

Integration of Remediation, Restoration and Revitalization Objectives: A Case Study on the Mercury-Impacted South River, Virginia

Cameron Dixon (AECOM, Boston, MA, USA) | Ryan Davis (Anchor QEA, Seattle, WA, USA) | Nancy Grosso and Mike Liberati (E.I. du Pont de Nemours and Company, Wilmington, DE, USA) | Dwayne Jones (City of Waynesboro, Waynesboro, VA, USA)

Background

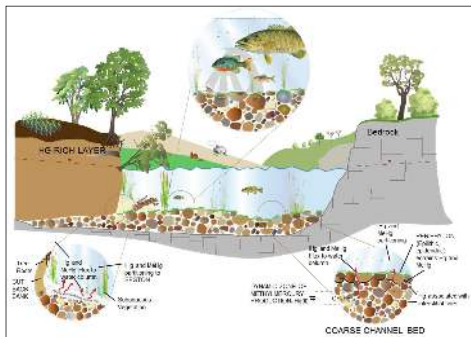


Figure 1. Conceptual Site Model for Hg loading to the South River

Historical mercury (Hg) releases from textile manufacturing facility on the South River, Virginia:

- Increased Hg concentrations in biotic and abiotic media have not declined in 30 years.
- Erosion of legacy Hg-impacted bank soils is highest loading source (see **Figure 1**).
- **City of Waynesboro** has a city-wide greenway plan along the South River, parts of which are co-located with bank areas targeted for remediation.

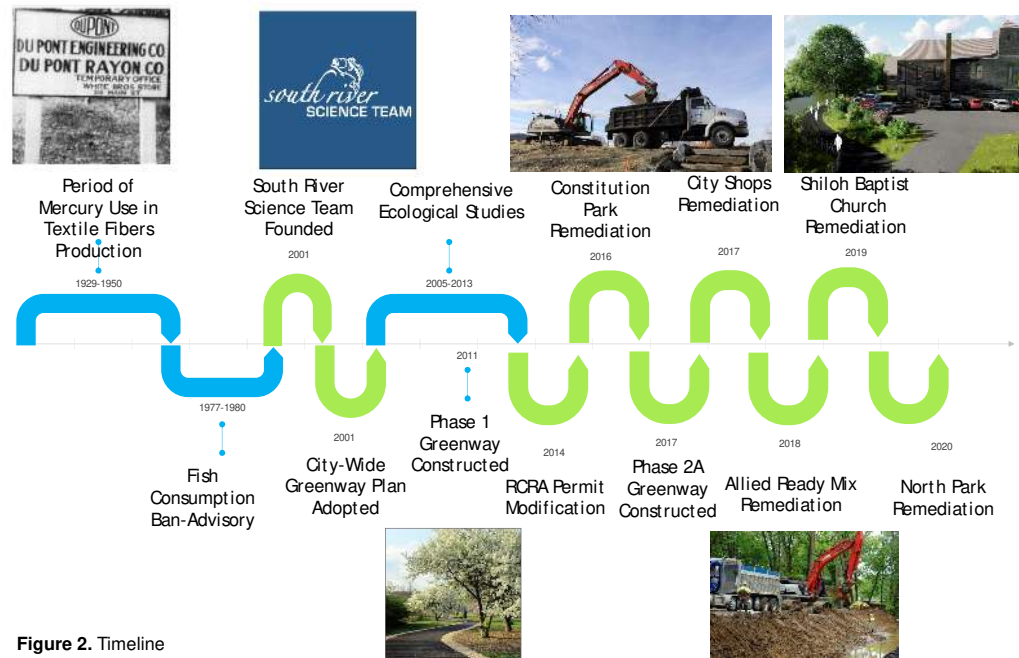


Figure 2. Timeline

Integration of Remediation, Restoration, and Revitalization

Greenway Phase 3 / Allied Ready Mix Remediation: Construction Access Road as Greenway Subgrade

