



# NEW JERSEY'S RAP CRISIS

Presented to the New Jersey Society of Municipal Engineers  
Somerset, NJ  
April 3, 2019

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# RECLAIMED ASPHALT PAVEMENT

- Reclaimed Asphalt Pavement (RAP) is asphalt pavement removed from existing roadways during rehabilitation or reconstruction. This is typically millings, but could include excavated material, provided it is separated from underlying materials.
- Resurfacing projects throughout the State generate vast amounts of millings

# RECLAIMED ASPHALT PAVEMENT

- RAP production has increased dramatically over the past decade due to:
  - Fewer full depth reclamation projects
  - More maintenance resurfacing to keep roads in a state of good repair
  - NJDEP FHA and SWM rules
- NJDOT and NJAPA have been working together to increase reuse on State highway projects

# RECLAIMED ASPHALT PAVEMENT

- NJDEP released “*Recycled Asphalt Pavement and Asphalt Millings (RAP) Reuse Guidance*” in March 2013, which provided some relief, but was much restrictive than other states
- Since 2013, NJAPA has been working with NJDEP to allow greater use of RAP
- Given that the FHA rules were a major contributor to this crisis, NJDEP revised them in 2015, but...

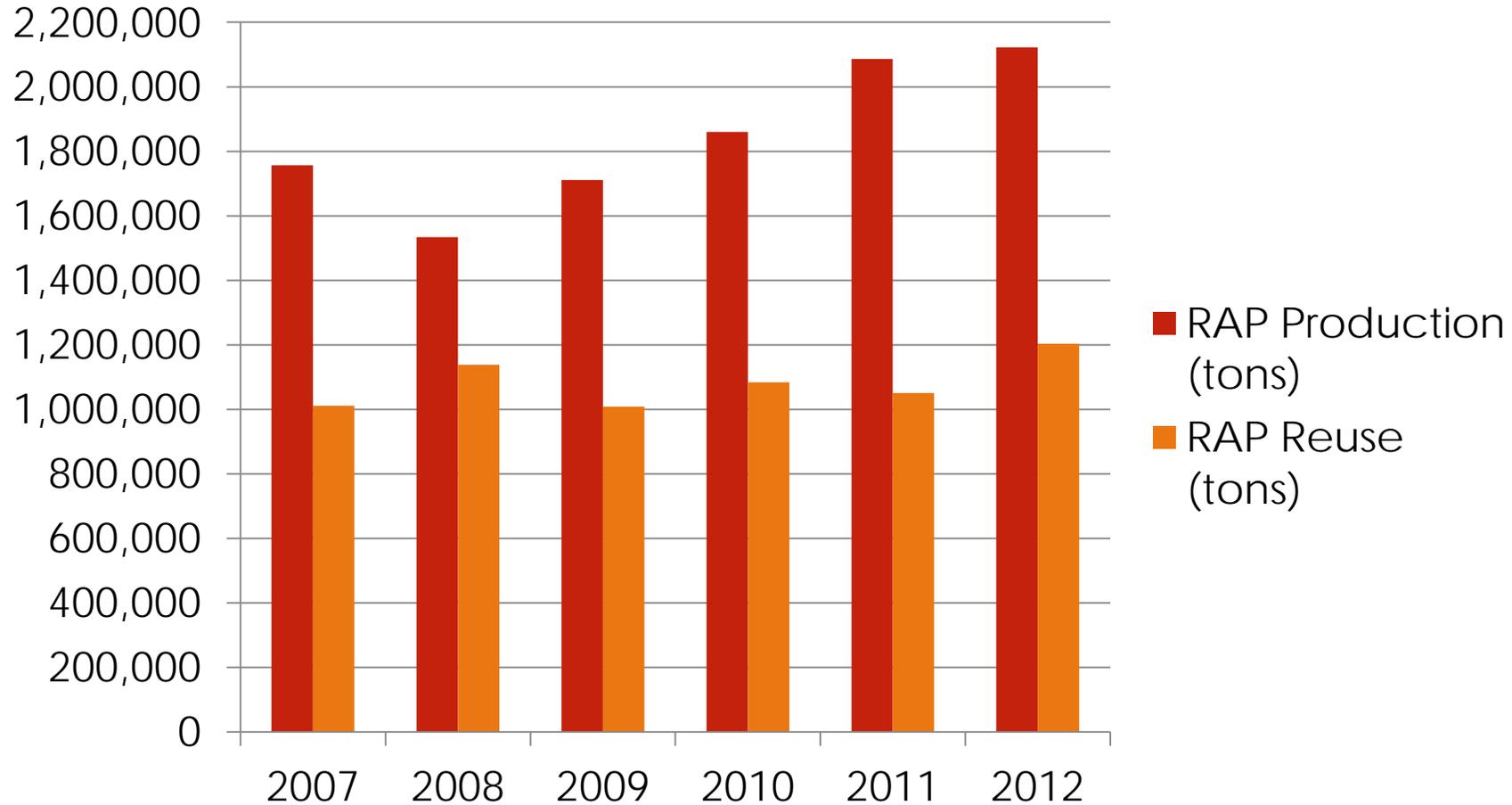
# NJDEP STRICTLY LIMITS RAP REUSE

- NJDEP released “*Recycled Asphalt Pavement and Asphalt Millings (RAP) Reuse Guidance*” in March 2013
  - RAP reuse for quarry reclamation and most commercial and industrial developments is prohibited
  - RAP reuse as an alternative fill material is permitted ONLY:
    - for non-residential roadway transportation and/or construction-related activities
    - under non-residential building structure slabs that are ordinarily unoccupied
    - for roadway and parking area soil aggregate subbase material on projects UNLESS the project must meet NJDOT Specifications

# RAP PRODUCTION & REUSE

- Over 11 million tons of RAP were produced between 2007 and 2012, at an average rate of over 1.8 million tons/year
- At 15% reuse in surface courses (20% in base), as much as 85% of millings is stockpiled
- RAP reuse has not kept pace with production
- RAP storage piles in 2013 exceeded 4.5 million tons
- At the average rate, there may be over 10 million tons stockpiled now

