

CALCIMA

California Construction and Industrial Materials Association

December 8, 2021

Michael S. Regan
Administrator
US Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Re: National Recycling Strategy

Dear Administrator Regan

We commend the recently announced National Recycling Strategy. While long overdue, this effort can provide a needed boost for recycling efforts, and potentially achieve a true circular economy. We also believe the Strategy is particularly important following the enactment of the Infrastructure Investment and Jobs Act (IIJA) and can help extend the value of those infrastructure investments in an environmentally progressive way.

The California Construction and Industrial Materials Association, as a trade association for construction materials producers, has long and successfully advocated for policies to increase recycling of concrete, asphalt, and aggregates. We would like to offer suggestions on how the National Recycling Strategy could assist with the recycling of asphalt and concrete.

Recycling of concrete and asphalt conserves natural resources of construction aggregates, oil, water, and limestone, and reduces greenhouse gases by reusing oil, cement, and aggregates, and reducing truck trips. But the 1 million tons of concrete, asphalt and roofing shingles that go to California landfills speak to the need for your Strategy to push California to do more.

The key to incentivizing the reuse of concrete and asphalt is having specifications for roads, buildings, and structures that allow the use of recycled materials. They are an ideal tool to achieve recycling for concrete and asphalt. Specifications are generally written to allow "up to" a certain percentage of material. This means that to the extent the recycled material is available and meets quality requirements it can be used without having to make any special adjustments. It also means that these materials do not have to be used when they are not available. This is particularly important as there can be fluctuations in available recycle materials.

Allowing the use of recycled construction materials expands the market of available materials and thereby achieving greater cost efficiency for public works and other projects. The National Asphalt Pavement Association estimates there was a \$3.3 billion in savings in the 2019 construction season from the use of reclaimed asphalt pavement (RAP) alone.

These are the areas that we believe the Strategy can focus on for maximum impact:

Recycled Materials for Road Base. Using crushed concrete and asphalt rubble as an aggregate in road base is one of the most sensible and achievable ways to recycle concrete and asphalt. Materials producers in California initiated efforts in the 1990's and 2000's, which resulted in Caltrans issuing specifications in 2007 that allow up to 100% recycled concrete and asphalt for road base. They are found in Sections 25 and 26 of the Standard Specifications. While Caltrans has achieved the optimal level, more progress can be made with local governments, some of which continue to prohibit or limit use of recycled concrete and asphalt in road base.

Reclaimed Asphalt Pavement (RAP) in Asphalt Pavements. A huge area of focus of CalCIMA has been to increase the allowable percentage of reclaimed asphalt pavement (RAP) in asphalt pavements. This is a particularly important area of recycling, since it not only conserves aggregates but also oil, which is used as a binder for the aggregates in asphalt. Nationally, the use of RAP in asphalt pavements reduces greenhouse gases by 24 million metric tons.

CalCIMA sponsored legislation (Public Law 2012-230) in 2011 to require Caltrans to develop specifications to allow up to 40% RAP. So far, Caltrans has moved up to allowing 25% RAP since 2018 and has drafted a specification for 40%, although it is still expected to be several years before this can become a standard specification and common on highway projects.

RAP & Local Governments. Despite Caltrans allowing 25% RAP, many California local governments prohibit use of RAP or are still at the 15% level. This is particularly important since most local roads are made of asphalt. Due to this resistance by cities and counties to use recycled material, CalCIMA has sponsored three legislative efforts to increase recycling by local governments. One, AB 2355 (Levine) in 2014, has been codified as PL 2014-609. It incentivized local governments to have specifications that are at least as accepting of recycled materials as Caltrans by 2017. This resulted in some progress, but there are still many cities and counties that continue to prohibit or limit use of recycled materials.

We took the further step of sponsoring legislation in 2020 (SB 1227-Skinner) and 2021 (AB 1035-Salas/Skinner) to require that cities and counties achieve at least the Caltrans level for recycled materials. AB 1035 passed the State Legislature unanimously, but Governor Newsom's veto highlights how much work needs to be done to win over local governments.

Recycled Asphalt Shingles. One promising area is the incorporation of recycled asphalt shingles (RAS). The asphalt content in the shingles can help reduce the reliance on natural sources of oil. Asphalt producers, recyclers, and Caltrans are currently working to complete and test specifications to allow up to 3% RAS in asphalt pavements, as well as combine it with RAP.

