Anne Arundel County Clean Water Program

Our wAAter
Public Advisory Group Meeting

October 9, 2025

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Agenda

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Nutrient Management Strategy Roadmap

Nutrient Management Strategy Roadmap

Overview - Framework

Recommend trigger: Based adaptive management approach for planned TN load reductions

- Roadmap provides a baseline and upper target of nutrient reduction planning

Baseline: Addresses increases in CAST Model attributed to County's sources

- Implement alternatives that are cost effective

Upper target: Addresses Maryland's increases in CAST model

- Assumes State loads may be shared across all counties
- Plan long-term strategies to meet upper thresholds

Nutrient Management Strategy Roadmap

Short-Term & Long-Term Focus

Short-Term

- Target outreach for septic conversions with increased subsidy
  - All gravity connections for individual and small projects
- Implement all minor systems projects
  - Address six mobile home parks
- Support DNR Restoration and oyster farms through oyster BMPs
- Plan for additional stormwater BMPs beyond current permit cycle
- Continue studies to advance MAR demonstration testing

Long-Term
(dependent on future WIP)

- MAR full-scale implementation
- WRF upgrades

Nutrient Management Strategy Roadmap

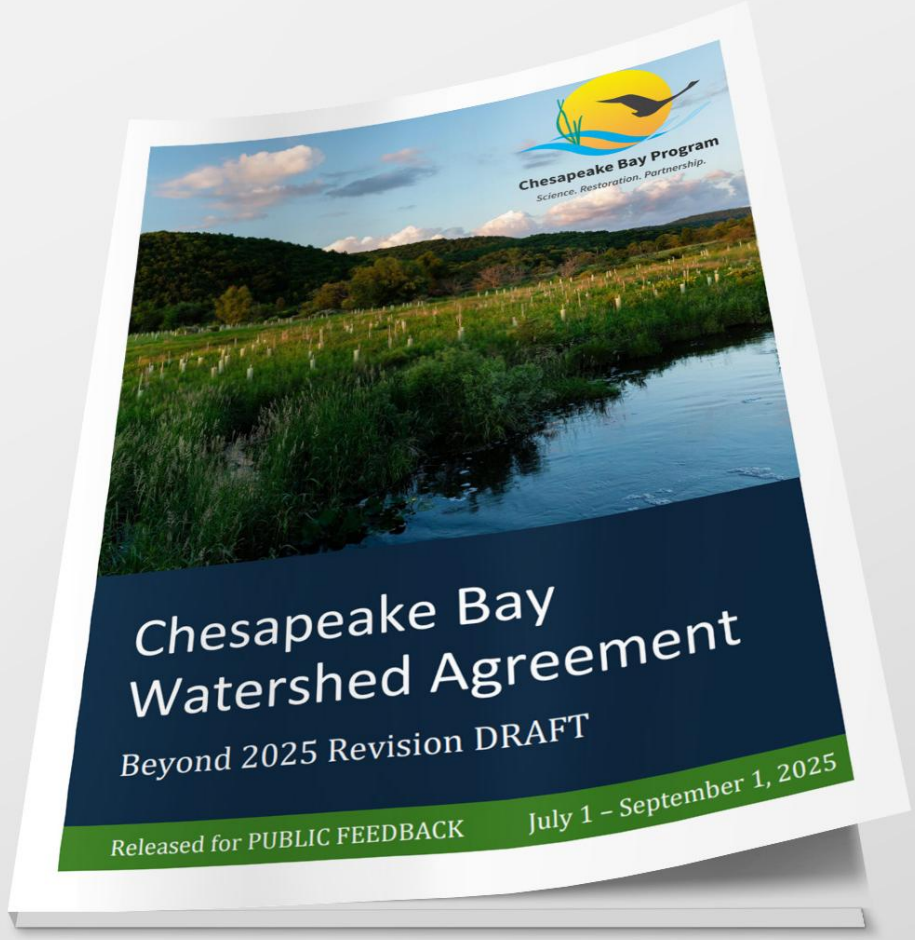
Proposed Roadmap Overview

Program Element	lbs TN per year	Est. Capital Cost (2025$)	Lifecycle cost to DPW ($/lb TN)
Individual Septic Connections (Gravity)	16,000	$37M	$1,000
Small Septic Connections (Gravity)	10,000	$37M	$1,600
Minor Systems Upgrade	17,000	$45M	$1,400
Oyster Harvesting (70 acres) (only O&M)	10,000	-	$1,900
Oyster Restoration (500 acres)	10,000	$48M	$2,400
Enhanced Impervious Area Rest. (1,110 acres)	20,000	$55M	$2,800
