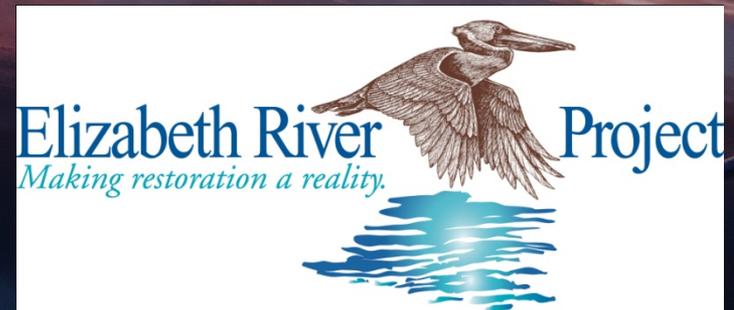


# Restoration of the Lafayette River

Joe Rieger, Deputy Director of Restoration  
(Elizabeth River Project)

Presentation to RPDC's Regional Environmental  
Committee

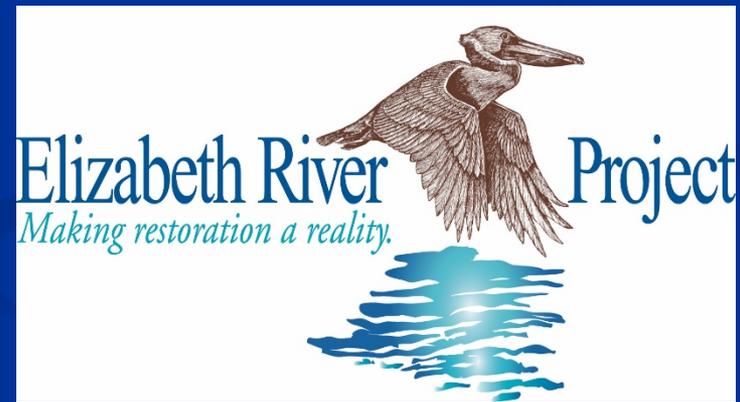
September 1, 2016



# The Elizabeth River Project

**Mission:** Restore the Elizabeth River to the highest practical level of environmental quality through government, business, & community partnerships.

- **121 River Star** facilities
- **Government** projects with US Navy, NOAA, US Army Corps of Engineers, US EPA, VA DEQ, VA DCR, Norfolk, Portsmouth, Virginia Beach, & Chesapeake.