Recycled Concrete as a Product. In 2005, producers successfully pursued legislation (P.L. 2005-693) to codify that concrete made of recycled materials is an acceptable product in accordance with identified specifications and codes. CalCIMA and its concrete producer members were also able to advocate for addition of the use of recycled materials in concrete—whether aggregates, water, and other materials—into the concrete provisions of the CA Green Building Code when it was adopted in 2009. Then, CalCIMA sponsored legislation in 2013 (P.L. 2013-154) that expanded the

materials, benefits, applicable codes, and ways concrete can be recycled or incorporate recycled materials.

Returned Plastic Concrete. A particularly ground-breaking area of CalCIMA efforts has been to advocate with Caltrans to establish a specification for the use of returned plastic concrete (RPC). This means taking concrete un-used on a job site, but that is still fresh or moist, and remixing into a new batch of concrete. This effort was undertaken by CalCIMA in cooperation with and through an initiative of the regional office of US EPA (Collaborative for Sustainable Transportation and Infrastructure Initiative—CISTIC #2010-11 re Increasing the Beneficial Use of Returned Plastic Concrete). The result was the first-in-the-nation specification to allow for the use of returned plastic concrete, and still fresh concrete, to be re-used in a mix.

The reuse of returned plastic concrete is the one means that provides the maximum recycling and environmental benefit since it reuses the cement, aggregates, and water from the original mix. A study commissioned by Caltrans and CalCIMA found a reduction of 15.3% in carbon footprint and a 16.2% reduction in embodied energy from use of returned plastic concrete in a mix.

The Caltrans specification adopted in 2013 allows up to 15% returned plastic concrete in minor concrete (non-roadway) applications. It can be found in Section 90-9, Caltrans Standard Specifications.

Since Caltrans' groundbreaking specification, national codes have also adopted standards for use of returned plastic concrete, and at even greater levels. However, there is still much work to be done to get specifications adopted nationwide and to facilitate the implementation and use of returned plastic concrete.

Recycled Concrete for Aggregate in Concrete Pavements & Structures. While the re-use of returned plastic concrete provides the most elegant solution for recycling concrete material, the greater volume of recycling need is in the re-use of hardened concrete. Hardened concrete comes from two sources: 1) Rubble from demolition of roads, bridges, and structures, which is crushed into an aggregate (recycled concrete aggregate--RCA); and 2) unused concrete from a project that is returned to a plant or yard, dried, and crushed (crushed concrete aggregate--CCA).

Given that hardened concrete accounts for the greatest accumulation of materials and placement in landfills, there needs to be more ways to recycle hardened concrete. Currently, the greatest use of RCA and CCA is in road base and making blocks. CalCIMA and members have worked to allow use of RCA and CCA in Caltrans specifications for minor concrete applications, such as sidewalks (Section 90-2). Our next goal is to allow the use of RCA and CCA in concrete pavements. There is substantial research from the Federal Highway Administration, National Concrete Pavement Technology Center and the National Ready Mixed Concrete Association, as well as testing results from individual member companies, on the viability of using recycled concrete as an aggregate in concrete.

The EPA's National Recycling Strategy can motivate state and local governments reliant on federal infrastructure funding with a better understanding of recycled materials methodologies and practices and, in turn, greatly expand the markets for use of recycled materials.

State DOTs. While Caltrans has several helpful recycling standards, they have not always achieved nationally recognized levels attained in other states. Thus, research, specifications, and incentives should be made available to State DOTs to encourage and assist them in reaching higher levels of recycling. For instance, this could result in states specifying 40% RAP or higher levels in asphalt pavements sooner. The same can be said for the adoption of specifications that allow the use of recycled concrete aggregate in concrete pavements and structures.

Local Governments. A key stumbling block in allowing the use of recycled materials lies with local governments. Even though a state DOT may have achieved certain levels of recycling, there remains great resistance from many local governments. This is often reflected in local government specifications flatly prohibiting use of recycled materials—including prohibiting use of recycled asphalt and concrete in road base or RAP in asphalt pavements. Or, in some cases, only allow levels that are outdated and well below current state-of-the-art standards.

We would like to assist the US EPA implement the National Recycling Strategy. Please consider our offer. I can be contacted at rdugan@calcima.org or 916-425-3232.

Sincerely,

A handwritten signature in black ink, appearing to read 'Robert Dugan', written in a cursive style.

Robert Dugan
President & CEO