Lower Passaic River Study Area

Overview of Proposals for the Upper 9 Miles of the Lower Passaic River

Update for Community Advisory Group
February 8, 2018

Two Items for Discussion:

1. **Does an interim approach make sense for the upper nine miles of the Passaic River?**
2. **Specific proposal from the Cooperating Parties Group (CPG)**

Does an Interim Action Approach Make Sense?

An interim action:

- could get source area contamination removed faster
- should expedite risk reduction by minimizing ongoing threats to people's health and the environment
- should be consistent with final remedy
- builds in monitoring after each phase to determine effectiveness
- allows for additional cleanup as necessary

Basis for Evaluating Interim Actions

EPA's 2005 Sediment Guidance:

- Take other early or interim actions, followed by monitoring before deciding on a final remedy
- Use adaptive management at complex sediment sites…test hypotheses, reevaluate assumptions as new information is gathered
- Phase in remedy selection where fate and transport is not well understood or there are significant implementation issues
- Consider separating management of source area from other areas

Remember that from building the CSM, we learned:

- Contaminated sediments may serve as a source to the water column, and therefore other areas of the river, when concentrations in the sediments are higher than the concentrations found on particles in the water column

- Contaminated sediments can be a source through resuspension from tidal influences or high flow events such as storms

- *The upper nine miles can begin to recover once we get source material addressed*

What is the CPG's Interim Action Approach?

- Remove source material in the upper nine miles quickly
- Based on the conceptual site model of how the contamination in the river moves
- Coordinate remedial action activities with the lower 8.3 miles for economies of scale
- Post action monitoring would begin earlier

Two Key Concepts to Understand:

- **Remedial Action Level (RAL):** A chemical-specific sediment concentration that is used to delineate areas where active remedial measures (e.g., dredging or capping) will be undertaken under a given remedial alternative.

- **Surface Weighted Average Concentration (SWAC):** The measure of the average surface concentration of the top six inches of a given area of sediment.

Concepts Relevant to CPG's Potential Interim Action

Action:

- Actively remediate sediments that inhibit recovery (high concentration source areas)

Intended Response:

- Allow areas with significant net deposition (good recovery potential) to respond to the substantial reduction in concentrations achieved by remediating source areas
- Allow areas subject to cyclical erosion and deposition to respond to the substantial reduction although more slowly

Overview of CPG's Interim Action Approach

ROD 1 – For the upper nine miles, address sediment posing the greatest risks or preventing the rest of the river from recovering

- 2,3,7,8-TCDD Sediment SWAC reduced by ~90% following interim action
- Total PCBs reduced below background

Monitor fish, crab, water and sediment to confirm contamination levels in the river are going down

ROD 2 - Go back into the river and do more if needed or set final cleanup levels if risks calculated for new conditions are within acceptable levels

Overview of CPG's Interim Action Approach

- Phased approach to address the upper nine miles
- Proposed Remedial Action Level ("RAL") of 300 ppt (ng/kg) 2,3,7,8-TCDD and 1 ppm (mg/kg) of Total PCBs
- Dredge and cap approximately 80 acres from RM 8.3 to RM 14.7
- Remedial footprint will be reassessed after a Pre-Design Investigation
- Remedial Design will include refined modeling projections for sediment and tissue recovery
- Performance Monitoring will be used to determine if additional actions are needed to achieve acceptable risk levels as part of a final Record of Decision (ROD)

CPG proposes that the Interim Action will:

- Immediately reduce contaminant levels at source areas, resulting in a reduction in concentration by an order of magnitude
- Reduce human health and ecological risks quickly and significantly
- Accelerate recovery of the Lower Passaic River
- Include robust post remediation monitoring to provide data needed to confirm recovery
- Include additional remediation if more needs to be done.

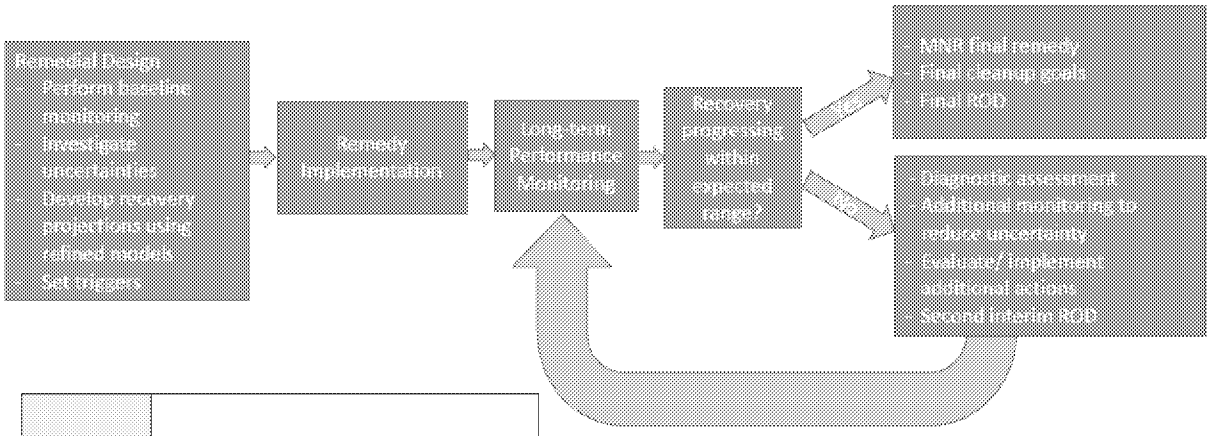
EPA, CSTAG and the CAG will spend the coming months evaluating these claims.