Large CIP Septic Connections (800 conn.)	10,000	$66M	$3,300
Subtotal for Baseline	**93,000**	**$301M**	
MAR (Broadneck)	45,700	$283M	$8,100
WRF Upgrades (Sand/GAC at Patuxent)	9,300	$30M	$10,700
Total for Upper Limit	**148,000**	**$600M**	

Nutrient Management Strategy Roadmap

Potential Triggers

- Increases in TN reduction goals
  - Stricter future WIP
  - Regulatory requirements for WRFs
- Decreases in TN reduction goals
  - Projected WRF flows
- Changes in feasibility
  - Regulatory changes for MAR
  - Septic conversion participation



Septic Policy Changes

Potential changes under consideration

- Increase in County contribution to 50%
- Utility Fund Subsidy vs. County Subsidy
- Modify the subsidy calculation
- Have partial deferment match elderly deferment
- Allow BWPR funds for individual connections

Net effect would be to enable more funding to be offered to residents and simplify components of the program

Large CIP Updates

OSDS Program: Potential Changes

- Started another task to evaluate the Large CIP program
- Eliminate the application process due to lack of interest
- Limited time incentives packaging with targeted outreach
  - Targeted outreach will be informed by prioritization
  - Revisit prioritization methodology
- Strategies to limit upzoning
- A potential septic user fee
  - Explore fee amount, legal implications

Large CIP Approach

Review

- Voluntary
- Mandatory Requirement
- Prioritized Outreach
  - What is the structure?
  - What to emphasize?

Example Criteria

Program Ranking Existing Large CIP

Environmental and Health

- Total pounds of TN removed per year
- Properties located in the Chesapeake Bay Critical Area
- Properties located in Onsite Wastewater Management Problem Areas

Cost

(derived from the total project cost)

- $ per pound of TN removed per year
- $ per Equivalent Dwelling Unit (EDU) connected