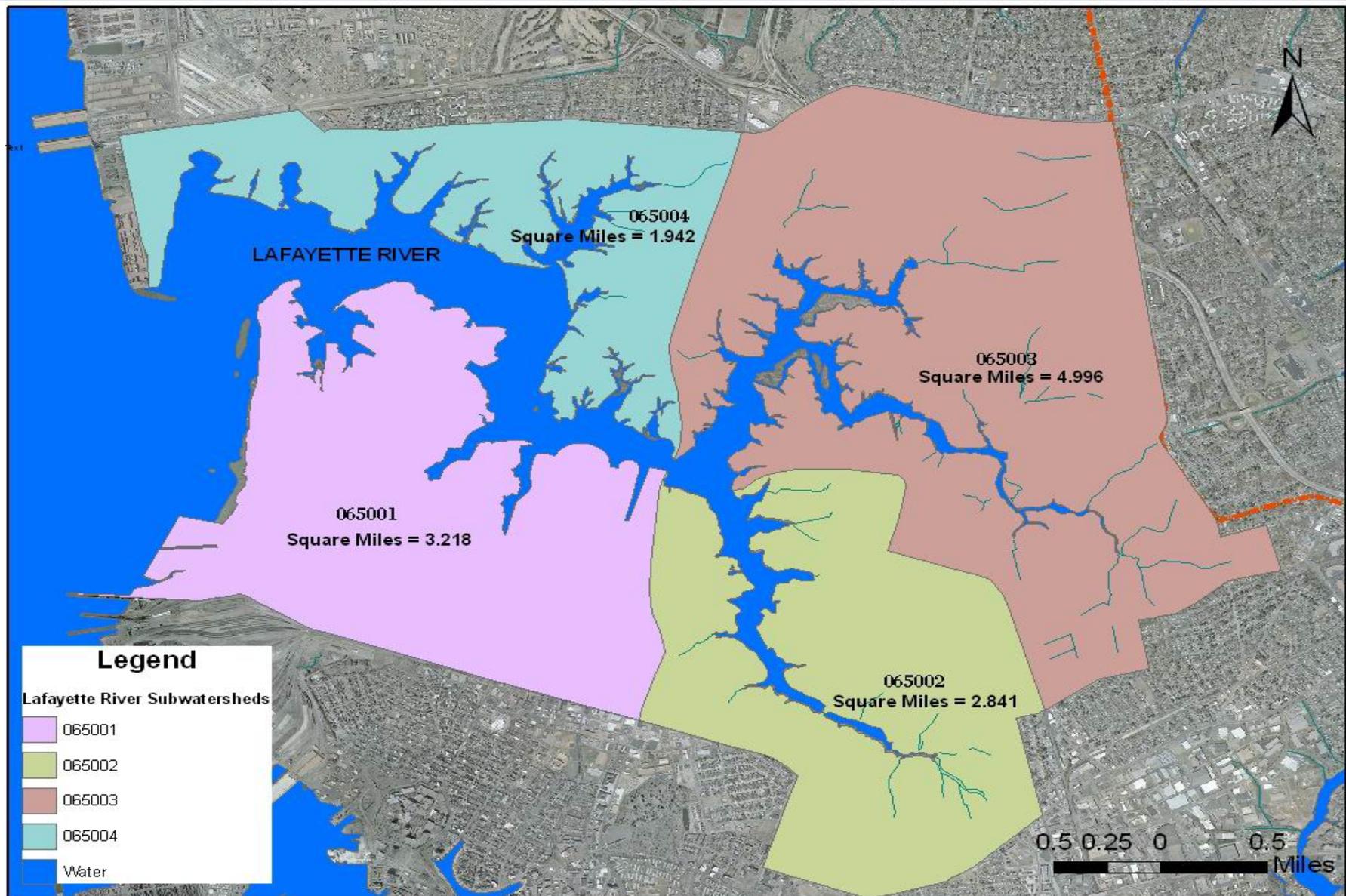
# Lafayette River Restoration Plan



# Goals of the Plan

- **Goal 1: A Swimmable Lafayette River**
- **Goal 2: Healthy River Life**
- **Goal 3: Citizens Make the Difference**

# 21 Square-mile watershed



# Goal 1 – A Swimmable Lafayette River -

Reduce harmful bacteria by 2014 to levels that are safe for recreational contact in all practical reaches of the Lafayette.

