

Welcome to Northeast Resource Recovery Association's

Summer Webinar Series

Need Professional Credits?



- Receive 1 hour of professional development credit from NRRA for viewing this webinar.
- Webinars are recorded and made available for those who registered.
- Complete the survey at the end and connect with NRRA.
- Continue your learning with webinars all summer long!
- Visit our new website at: nrrarecycles.org



For Registration: nrrarecycles.org

Operator Track - Wednesdays 9:00 am - 10:00 am			
Date	Webinar	Presenters	
August 5, 2020	Legislative Updates	Josh Kelly, VTDEC; Ariela Lovett, MA Mun. Assoc.	
August 12, 2020	Educate, Don't Contaminate! A Tooklit to Clean up Recycling	Lucy Perkins and Matt Grondin, ecomaine	
	Break		
August 26, 2020	Extended Producer Responsibility (Noontime Start)	Terri Goldberg, NEWMOA; Megan Pryor, MEDEP	
September 2, 2020	Tricks of the Trade	Joan Cudworth, Hollis; Ed Walsh, Rollinsford; Brian Patnoe, Littleton, NH	
	MA Mattress Recycling Incentive Grant Program	Rachel Smith, MADEP	



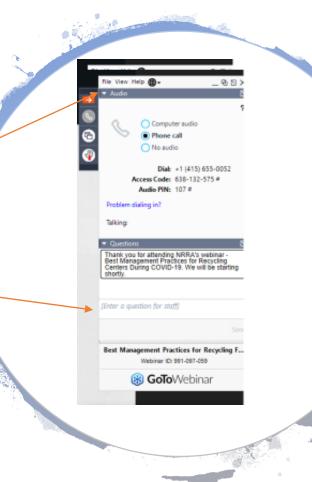
For Registration: nrrarecycles.org

Educator/Community Track - Fridays 12:00 - 1:00 pm			
Date	Webinar	Presenters	
August 7, 2020	The 6th R: Cultivating a Culture of Repair	Ollie Cultrara and Cassandra Hemenway, ACSWMD	
August 14, 2020	Medical Waste: Needles, Pharmaceuticals, Vaping and More	Cindy Sterling, NRRA	
August 21, 2020	Event Waste Reduction: Thinking Outside the Bin for Your Event Part I	Cindy Sterling, NRRA	
August 28, 2020	We Need to Think About Clothing Differently	Joe Whitten, Apparel Impact	
September 4, 2020	Cafeteria Sorting Stations	John Jose, CVSWMD	
September 11, 2020	Event Waste Reduction: Styling Your Event Recycling Plan Part 2	Cindy Sterling, NRRA	



GoToWebinar Setting the Table

- You will not be able to be heard by the presenters or other participants on GTW.
- If you cannot hear the presenters, click on audio and computer audio. If that does not work, try clicking on phone call.
- We hope you ask questions and the presenters will answer them if time allows. Click on Questions and keep it short!





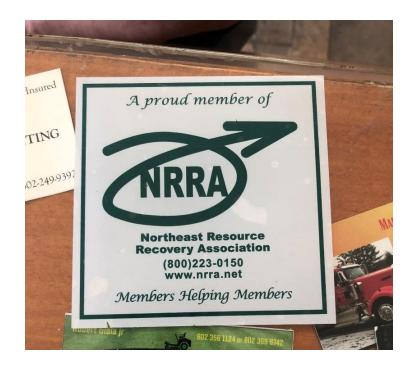
About NRRA

- Recycling nonprofit
- 400+ members, primarily municipalities
- Founded nearly 40 years ago





Cooperative Marketing & Purchasing



- Enable communities to manage their own recycling programs
- 40 programs, including single stream and municipal solid waste
- Connect sellers of recyclables to purchasers



Education & Technical Assistance

- Workshops
- Facility tours
- Annual conference, webinars
- Technical assistance
- School Club programs







The webinar will begin soon!