Availability of Existing Infrastructure

- Distance from the project area to an existing trunk or interceptor sewer

Engineering Considerations

- Infill potential (vacant lots)
- Need for grinder pumps

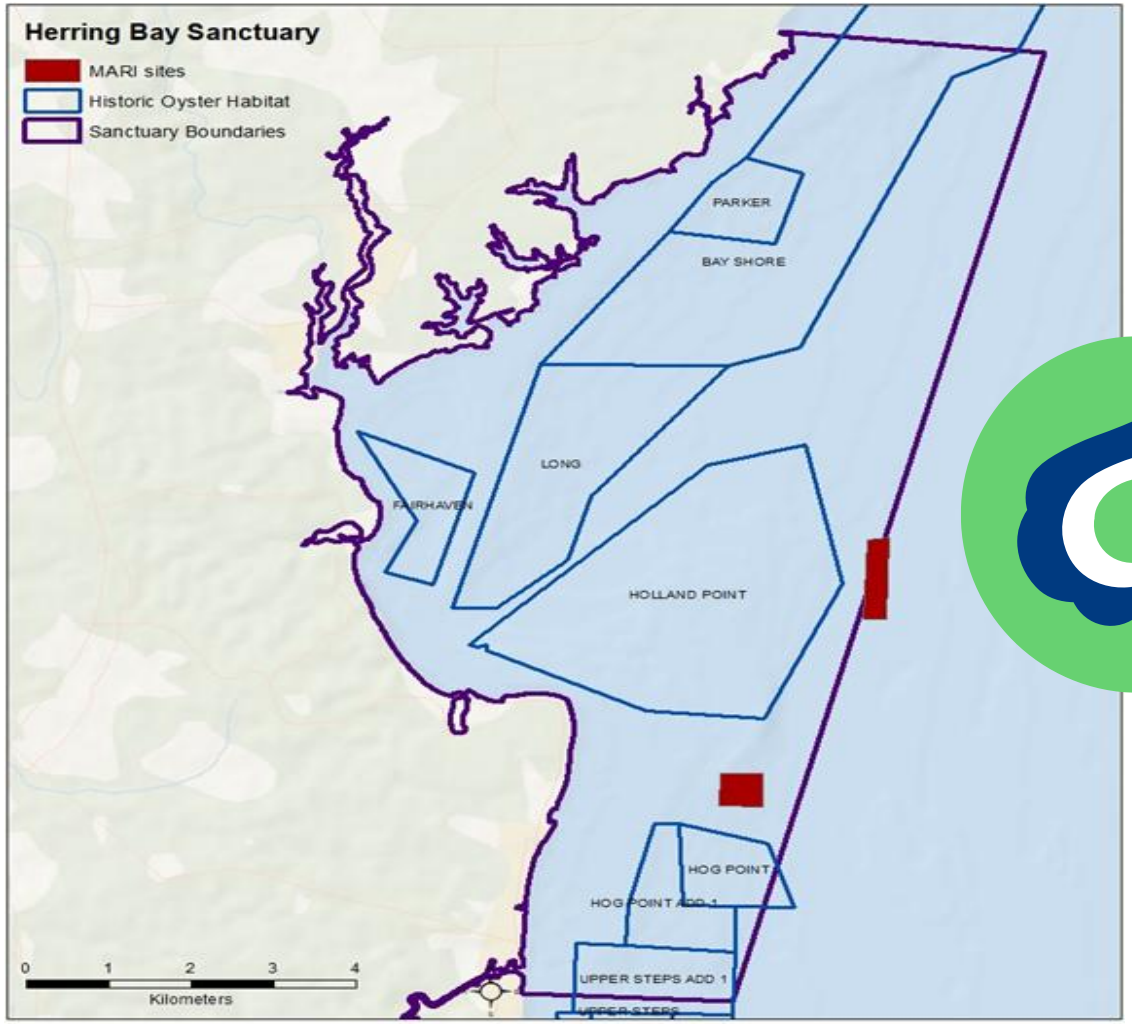
Stormwater

Bureau of Watershed Protection & Restoration

- Met and exceeded permit requirements
- Projects generally been less expensive than anticipated
- Future projects have been identified that can continue progress

Oyster Partnerships

Herring Bay Sanctuary



3 MAR Videos

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MAR Partnerships & Meetings

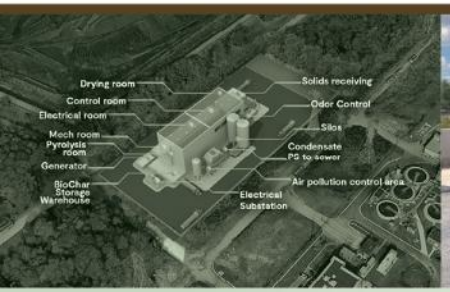
Speaker Series Events

- Smithsonian Environmental Research Center - *Virtual Science Talks*
- The Public Works Experience - *'No Water No Beer'*
- Chesapeake Bay Trust
- Jug Bay Wetlands Sanctuary - *Soup & Science Lecture Series*
- Chesapeake Bay Commission - *Chesapeake Bay Awareness Week*

County Councils/Associations

- Greater Severna Park Council
- Mayo Civic Association
- Glen Burnie Improvement Association
- Broadneck Council
- Region Stakeholder Advisory Committees
- Anne Arundel Community College
- Anne Arundel County Watershed Stewards Academy

5 Biosolids Project



• Introduction to the County's Biosolids Facility Project

- Project No: S810200
  Contract No: S810201

October 9, 2025

→ The Power of Commitment

Realizing a more resilient future through collaboration and innovation

Today’s Agenda:

MEETING PURPOSE

BIOSOLIDS 101

OUR PROJECT PLAN

QUESTIONS FOR THE PUBLIC ADVISORY GROUP

What are “Biosolids?”

