



Overview of Early Interim Actions

Newtown Creek Community
Action Group Meeting
October 30, 2019

Background on Early Actions

- EPA 1999 Record of Decision Guidance¹ discusses early, interim and removal actions as follows:
 - During scoping, or at other points in the RI/FS, the lead agency may determine that an interim remedial action is appropriate.
 - A removal action also may be appropriate to address immediate risks at an NPL site.
 - Interim actions either are implemented for separate operable units or may be a component of a final ROD for other portions of the site.
 - In either case, an interim action must be followed by a final ROD
- The guidance goes on to say...
 - Interim remedial actions should not be confused with “early remedial actions.” “Early” in this case is simply a description of when the action is taken in the Superfund process. Thus, an early action is one that is taken before the RI/FS for the site or operable unit has been completed. Hence, early actions may be either interim or final.

¹ https://www.epa.gov/sites/production/files/2015-02/documents/rod_guidance.pdf

Background, continued....

- **Early Actions**
 - **Early interim action.** Any interim action taken before the completion of the Remedial Investigation/Feasibility Study for a site or operable unit would constitute an early action that would be re-evaluated for possible further action.
 - **Early final action.** An early action that does not require follow up actions. For example, to prevent exposure and/or the spread of contamination, drums are removed from a site along with the surrounding contaminated soil, while the remedial investigation is still ongoing.
- EPA's 2002 "11 Principles" sediment guidance¹ also discusses early and interim actions as follows:
 - EPA encourages the use of an iterative approach, especially at complex contaminated sediment sites, where an iterative approach is defined broadly to include approaches which incorporate testing of hypotheses and conclusions and which foster re-evaluation of site assumptions as new information is gathered.
 - An iterative approach may also incorporate the use of phased, early, or interim actions.

¹<https://semspub.epa.gov/work/HQ/174512.pdf>

Superfund Task Force Report

- Task Force Report released by EPA in September 2019
 - Recommends 5 Goals, including Goal 1: Expediting cleanup and remediation.
 - Strategy 2 under Goal 1 states: Promote the application of adaptive management at complex sites and expedite cleanup through use of early/interim RODs and Removal Actions.
- The report discusses Adaptive Management as follows...
 - Regions are encouraged to consider greater use of early actions, including use of removal authority or interim remedies, to address immediate risks, prevent source migration, and return portions of sites to use pending more detailed evaluations of other site areas.
 - The characterization data collected to support early action can be used to update the site conceptual site model and reduce the remedial investigation/feasibility study's (RI/FS's) duration and cost.
 - This approach will be most effective at contaminated sediment and complex groundwater sites where using removals or early actions to address sources or areas of high contamination is highly efficient.

A few examples of early, interim and removal actions...

- **Brief examples from other regions**
 - Lower Duwamish Waterway Superfund Site, Seattle, Washington
 - Portland Harbor Superfund Site, Portland Oregon
 - Tittabawassee and Kalamazoo Superfund Sites, Michigan
- **Brief example from Region 2**
 - Berry's Creek Study Area, New Jersey
- **More in-depth example from Region 2**
 - Diamond Alkali Superfund Site (aka, the Lower Passaic River), New Jersey
- **Keep in mind...**
 - Every site is unique
 - Early actions can take many forms, both administratively and technically
 - All information included on the subsequent slides was pulled from publicly available information on the internet

Lower Duwamish Waterway Superfund Site



- Location: Seattle, Washington
- Listed on NPL in 2001
- Five mile segment of the Duwamish River
 - Major industrial corridor since early 1900s
- Primary Contaminants: PCBs, arsenic, PAHs, dioxins/furans
- Site-Wide Record of Decision signed November 2014



Several early actions completed at the Site prior to remedy selection

- Norfolk Combined Sewer Overflow/Storm Drain
- Duwamish Diagonal
- Slip 4
- Terminal 117
- Boeing Plant 2
- Earle M. Jorgensen Forge



By the end of 2015, 50 percent of the PCB contamination in the river bottom was removed through these early actions

All focused on sediment hotspots

Slip 4 Non-time Critical Removal Action

Lower Duwamish Waterway Superfund Site

Goal:

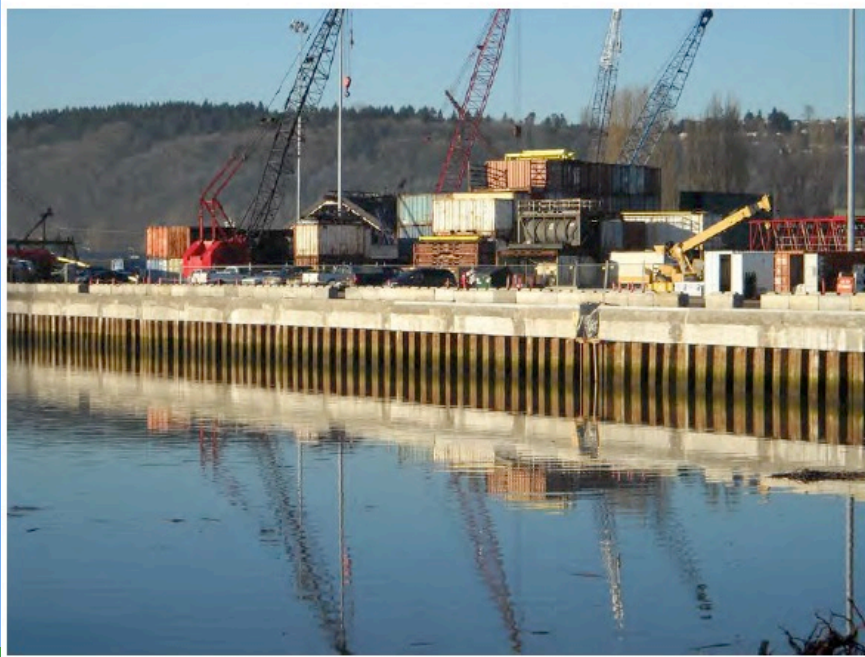
- Reduce concentrations of contaminants along the east side of the Duwamish Waterway in post-cleanup surface sediments to below standards

