



# PennDOT's Strategic Recycling Program

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# SRP Background

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**The SRP started in 2000 and seeks recycling opportunities that recognize:**

- Economic savings
- Engineering/construction advantages
- Environmental enhancement

**SRP accomplishes this through:**

- Reducing waste materials generated by PennDOT operations
- Review/revise existing procedures and specifications
- Evaluating performance and use opportunities
- Assessing procurement options to encourage the use





# Focus Areas

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**Research**

**Specifications**

**Projects**

**Outreach**

**Contracting**

# Outreach

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- Collaboration with internal/external partners and stakeholders
- Meetings, correspondence, conferences, webinars
- PAPA, ASHE, NAPA, NCAT, Cargill, Allan Myers, Saint-Gobain, PADEP, Asphalt Plus
- Other state DOT's (ex. Virginia, North Dakota, Delaware, Maryland)





# Acceptance & Specifications

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We work with PennDOT to eliminate provisions that inhibit recycled materials uses and providers to have their products accepted using:

- § Publication 408 “Construction Specifications for PennDOT Projects”
- § Publication 447 “Approved Products for Lower Volume Roadways”
- § PennDOT Bulletin 15 Publication 5 “Qualified Product List”

# Research

- Support manufacturers applying for product evaluation
- Discover and test new products/technologies that address prior concerns/limitations
- Reviewing/modifying other state DOT specifications for use by PennDOT
- Monitor and report pilot performance
- Review university, TRB, and other's research on beneficial reuse and newer technologies



# Approved Recycled Materials

- Recycled Asphalt Pavement (RAP)
- Reclaimed Portland Cement Concrete (RPCC)
- Recycled Concrete Aggregate (RCA)
- Reclaimed Asphalt Manufacturer Shingles (RAS)
- Tire Derived Rubber
- Bottom Ash
- Crushed Glass
- Asphalt shingles
- Fly Ash
- Blown Glass





# Reclaimed Asphalt Pavement (RAP)

- Reprocessed pavement containing asphalt and other aggregates.
- In 2018 report NAPA identified there was approximately 110.3 million tons of RAP that was stockpiled throughout the country.
- Only 21.1% is reutilized back into roadways.



# RAP

(continued)