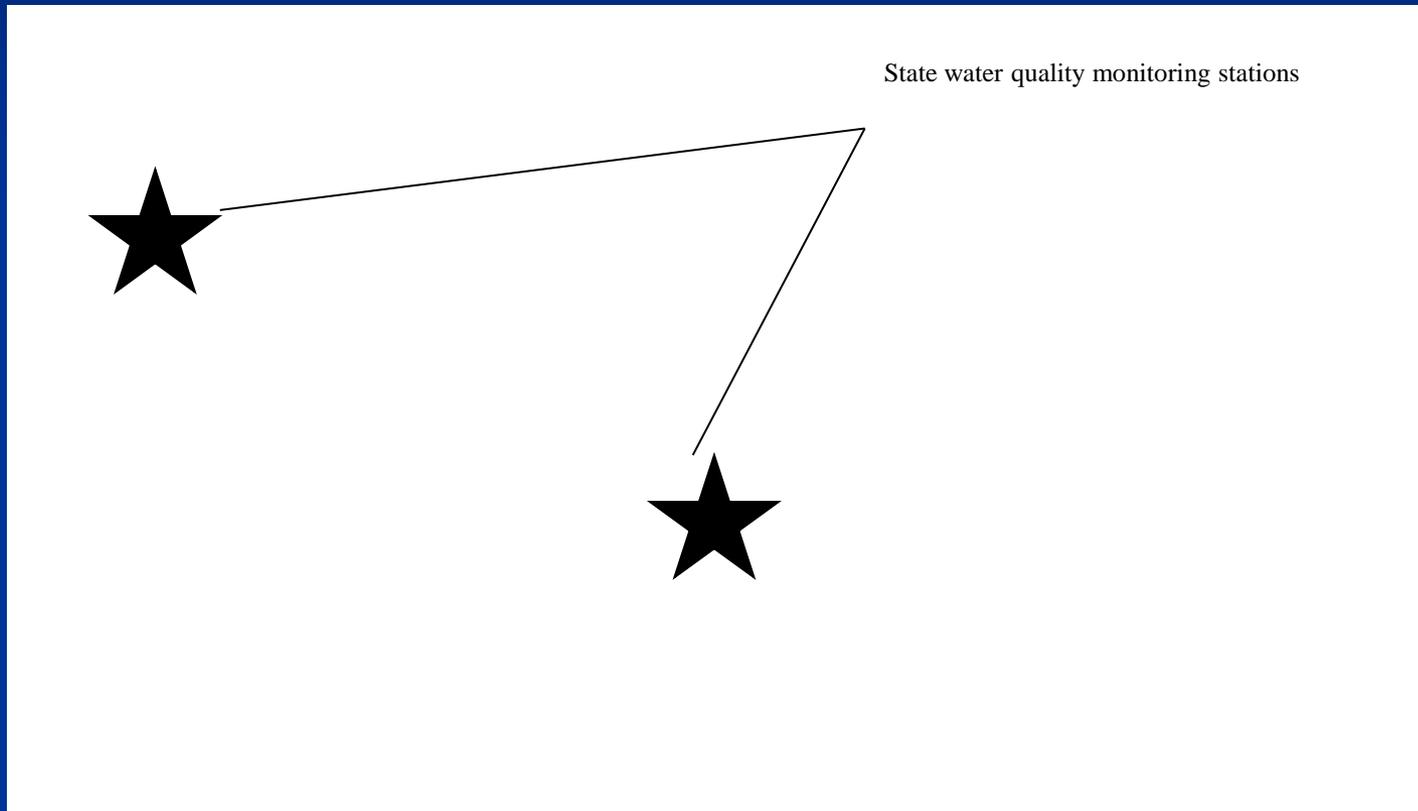


- *Measurable:*  
Meet state water quality criteria for safe human contact with bacteria.

# Action Steps Identified

1. Develop and carryout the TMDL.
2. Support ongoing large-scale waste and storm water improvements.
3. Conduct a boater education forum to consider a “no discharge” zone.
4. Provide citizen training for identifying and reporting pollution problems.

# Impaired Waters in the Lafayette River



Most of the river did not meet the state's criteria for safe fishing and recreational contact.

# Some of the Actions Taken

- Worked with City of Norfolk on numerous stormwater projects.
- Worked with HRSD on a large wastewater pipe replacement across the river along with waste water upgrades.
- Conducted numerous bacteria sampling in partnership with HRSD and City of Norfolk.



# Goal 2 – Healthy River Life - Achieve

healthy, plentiful wildlife in the Lafayette River

## *Measurables:*

- 1) Reduce red tide to non-harmful levels by 2020.
- 2) Eliminate fish kills.
- 3) 2014 goal of “restricted” rather than “prohibited” oyster harvesting, based on reduced bacteria. Strive for open oyster harvesting by 2020.
- 4) Increase or enhance functioning wetlands by 10 acres.
- 5) Increase oyster reefs by 10 acres, including oyster reef balls.