Using Processed Glass Aggregate in Road and Infrastructure Projects

NRRA Summer Webinar Series July 29, 2020

Reagan Bissonnette Executive Director, NRRA



Madeleine Dilonno

UNH Graduate Student

NRRA Volunteer





Agenda

- Creating PGA
- State Specifications for PGA
- Benefits of Using PGA
- PGA Survey Results
- Examples of PGA Use



Creating PGA

Glass

- Markets for recycling glass are limited
- NRRA offers two glass management programs



Glass Recycling

Into fiberglass insulation

Glass Recycling



Glass bottles and jars only



Canadian vendor cleans and crushes



Made into fiberglass insulation back in US

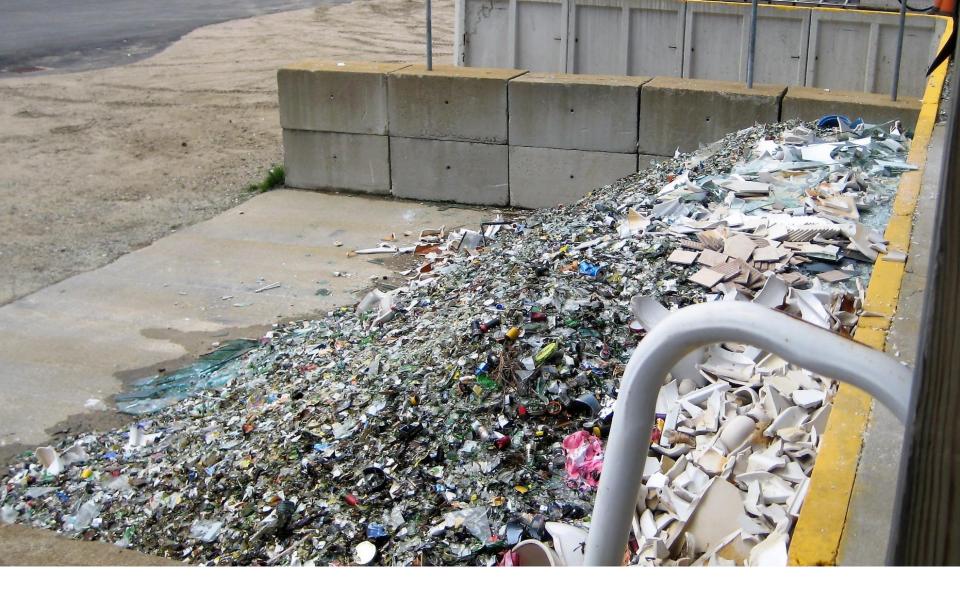


40 communities in NH, VT & MA

Processed Glass Aggregate

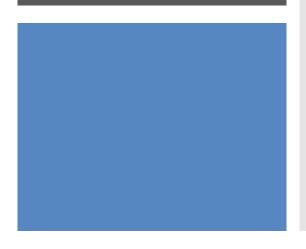
- Glass bottles and jars
- Crush into aggregate when have 1,000 tons
- Subbase for road and infrastructure projects
- 65 communities in NH, VT & MA





Collecting Glass for PGA

Unacceptable Materials



- Headlights
- Thermometers
- Light bulbs
- Windshield glass
- Plexiglas
- Plus others, depending on state

Processed Glass Aggregate Host Sites

(# communities served)

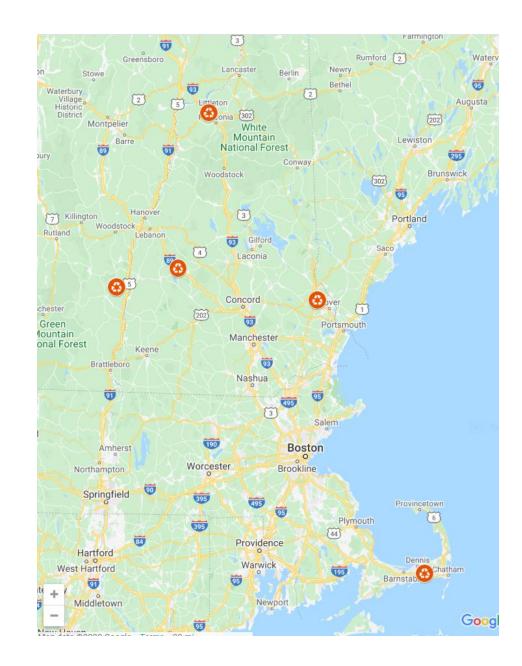
Littleton, NH (7)

New London, NH (25)

Rochester, NH (25)

Springfield, VT (3)

Dennis, MA (5)



Ideal Glass Host Site

- Flat one-acre area
- Truck scale
- Staff inspect each incoming load
- Front end loader to maintain pile



Crusher in Action

Municipal Crusher



Who Owns the PGA?