What is Wastewater?

→ Water + “other stuff”

How is Wastewater Treated?

- Biological reactors separate water from “Other stuff”
- “Other stuff” is consumed by bacteria
- Dead bacteria create “sludge”

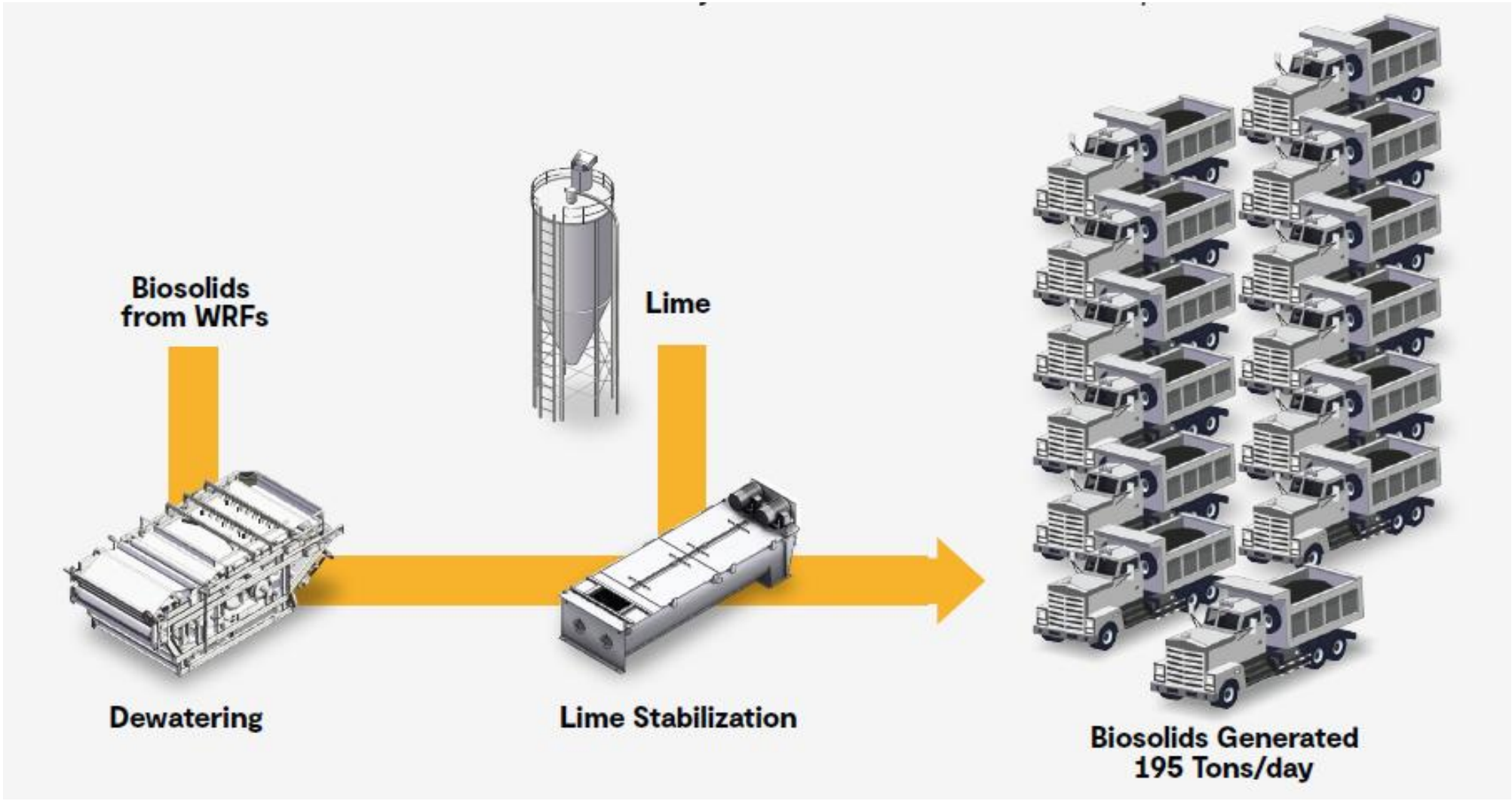
What happens to “Sludge?”