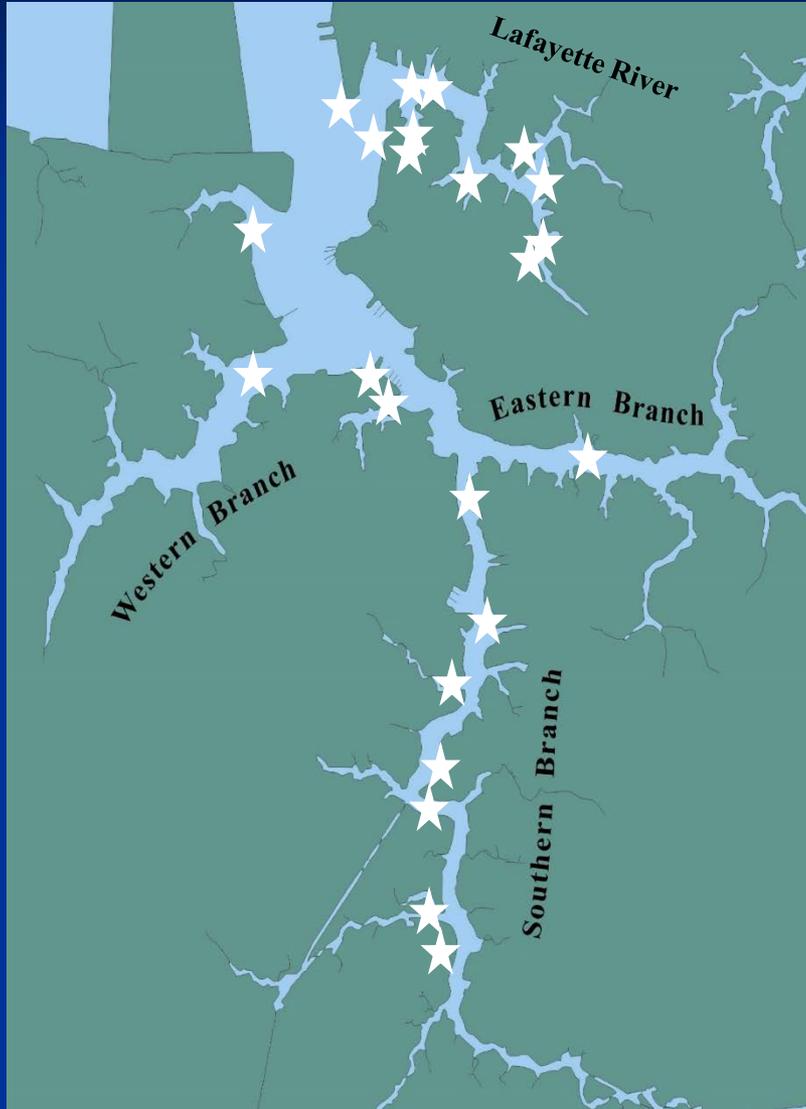


# Some of the Actions Taken

- Worked Lafayette Wetlands Partnership to carry out numerous wetland restorations.
- Worked with CBF and NOAA to restore over 10 acres of oyster reefs.
- Worked with River Star businesses to carry out habitat and pollution prevention projects.



# Reef Restoration



# Goal 3 – Citizens Make the Difference –

Encourage river stewardship in the Lafayette community through public awareness and action

## *Measurables:*

- 1) Count 1,000 River Star Homes making a difference.
- 2) Enlist all civic leagues in the Lafayette community.
- 3) Engage all socio-economic levels.
- 4) Enlist all Lafayette schools as “RiverStar Schools”.





Lawn makeovers



125 gallon rain barrels



Shoreline buffers



Rain Gardens

# Some of the Actions Taken

- Held four RiverFest events for the Lafayette which engaged over 10,000 residents.
- Recruited around 2,000 RSH in the Lafayette and carried out over 200 parcel level projects.
- Worked with all schools in the Lafayette Watershed to educate about the importance of restoration.



