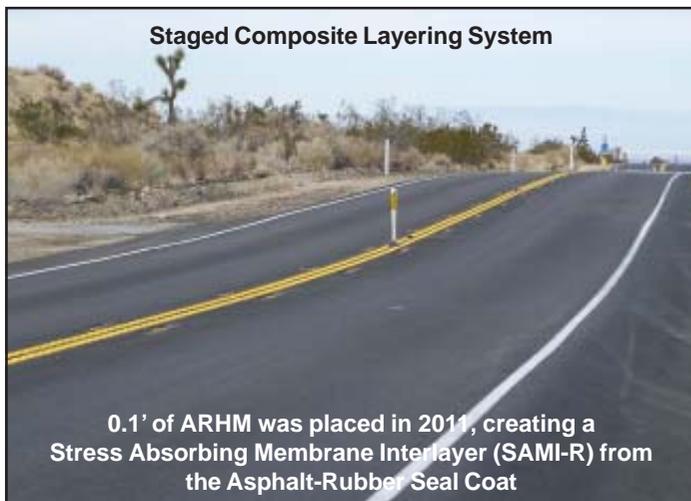
In 1996, Caltrans placed an Asphalt-Rubber Aggregate Membrane (ARAM) Seal Coat on State Route 138, east of Pearblossom (PM 69.3 to 74.9). The project was over eleven lane miles and the roadway had heavy cracking that included large thermal cracks.

Prior to construction, Caltrans maintenance forces applied sand seals on the worst areas of alligator cracking. In 2006 (10 years after the first ARAM), the sand seals were shadowing through the ARAM, meaning that the cracks were not coming through, but dark lines were appearing on the surface where there were cracks (mostly in the wheel paths). The Asphalt-Rubber binder continued to remain pliable and seal the cracks (see first picture below at left).



The initial intent of the 1996 ARAM Seal Coat was to prevent further damage to the roadway until additional funds became available for a hot mix asphalt overlay (within 3-5 years). However, the ARAM project performed well above expectations and all the way until 2009 (13 years), when funding for a second ARAM seal coat became available. In 2011, a 0.1' Asphalt-Rubber Hot Mix (ARHM) overlay was placed over that, creating a staged Composite Layering System. Only the untreated shoulders needed maintenance between 1996 and 2009.

Although most Composite Layering Systems have the ARAM and ARHM placed at the same time, this staged system is still expected to extend the service life of SR 138 for another 15 years or more.





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Mark Your Calendar



2012 APWA Street and Technology Conference

Join us again this year for another great APWA conference
at the [Carson Center](#) on April 25, 2012

801 East Carson Street, Carson, CA 90745



ARAM Grant News

The next 2012 ARAM
Grant applications are
currently expected this fall

IMPORTANT CHANGE

Under new CalRecycle rules,
cities and counties must now
skip a full year between ARAM
and/or ARHM grant awards



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