– Pressed to remove more water
– Result is dewatered sludge
– We call this “Cake”

– Cake is a solid derived from the biological treatment process
– Therefore, “Biosolid”

Why are we looking at Biosolids?

Current Biosolids Operation



Why not keep using land applications?

Two problems:

- Expensive with **limited cost control**
  - Synagro was only bidder on last dewatering contract
  - Lack of competition may result in higher rates
- Future regulation may **limit or eliminate re-use options**
  - Maryland legislature proposed a bill this year to restrict land application over PFAS concerns
  - Bill failed, but could be tried again…

What can the County do about it?

County commissioned a **Biosolids Master Plan**

Plan evaluated many alternatives to current arrangement

Ultimate recommendations were to:

- Implement advanced biosolids treatment to produce **“Biochar”**
  - Operational and energy efficiencies
  - End product has more reuse potential than Biosolids
- **Centralize** Advanced Biosolids Operations
  - Capital cost efficiency

Project Objectives

Support long-term financial stability

Reduce exposure from escalating biosolid management costs due to market and regulatory changes

Directly control how biosolids are managed

Enable operational efficiencies through volume reduction

Reduce the amount of residual material to be handled from the County's Water Reclamation Facilities

Demonstrate responsible environmental stewardship

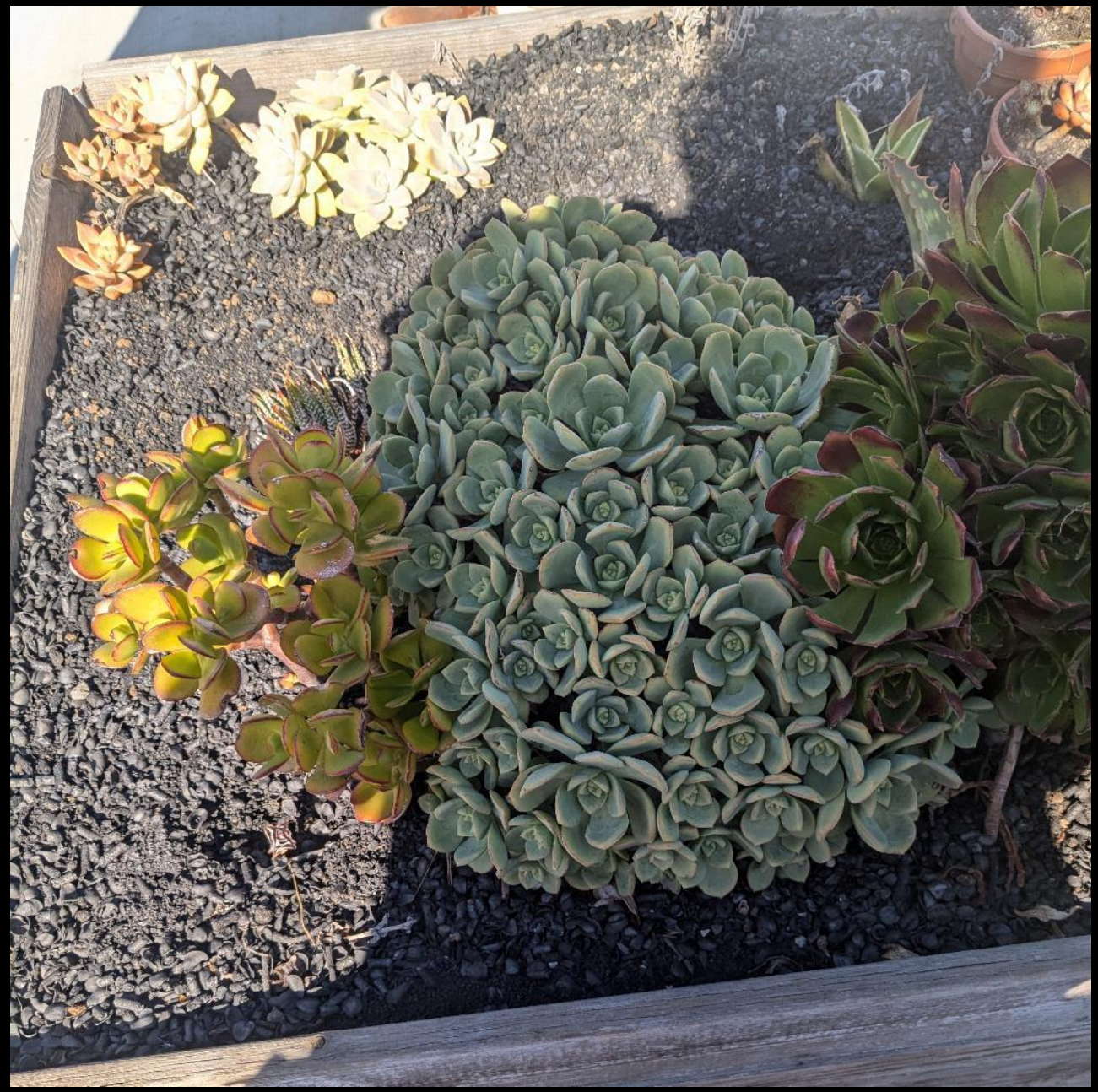
Transform biosolids generated by County residents and businesses into a safe and sustainable resource