# Results

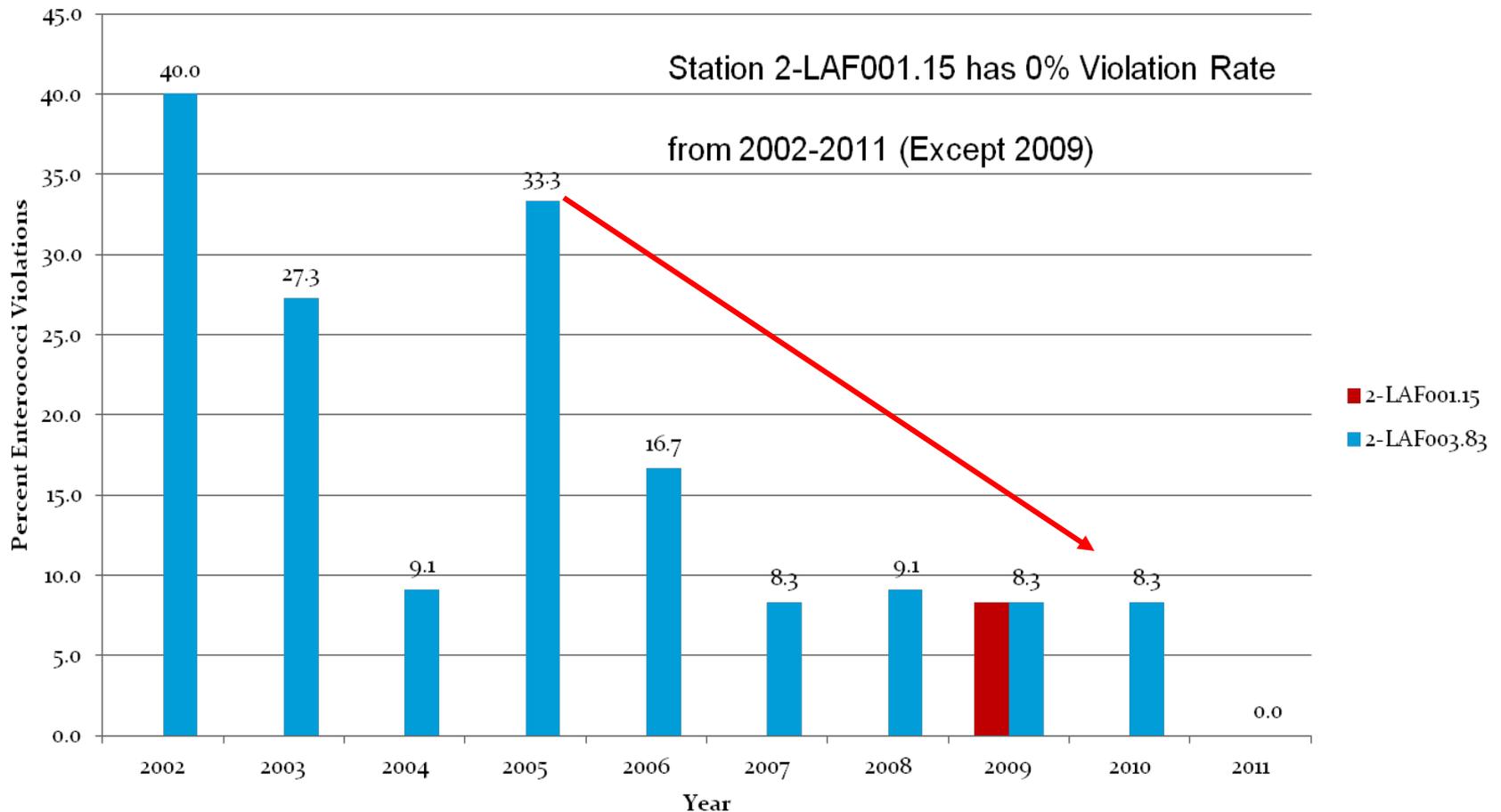


Lined Seashore

# Historic Progress

- More than 50% of the Lafayette met the state criteria for shellfish harvest!
- Lafayette River has been taken of the impaired waters list for bacteria.