Greenway Phase 2B / North Park Remediation: Construction Access Road as Greenway Subgrade and Boat Launch

Greenway Phase 2B / Shiloh Baptist Church Remediation: Soil cap and construction access roads as Greenway Subgrade

Greenway Phase 1 / Constitution Park Remediation: Viewing Platform and River Access

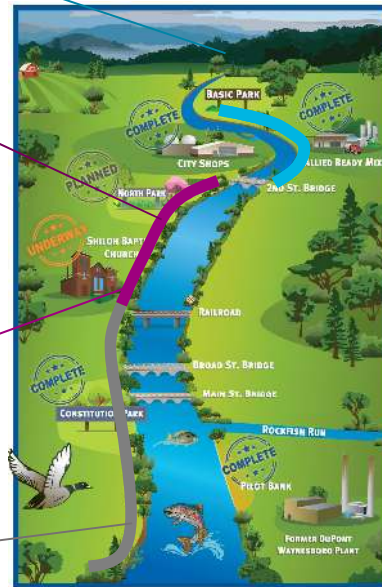


Figure 3. Phase 1- Interim Measures Locations



Figure 4. Post-Remediation Constitution Park Recreational Use

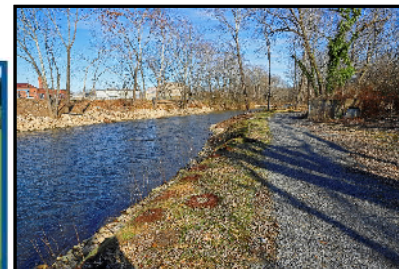


Figure 5. Allied Ready Mix (top), Shiloh Baptist Church (middle), Constitution Park (bottom)

- Remedial designs incorporated urban revitalization vision at minimal additional cost
- Inclusion of co-benefits increases community acceptance and shortens time for approvals
- Access agreements for remediation facilitated through goodwill, collaboration and transparency

Greenway As Soil Cap

Remediation Behind Historic Church

- Phase 1 workplan called for excavation of bank behind church
- Due to space limitations – Greenway plan used surface streets in-front of church rather than following riverbank
- Risky excavation changed to capping, which includes constructing a mechanically stabilized earth embankment for the greenway
- Capping as remedy had much lower risk and lower cost than excavation would
- Greenway remains separated from street traffic minimizing disruption to Church

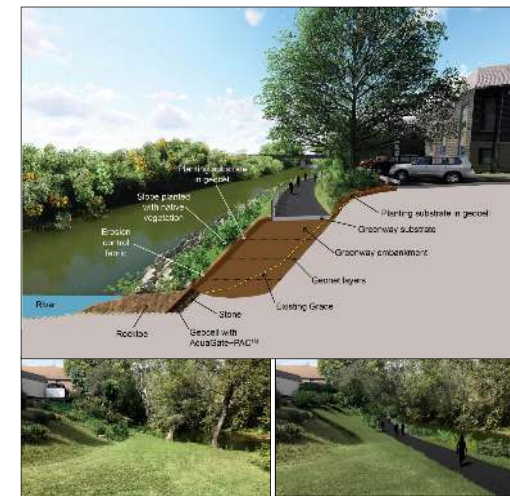


Figure 6. Integration of the South River Greenway Trail at Shiloh Baptist Church Bank Management Area (top), with before (left) and after renderings (right)

Conclusions

- Allow Sufficient Time to:
 - Interface with Stakeholders
 - Complete Design Reviews
 - Obtain easement/permits
- Identify project co-benefits early in remedial design process
- Initial success builds confidence in future phases of work
- Integrating remediation with local revitalization vision results in success.



Figure 7. Six-months after completion at Constitution Park

The work described in this poster has been performed in conjunction with the South River Science Team (SRST), a multi-stakeholder group including representatives from local, state and federal governments, academia, environmental groups and DuPont. The SRST is a collaborative team created to provide input into the watershed-level, risk-based assessment framework to address mercury in the system. For more information visit the South River Science Team website! →