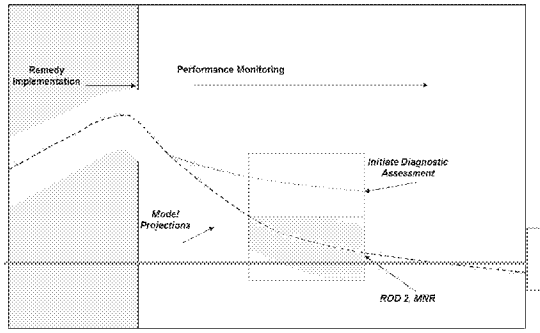
Technical Topics - CPG's Approach

EPA is carefully reviewing the CPG proposal to more clearly understand their proposed approach and how it may be used as one alternative in a Feasibility Study. Topics under discussion include:

- Remedial Action Levels (RALs) to define the sediments that need to be dredged/capped
  - Based on sediments not recovering or inhibiting recovery of the upper 9 miles of the Lower Passaic River
  - Indicated by sediment concentrations greater than concentrations in the water column and recently deposited sediments.
- SWACs to be used in future risk reduction calculations
- Ecological risk calculations based on species/location-specific exposures

Upper 9 Mile Iterative Management Process





Human Health Risk = 10^{-4}

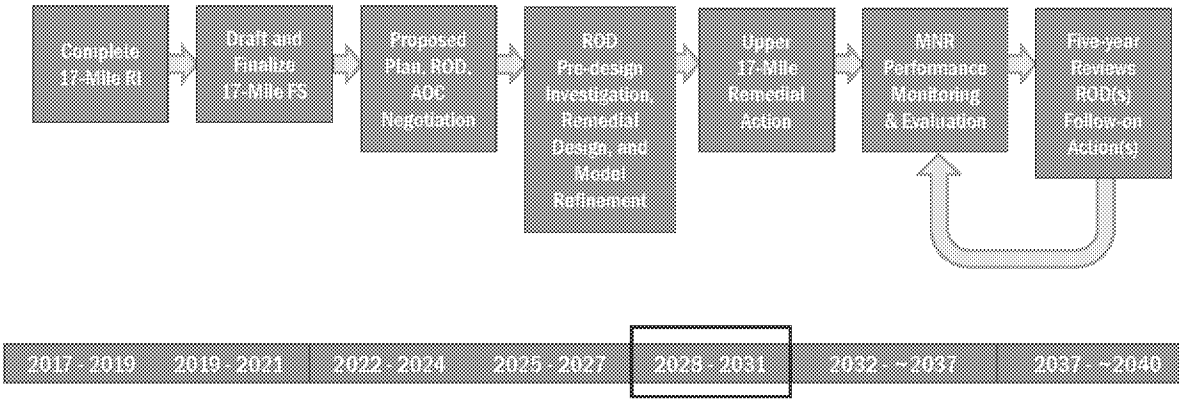
CPG's Iterative Management Approach

- Criteria and triggers for diagnostic assessment and/or additional action will be based on comparison of performance monitoring data with projected recovery rates
- If monitoring identifies recoveries inconsistent with model projections:
  - Lack of recovery – additional remedial actions will be evaluated/selected
  - Slow recovery – revisit CSM and model projections, re-evaluate risk reduction timeframes, continue monitoring or consider additional actions

Diagnostic measures could include:

- Increased monitoring frequency to confirm conditions of concern
- Focused sampling to isolate area(s) of concern
- Bathymetric evaluation
- Model recalibration
- CSM refinement
- Source identification

Current Draft 17-Mile LPR RI/FS Schedule *



*RI and FS Tasks Based Upon CPG's January 18, 2017 Gantt Chart.
Proposed Plan, ROD, AOC Negotiation Task Timeframe Estimated by EPA
Pre-design Investigation and Subsequent Task Timeframes assumed to be same as for the Upper 9-mile Plan