Produce an environmentally beneficial residual material free of PFAS & CECs

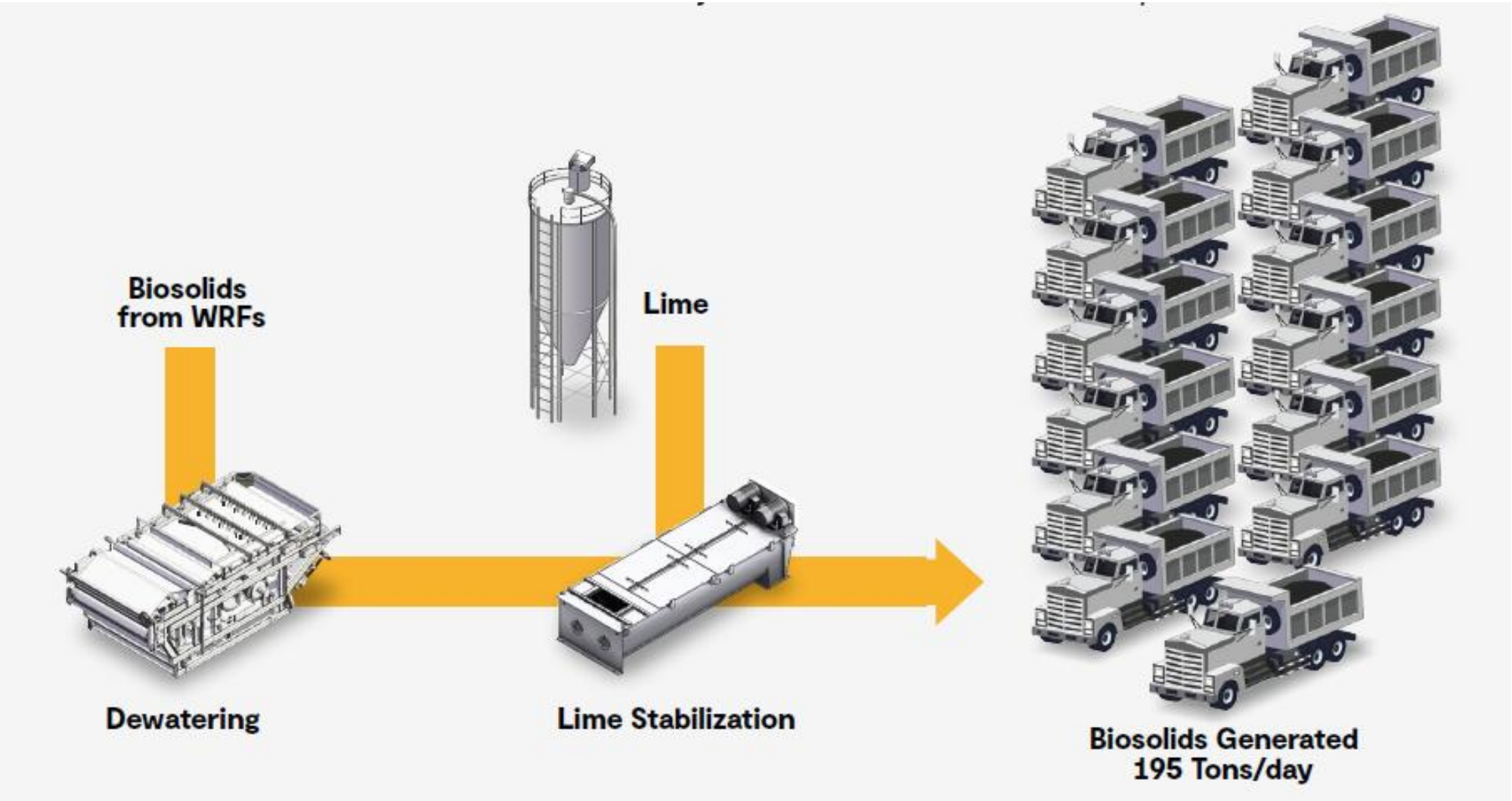
What is biosolids “Biochar?”

What is biosolids “Biochar?”

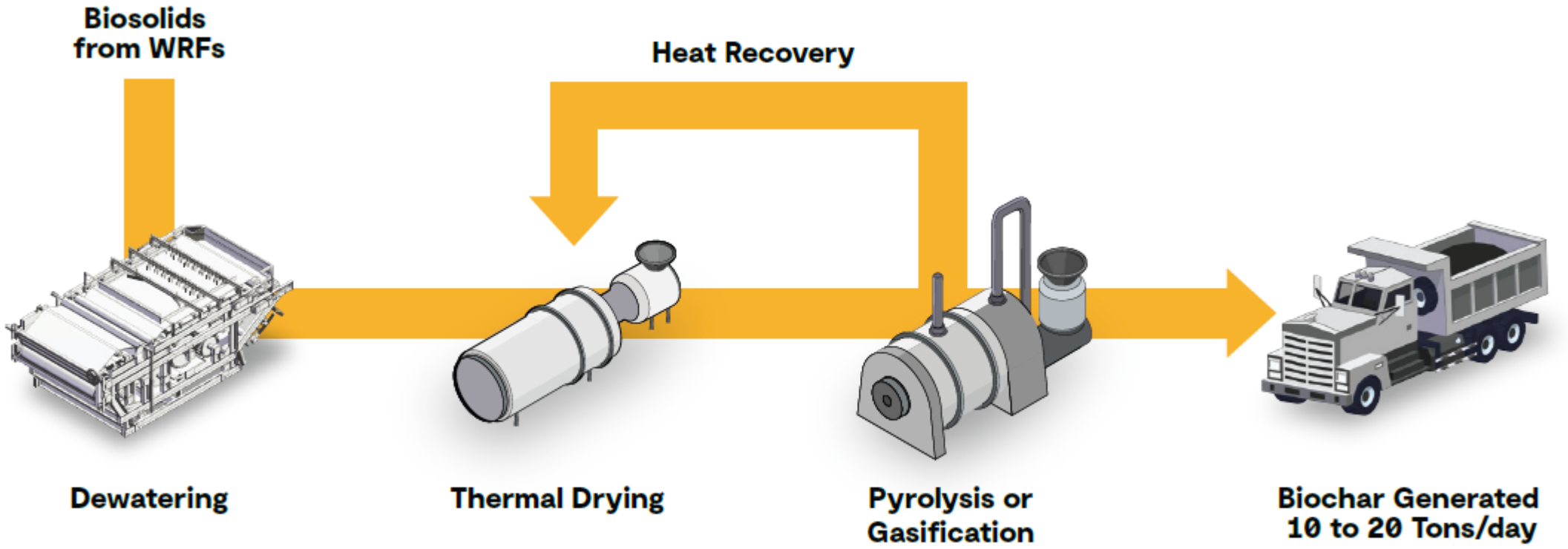
- Highly-processed biosolids
- Dewatered cake is first “dried”
- Dried biosolids are heated in a controlled environment
- Produces an inert, carbon-based solid akin to charcoal