- Host site owns PGA to use, give away, or sell
- Take back provision for contributing communities if host site has excess material

Using PGA



In general (varies by state):

- Construction projects, including under roads, sidewalks, foundations, pipe bedding, landfill cover
- Can be mixed with gravel
- Can use up to 100% in some private and municipal applications
- Must be covered and not left on surface



State Specifications for PGA



PGA Specifications

Vary by state (see handout)

Glass food or beverage containers

In some states, other glass-like materials also allowed (ex. Pyrex, ceramic)

Crush to 1" or less or 3/8" or less

Various subgrade construction applications

Gradation Requirements

State & Agency	Gradation Requirement
MA DEP	3/8" or less
MA DOT	3/8" or less
NH DES	1" or less
NH DOT	3/8" or less
VT DES	1" or less
VT DOT	1" or less
CT DEEP	3/8" or less
CT DOT	3/8" or less (as reclaimed waste) or 1" or less (in bituminous concrete)
ME & RI	No PGA specifications



Additional Equipment Needed to Crush to 3/8"

Questions?







Benefits of Using PGA

Environmental Benefits of PGA



Alternative to landfilling valuable material



Local use reduces transportation emissions



World is facing shortage of sand and PGA reduces sand and gravel extraction



Glass is inert, so won't erode or leach contaminants

Physical Benefits of PGA



- Not frost susceptible
- Ease of compaction
- Can store uncovered outdoors and won't freeze

Financial Benefits of PGA



Glass is heavy, so expensive to transport and throw away



Valuable cost avoidance strategy



Save money by not buying gravel and sand



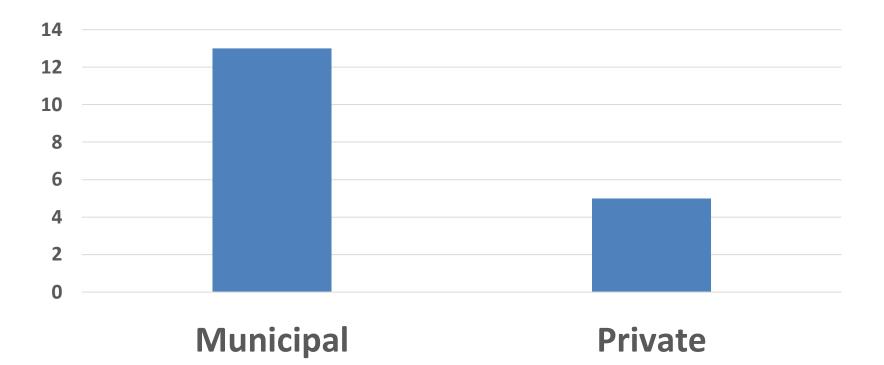
PGA Survey Results

Processed Glass Aggregate Survey

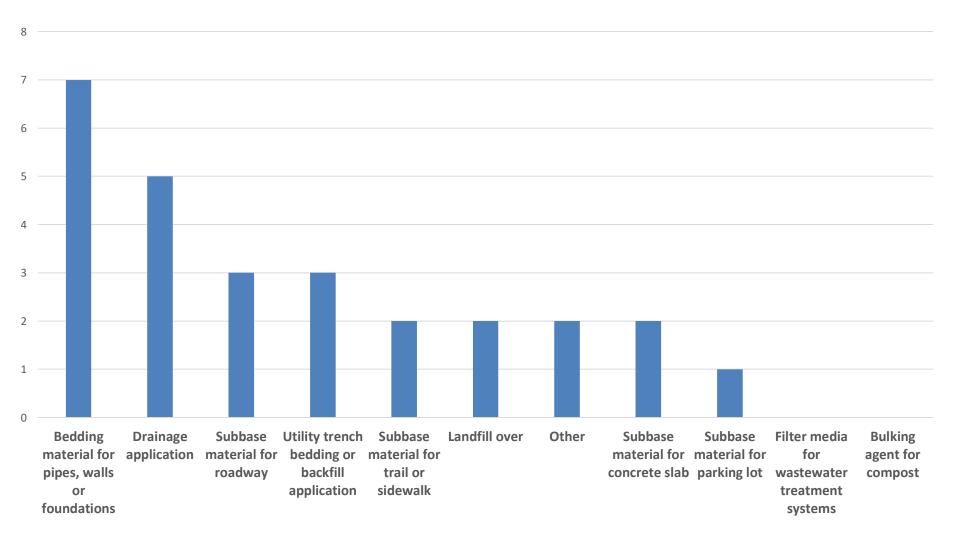
- Launched June 1st
- 16 participants from NH, VT, MA, CT, NJ
- Public works staff as well as private companies