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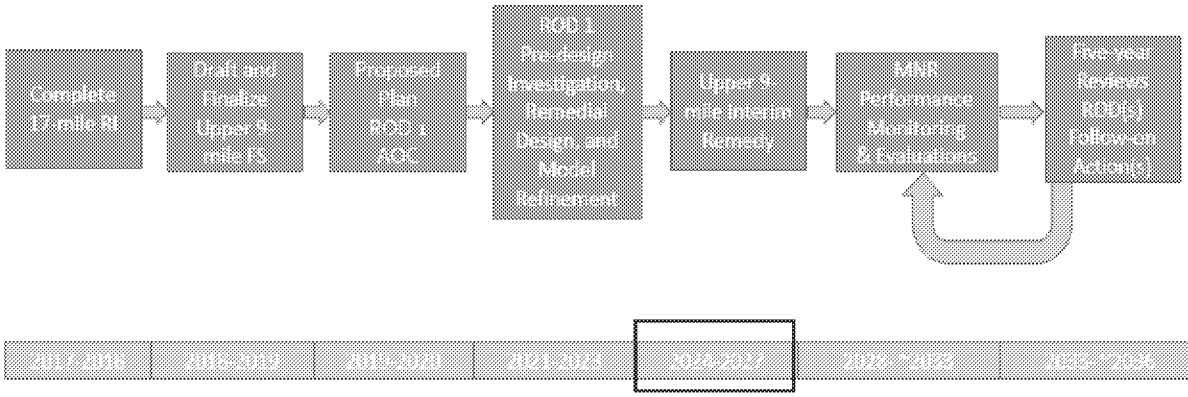
Upper 9-mile Plan – An Adaptive & Iterative Approach



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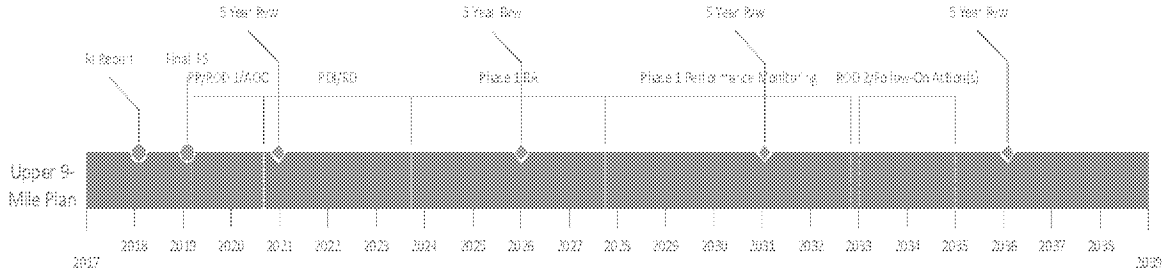
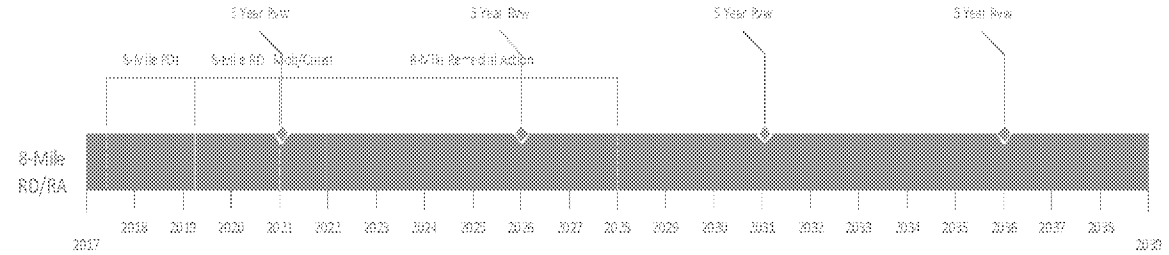
CPG's Proposed Interim Action Schedule





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Topics for Continued Discussion

- A single Remedial Action Level (RAL) vs. spatially varying RALs
- Impact of alternate RALs on SWACs and risk
- Risk estimates need to be revised using species/location-specific exposure concentrations
- Performance monitoring plan must be robust and agreed upon before the start of remedy implementation

Next Steps

EPA's Contaminated Sediment Technical Advisory Group (CSTAG) meeting

- **CAG and other stakeholders invited to present on morning of March 1st**

LPRSA has been identified as a site for the CSTAG review process.

The purpose of CSTAG is:

- To help appropriately investigate and manage their sites in accordance with the 2005 Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, and other relevant EPA guidance and policies appropriate for sediment sites.
- To encourage the use of state-of-the-science tools and methods to complete an adequate and timely characterization of the nature and extent of contamination and to help ensure the selection of a cost-effective remedy that will control sources and achieve long-term risk reduction while minimizing short-term impacts.
- To encourage national consistency in the characterization and management of sediment sites by providing a forum for exchange of technical information among the CSTAG members.

Next Steps Continued:

- After the CSTAG meeting, EPA will be available to continue to answer questions and will participate in further discussion at the March 8 CAG meeting.
- CSTAG reviews take several months to complete. Once we get feedback, we will share with the CAG.
- CPG proposal may be further assessed as part of a full Feasibility Study.
- EPA suggests enhanced outreach to communities along the upper nine miles of the river.

Overview of Potential Monitoring in the Upper 9 Miles

		Bathymetry	Water Column	Biota	Sediment (Recovery Indicator Areas)
Baseline		√	√	√	√**
Remedy Implementation			√	√	
Year 0 Post Construction		√	√	√	√
Long-term	Primary*	√	√	√	
	Diagnostic		√	√	√

*Primary components are those identified as triggering metrics
**Sediment sampling will be performed in PDI

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