Current Biosolids Operation



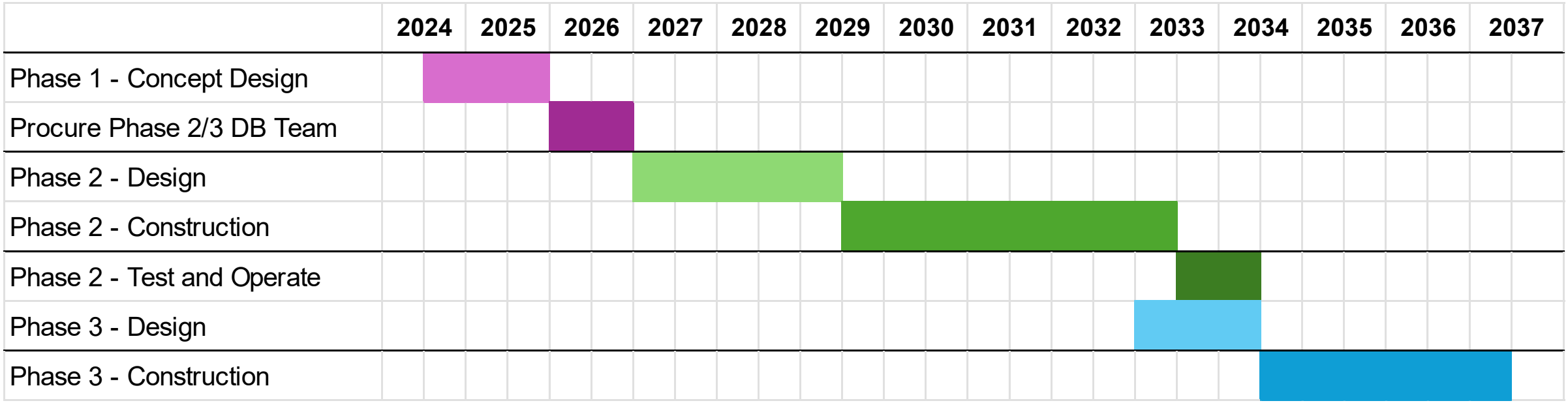
Proposed Biosolids Operation



90% reduction!

Project Plan

- Build a centralized biosolids facility at Cox Creek WRF
- County will operate the new centralized facility
- Conduct market research into potential end-product use



Questions and Takeaways:

- **For the members of the PAG:**
  - Which aspect of this project resonated the most with you?
  - What message are you taking home from this presentation?
  - Is there anything about this project you want to hear more about?

- **For the public:**
  - What level of interest would you anticipate from the public on this project?
  - What would you anticipate the public would want to know?
  - Are there any exciting/intriguing aspects of this project which we should elevate in our public messaging?

Our wAAter.

THE ANNE ARUNDEL CLEAN WATER PROGRAM

Thank you!