

San Diego County

BUILDING

BETTER ROADS



2021 Outstanding Local Streets and Roads Project Awards Nomination

January 29, 2021



PROJECT BACKGROUND

Funding from Senate Bill-1 (SB-1) is providing cities throughout California the opportunity to repair and replace aging roadways, freeways, and bridges. However, it is important to not only improve the condition of aging roads, but to utilize innovative and sustainable methods to decrease lifecycle costs while increasing safety. To address these long-term roadway construction and maintenance issues, the County of San Diego's Building Better Roads (BBR) program was established as a collaborative effort between all stakeholders to identify innovative, cost-effective, and sustainable pavement preservation treatments and best practices that can be implemented by local agencies within San Diego County and throughout the state.

The core of the program is a Working Group comprised of local cities and agencies, private companies, industry associations, and other key stakeholders from across the San Diego region. As a result of the BBR Working Group's efforts, several innovative and sustainable solutions have been developed that will have far-reaching benefits from increased safety for travelers throughout the region to economic and environmental savings. Pilot programs have been implemented to explore some of these solutions and others have already been put into action. Additionally, guidance documents have been developed and made available on the internet for agencies and others to learn and benefit from as they evaluate solutions for their regions.

HOW THE PROJECT DIRECTLY IMPROVES THE PRESERVATION, SAFETY, ACCESS TO, AND OVERALL QUALITY OF THE LOCAL STREET AND ROAD SYSTEM

The BBR Working Group was established to identify innovative and sustainable pavement preservation and rehabilitation treatments to improve the overall quality, longevity, and safety of local roadways. A kick-off meeting with stakeholders identified the primary problem areas and associated challenges. The problem areas were organized into four primary topics and subcommittees were created with individuals that had the knowledge and experience to evaluate and propose solutions. The four BBR Subcommittees that were identified were Reclaimed Asphalt Pavement (RAP), Mix Types for Asphalt, Alternative Pavement Types, and Contracting Methodology.

RAP: The use and storage of RAP was identified as an important focus area due to dwindling aggregate resources in the San Diego region and the need to ensure the availability and use of high-quality RAP. Specifically, the group identified that increasing the



The goal of the Working Group is to bring together knowledge, experience, and ideas from local agencies and industry to:

- ✓ Develop innovations and best practices that provide environmental benefits and support sustainability.
- ✓ Develop best practices to make the most of local resources.
- ✓ Engage all stakeholders to identify innovative and cost-effective solutions.
- ✓ Employ a regional approach to addressing roadway needs.

allowable storage times of RAP can provide greater flexibility for suppliers to meet market demand and reduce material waste in local landfills. Other innovative solutions included allowing an increase of RAP in asphalt mixes and utilizing RAP in pavement preservation seals, which could help preserve limited local aggregate supplies while reducing costs and environmental impacts.

Notably, the California Asphalt Pavement Association (Cal APA), recognized the Working Group in January 2019 as one of the top 10 stories to impact the industry in California in 2019 and specifically noted that, "the increased use of RAP in pavements mixes was a timely response to rapidly disappearing sources of aggregate in the county."



Mix Types: The Working Group also found that establishing standard asphalt mix designs across agencies in the region would allow for more efficiencies in production and result in higher quality materials and cost savings. Additionally, increasing the use of warm mix asphalt, which allows asphalt to be produced at lower temperatures, would reduce energy consumption, provide greater flexibility when placing the material, and may improve the service life of the road.

Alternative Pavements: Another area the Working Group is exploring is the use of alternative pavements, such as Fiber Reinforced Asphalt (FRAC) and Roller Compacted Concrete, which can help to improve durability, lower maintenance costs, and extend the overall life span of the road. A local agency is currently conducting a pilot test with FRAC to evaluate this solution locally for various road conditions and asphalt mixes.

INNOVATIVE AND UNIQUE

The extensive collaboration that occurs in the BBR program between industry professionals and state and local agencies is unique. This Working Group and its diverse collection of stakeholders from all sides of the industry has been able to identify key focus areas that addressed not only the materials and methods used, but also the ways in which local agencies contract for work. The ideas and solutions generated from these key areas are providing far-reaching benefits across the San Diego region for the traveling public, local agencies, the local contracting community, and local manufacturers and suppliers. The Working Group continues to provide a forum for agencies, contractors, suppliers, and industry professionals to discuss and collaborate on improving local roadways, means, and methods.

Contracting Methodology: Finally, the Working Group identified potential changes to contracting processes that includes increasing and standardizing the use of electronic bidding, creating a regional bidding calendar, and offering flexible construction start dates. Implementing these practices has improved efficiencies and provided cost savings by increasing transparency, reducing errors in the bidding process, supporting the local contracting community, increasing competition for construction contracts, and maximizing the available local workforce by reducing contractor's non-productive time.

As a result of the BBR Working Group's efforts, pilot programs have confirmed the success of some of the proposed solutions such as increasing RAP to 25% in asphalt pavement and implementing flexible contract start dates which allow more contractors to place bids, increasing competition and decreasing costs.



A MODEL FOR OTHERS TO FOLLOW

The BBR program provides an excellent model for other regions to follow because challenges can differ from one region to another. The Working Group shows that creating a forum for collaboration between agencies, contractors, and industry experts leads to open discussions and ideas on how to implement more sustainable, longer lasting, and cost-effective pavements. The forum allows for agencies within the region to discuss their experience with pilot projects, like full depth reclamation and using higher RAP percentages in asphalt mixes. As a result of this collaboration, local agencies have already implemented the use of higher RAP in asphalt mixes making a positive impact on sustainability and cost in the San Diego Region.