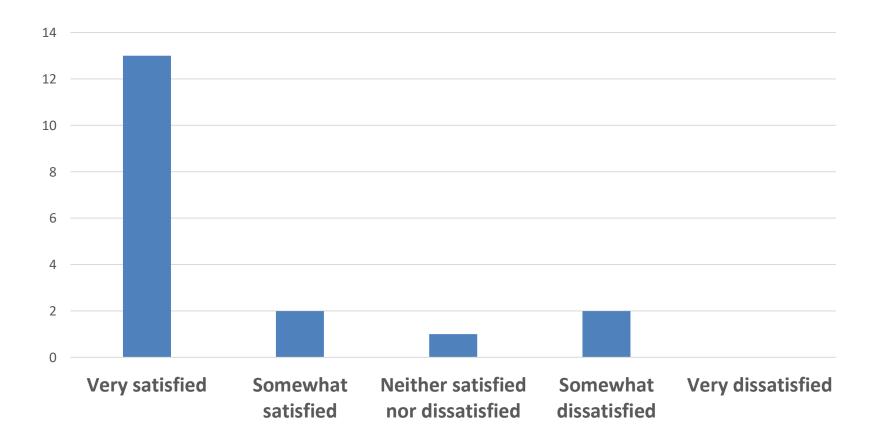
Was the processed glass aggregate used for a municipal project, a state project or for private use?



What was the application of the processed glass aggregate? (Survey)



How satisfied were you with the result after using this material?



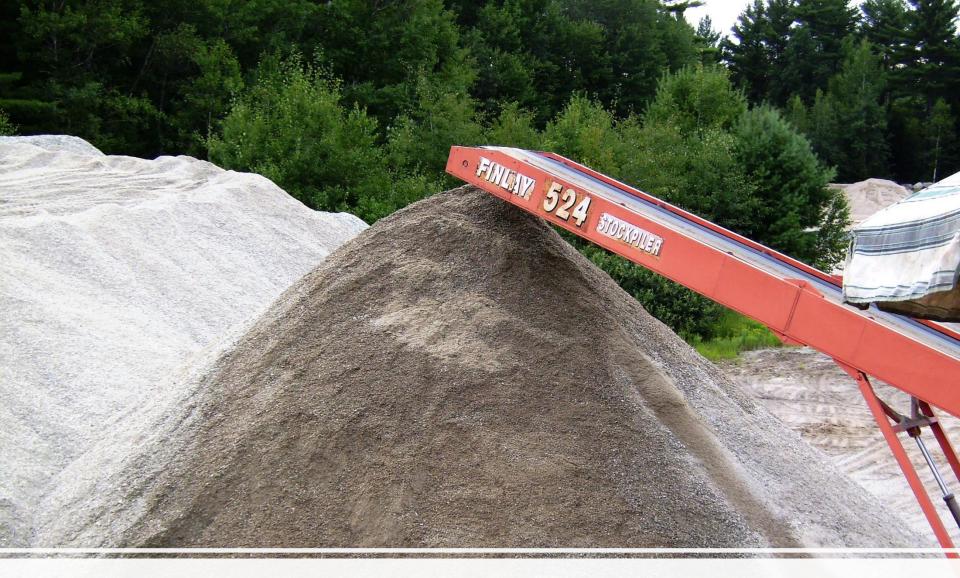
Survey Comments

"The glass saved us money and also had a great compaction factor being mixed with the crushed gravel."

"Good material to use. It is not frost susceptible and can be compacted easily."

"PGA was used under a sidewalk and has held up very well with no frost movement."

"PGA is a terrific material and should be used in place of virgin materials."



Examples of PGA Use



New London, NH – Public Works Garage Floor Base

Laying PGA

Compacting PGA





New London, NH – Parking Lot Base

Lee, NH – Foundation under Bulky Waste Building Lee, NH – Foundation Under Open Top Dumpsters

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Parsons Marsh Trail in Lenox, MA Subbase for kiosk, bench & fully accessible picnic table



Questions?





USDA Support

This material is based upon work supported under a grant by the Rural Utilities Service, United States Department of Agriculture. Any opinions, findings, and conclusions or recommendations expressed in this material are solely the responsibility of the authors and do not necessarily represent the official views of the Rural Utilities Service.

Thank You!

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"Protecting the Environment and Ozone Layer for the Future of Our Children"





Thank You to our Sponsors

Please take the survey at the end of the webinar.





SUMMER WEBINAR SERIES- COMING NEXT

The Messy Truth about Students and Their Garbage

Presenter: Cindy Sterling, Grant Manager Senior Educator, NRRA

Friday, July 31 12:00-1:00 pm





Legislative Updates

Presenters: Josh Kelly, Solid Waste Program, VT Department of Environmental Conservation; Ariela Lovett, Legislative Analyst, MA Municipal Association Wednesday, August 5

9:00-10:00 am