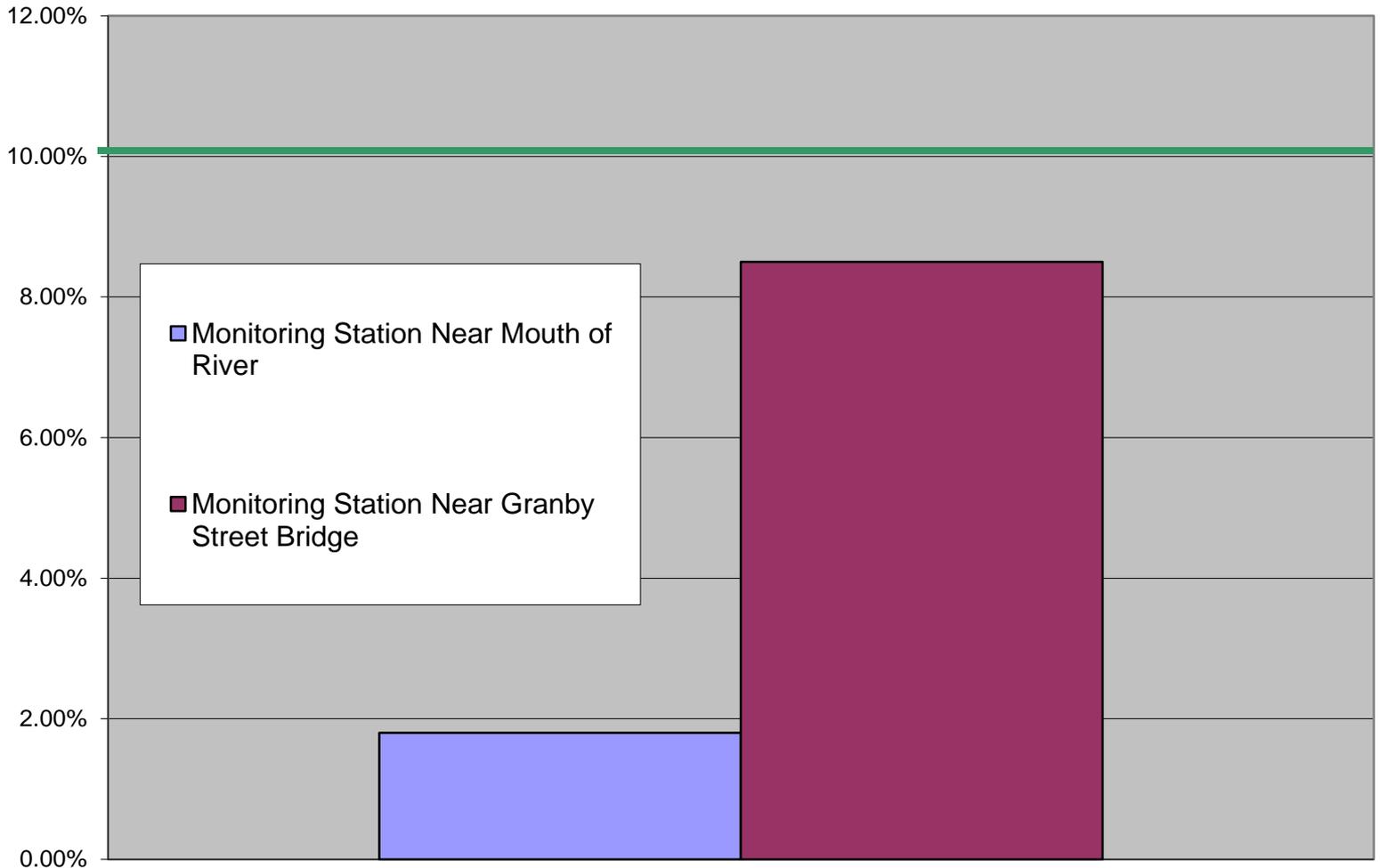
# Results



There have been significant reductions in bacteria on the Lafayette River since 2005.

# Percent Bacteria Violations From 2007 to 2012 At Two Monitoring Stations in the Lafayette River

Percent Enterococci Violations



VA DEQ data from 2007-2012 to be used in report potentially removing Lafayette from impaired waters.