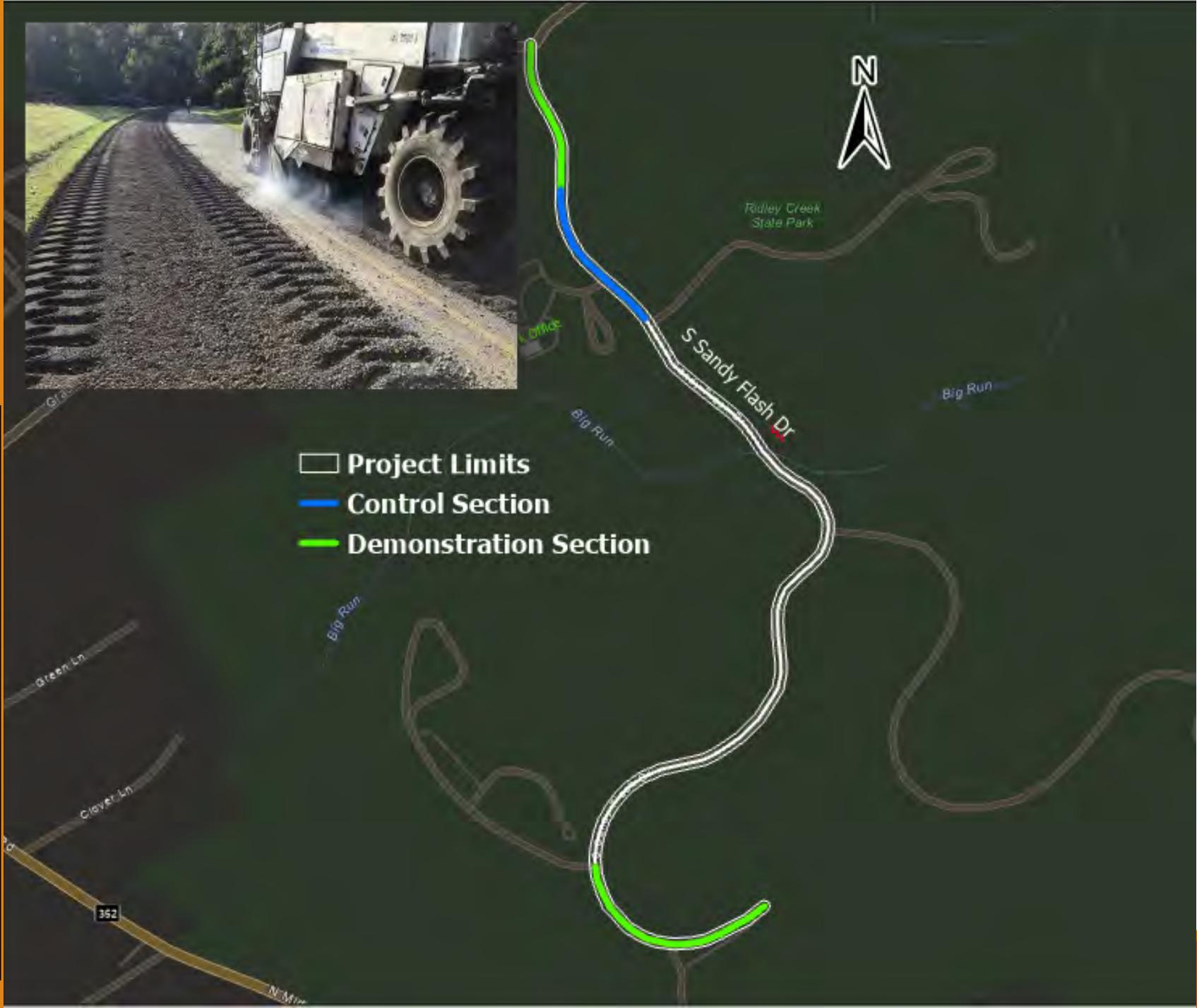
- PennDOT cooperated with PAPA to use 50% on low volume roads. Which are roads with less than 15,000 vehicles a day.
- What are some practices to increase the use of RAP and help mitigate the amount of RAP stockpiles in the commonwealth?
- Where are areas where we can showcase a road with 35%, 40%, or even 50% RAP that aren't considered low volume.

# Projects

- Work with Districts, municipalities, and other state agencies to implement pilots
- Four paving projects that are/will use recycled plastic modifier



# Ridley Creek State Park



# Contracting

- Look at contracting differently
  - ❖ a shared risk and reward
- Understand where recycled materials impact construction
  - ❖ both positive and negative



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# My Ask

The SRP can provide funding for necessary equipment/materials and project assistance. The purchased equipment/material must incorporate a recycled content or result in a reduction of landfilled waste.

## Examples include:

Waste Plastic	Rubber	RAP
Trex Lumber	Traffic Drums	Any maintenance use, that reduces burdens on landfill
Picnic Tables/Benches	Aggregate for Embankments and Structural Backfill	
HDPE Drainage Piping	Sound Reduction Devices	A method or mean to increase the use
Speed Bump/Stops	Guiderail Blocks	



# Request Funding

Within PennDOT, we might be able to support the purchase of a recycled project. A funding request including the following elements must be submitted to the PADEP:

- Description of the equipment/material (including recycled content)
- Where it will be used
- Total cost
- Any additional applicable information

**DATE:** September 8, 2021

**SUBJECT:** MOU funding Request for FY 2021/22 - PennDOT Engineering Districts Plastic Roads Initiative Support

**TO:** Jeffrey Bednar  
DEP Bureau of Waste Management

**FROM:** David Condo, PhD - Acting SRP Manager /s/  
Roadway-SEMP Section/BOMO, PENNDOT

The Pennsylvania Department of Transportation (PennDOT) Roadway/Strategic Environmental Management Program (Rwy-SEMP) Section seeks authorization of to expend approximately \$50,000.00 from the current Memorandum of Understanding (MOU) ME No. 4000018553 to provide funding toward roadway projects that will incorporate the use of asphalt modifiers that are manufactured using waste plastic. Specifically, the PennDOT Bureau of Project Delivery (BOPD) Materials Laboratory is preparing to complete two to five pavement use application projects that will be performed to gather necessary data allowing PennDOT to identify and streamline performance testing requirements necessary in order to develop the most comprehensive PennDOT application specifications for the subject material use in the Commonwealth.



# Thank You

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