# RAP PRODUCTION & REUSE



Source: NJAPA Member Survey of 7 Members, September 2013

# RAP CRISIS SOLUTIONS?

- **New Jersey needed to find more solutions**
- NJDOT piloted some projects in 2015 with High RAP mix
- The High RAP mix is now approved as a replacement for any hot mix asphalt specified on an NJDOT project
- These mixes must meet strict performance standards not applied to HMA
- Several producers now have mixes approved with 30%-50% RAP

# RAP CRISIS SOLUTIONS?

- NJAPA worked with NJDEP to demonstrate the environmental benefits of RAP as a safe material
- Peer-reviewed scientific studies show:
  - RAP does not leach hydrocarbons into the soil (*Brantley, A.S., Townsend, T.G., 1998, "Leaching Characteristics of Asphalt Road Waste," State University System of Florida*)
  - Polycyclic aromatic hydrocarbons (PAHs) are not present in RAP at high concentrations (*Legret, M., Odie, L., Demare, D., Jullien, A., 2005, "Leaching of heavy metals and polycyclic aromatic hydrocarbons from reclaimed asphalt pavement," Water Research 39 (2005) 3675-3685*)
- A New Jersey specific study by Rowan University showed similar results

# RAP CRISIS SOLUTIONS?

- NJDEP now allows profile changes in flood hazard areas **that are not yet mapped**
- NJAPA asked NJDEP to allow RAP as fill – particularly to reclaim quarries – NJDEP lacked legislative authority
- January 2018 – New law allowing RAP to be used for several new applications – loose for parking, drives, paths, under guiderail, and a quarry fill
- NJDEP is working on regulations to comply with this new law, which went into effect on October 1, 2018

# RAP CRISIS SOLUTIONS?

- **New Jersey STILL needs to find more solutions**
  - Still producing more RAP than can be reused
  - Room to store RAP is being depleted
  - Eventually, recycling facilities will no longer be able to accept RAP
  - Transportation and disposal costs will increase project costs
  - Higher project costs = fewer projects, fewer construction jobs, less tax revenue
  - RAP will be transported to remote locations via truck for disposal, significantly increasing costs and diesel emissions
- Consider using RAP as allowed under the new law – stay tuned for new guidance and regulations from NJDEP



# DISCUSSION

**Any Questions?**

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