# Average Bacteria Levels After Rain

LAFMH

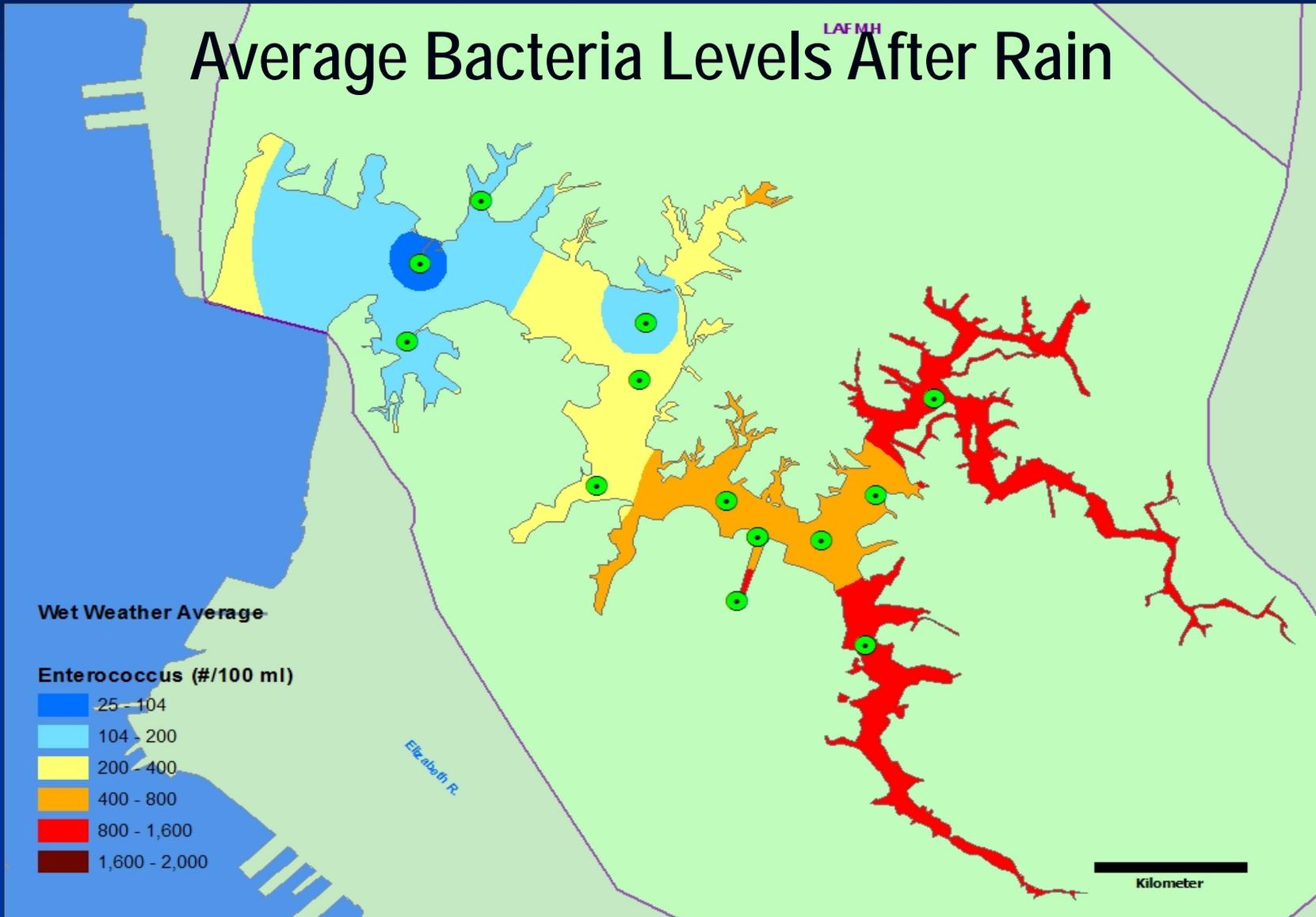
Wet Weather Average

Enterococcus (#/100 ml)