Working Group and subcommittee meeting agendas, minutes, and presentations are available on the BBR website for review, use and modeling by local stakeholders and other cities and counties. The findings of the Working Group are developed into technical guidance documents by the subcommittees, which are peer-reviewed by industry experts. These documents are available online so that smaller agencies and others with limited resources can learn about and implement relevant solutions to improve roadways in their communities.

CONTINUING AND SUSTAINABLE POSITIVE OUTCOMES

A key component in ensuring continuing and sustainable positive outcomes from the BBR program is providing tools and training to further educate stakeholders on current processes, programs, and future goals. For example,

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the Working Group has engaged with industry professionals and educational institutions to bring in national leaders in research and development to present on topics such as aggregate sustainability and evaluating high RAP mixes. Site tours at local material suppliers have also been conducted to highlight the challenges with RAP management, processing and storage and the Working Group has hosted workshops on tack coat and other best practices.

The guidance documents developed by the Subcommittees provide detailed technical information and key take-aways for each topic. These documents are easily accessible online so that the Working Group findings can provide an ongoing benefit to regional partners and others. The BBR program is continuing to work with our partners and stakeholders to review our progress and to continue to look for cost-effective alternatives and innovative road resurfacing solutions for our region.

COST-EFFECTIVENESS OF THE PROGRAM/PROJECT

By taking a proactive and regional approach, the BBR program has developed and supported the implementation of several innovative solutions that are providing cost benefits to local agencies. Using more recycled materials, such as RAP, for road rehabilitation provides cost savings and environmental benefits. Implementing alternative pavements such as FRAC are extending the life of pavements for local agencies and thereby decreasing costs. Allowing materials suppliers to extend RAP and recycled concrete storage times are helping to facilitate the increased use of recycled materials in new pavements, which is providing cost benefits and reducing material waste in local landfills. These and other cost benefits are already being realized by local agencies in the region.

POSITIVE EFFECTS ON THE ENVIRONMENT

The BBR program's initiatives are focused on environmental sustainability and supporting climate action plans, as well as promoting the use of more sustainable pavements within the region. Using recycled materials such as scrap tires, recycled road base, and RAP have many positive effects on the environment—from reducing material waste in landfills to decreasing the amount of transportation, processing and manufacturing required for the production of raw materials. Using sustainable pavement preservation treatments is also extending the overall life of the roadway, producing smoother and safer roads, decreasing wear and tear on vehicles, and requiring less future maintenance.

DEMONSTRATES EFFECTIVE COLLABORATION AND PARTNERSHIPS

Collaboration with regional and statewide partners is not only an essential element, but the focus of the BBR program. The Working Group is comprised of representatives from the County, Caltrans, San Diego Association of Governments (SANDAG), numerous local cities, contractors, materials suppliers, organizations, and industry experts. Bringing together diverse expertise, experience, and ideas has provided insight from all perspectives of roadway construction and maintenance that is used to identify key focus areas and inventive solutions to improving the quality and sustainability of regional roads.



RESULTS AND BENEFITS ARE PUBLICLY VERIFIABLE, MEASURABLE, REPLICABLE, AND USEFUL TO OTHER CITIES AND COUNTIES

One of the primary goals of the BBR program is to provide guidance and support for all stakeholders involved in building and maintaining the San Diego regional transportation infrastructure and supporting efforts for other agencies throughout California. The BBR program has placed special emphasis on supporting those smaller local agencies that do not have the resources to research and design new innovations. Working Group and subcommittee meeting agendas, minutes, and presentations are made public on the County's website for review and use by local stakeholders as well as other cities and counties to support this effort. Additionally, the Working Group has developed guidance documents for the specific purpose of educating local agencies and others and providing the tools to implement the innovations identified by the BBR program. Guidance documents are available on the BBR program website and outreach is conducted to share this information with others.



USING INNOVATIVE TECHNOLOGY IN THE PROGRAM/PROJECT

The BBR program is continually exploring and implementing various technologies to support program goals. Examples include pilot projects to explore expanding the use of warm mix asphalt technology, evaluation of fiber reinforced asphalt, and utilizing even higher RAP content in asphalt concrete and pavement preservation mix designs. Other technological solutions are being utilized to improve contracting processes to support more efficient and transparent procurements with a regional bid calendar and enhanced electronic bidding software and processes. During the COVID 19 emergency, the BBR program has embraced virtual meeting technologies and enhanced its web page to continue meeting with, training and providing support materials to local agencies and others electronically. To continue the support of technological innovations, the BBR program has conducted a regional survey of local agencies using a web-based survey tool to gather information and feedback on technologies being utilized by others and to identify interest in new technologies.

ADVANCING THE LEAGUE AND CSAC'S PRIORITIES AND GOALS FOR LOCAL STREET AND ROAD SYSTEM PRESERVATION

The BBR program advances the League of California Cities (League) and California State Association of Counties (CSAC) priorities and goals for the local street and road system by bringing together stakeholders from transportation agencies, local cities and counties, state organizations, and private industries to identify cost-effective, innovative, and sustainable means, and methods to improve the quality and safety of regional roads. **The BBR program is focused on developing and implementing effective solutions that will provide long-term benefits for the region and resources that can be used by local agencies to reduce costs, increase sustainability, lessen environmental impacts, and provide safer roadways for our communities.**