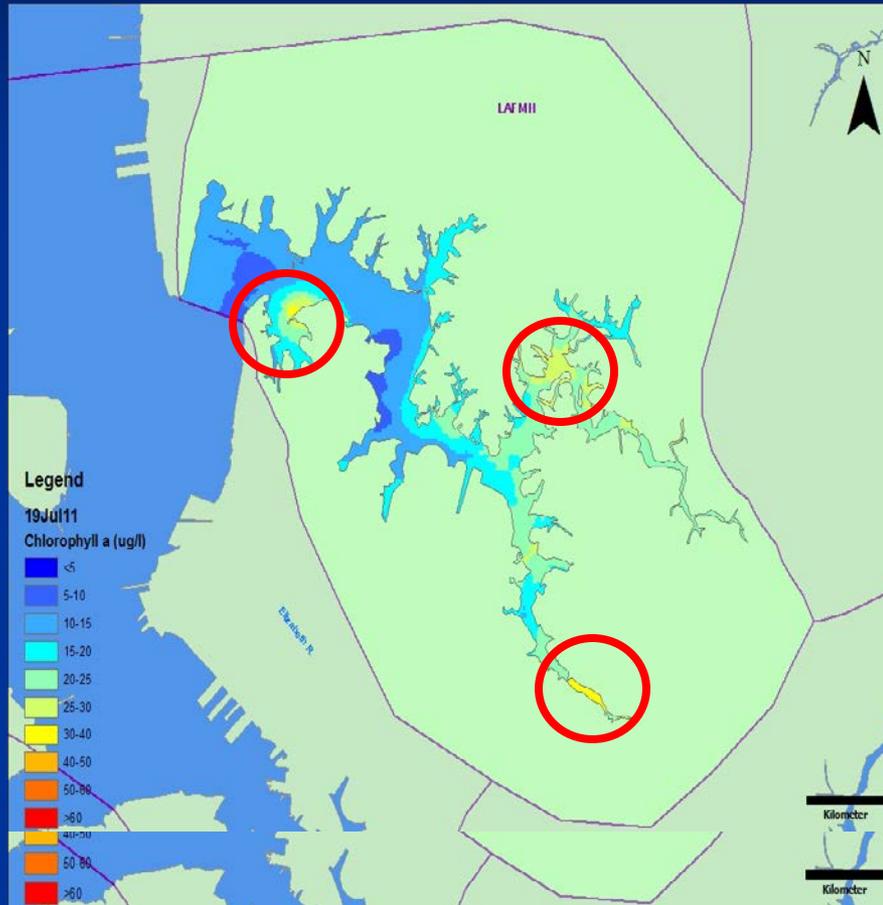


Elizabeth R.

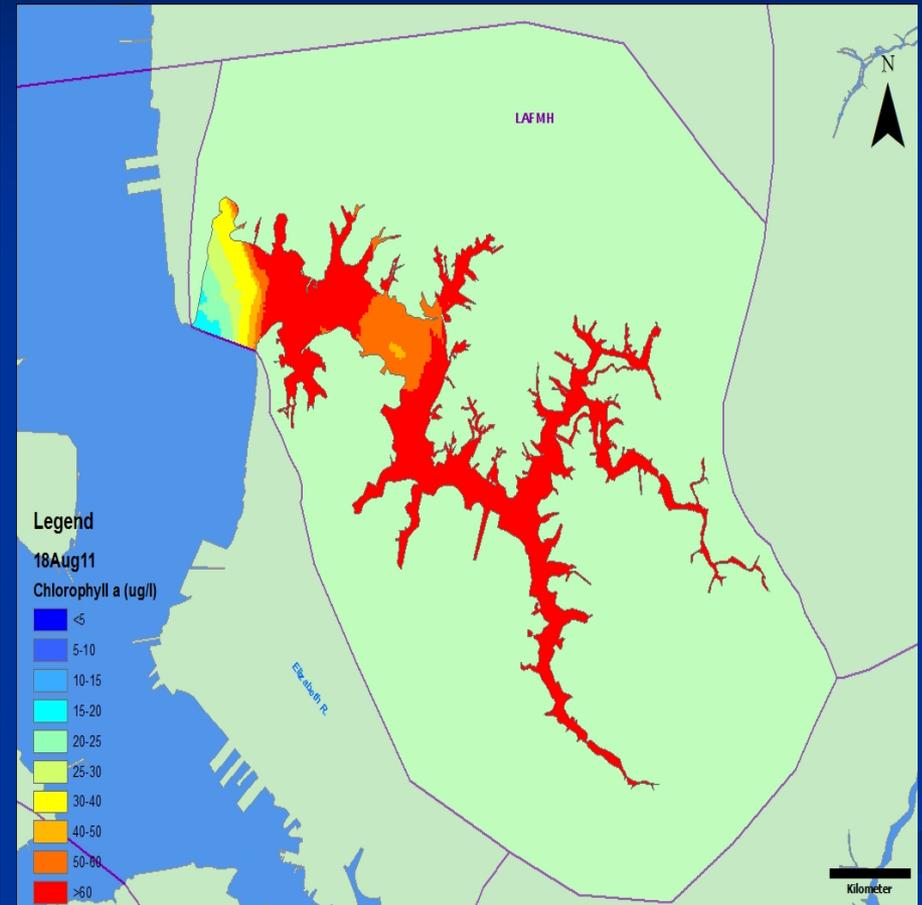
Kilometer



# We still have a ways to go – bacteria & nutrients!!



June - Harmful bloom begins in three areas of the river shown above.



August - Harmful bloom covers over 80% of the river.



# Lessons Learned

- It takes effective coordination of numerous partners to show water quality improvements in an urban river.
- Government cannot do it alone, we need to be engaging citizens and non-traditional partners.
- Collective impact is key
- Hard work and focus
- We need to be using all the tools in our tool box not just a few.

# Questions?