Description of Non-Time Critical Removal Action:

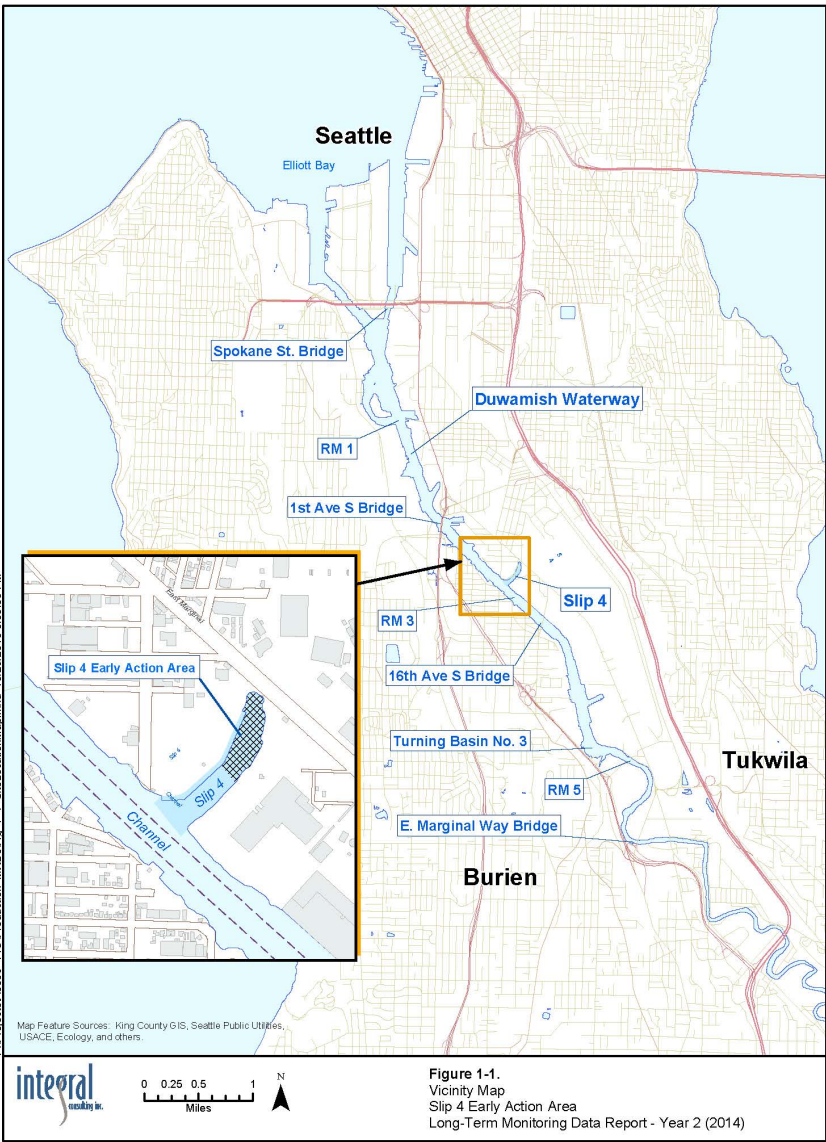
- Dredging and excavation of 10,256 cubic yards of contaminated sediments and bank soil
- Placing engineered caps of clean sand and gravel over the remaining sediments
- Placing engineered soil covers and expanding habitat in former upland areas
- Properly disposing 17,334 tons of soil, sediment and debris
- Demolition of 20,019 feet squared of concrete pier structure and recycling 3,278 tons of concrete and steel
- Work was initiated on October 3, 2011 and was completed on February 7, 2012

Major Lessons Learned:

- The Slip 4 Early Action Area Year 5 (2017) monitoring program report indicates that the sediment cap remains structurally sound
- Removal action resulted in a net gain of shallow and riparian habitat for threatened Puget Sound Chinook and Coastal/Puget Sound bull trout.



Photograph 3-19. Before and After (top: September 28, 2011; bottom: February 3, 2012)



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Portland Harbor Superfund Site

- Location: Portland, Oregon
- Listed on the National Priorities List in 2001
- Site includes in-river and upland portion of the lower Willamette River
- Primary contaminants: PCBs, PAHs, dioxins/ furans and pesticides
- Site-Wide Record of Decision signed January 2017



Several early actions taken or considered at the Portland Harbor Site prior to final remedy selection

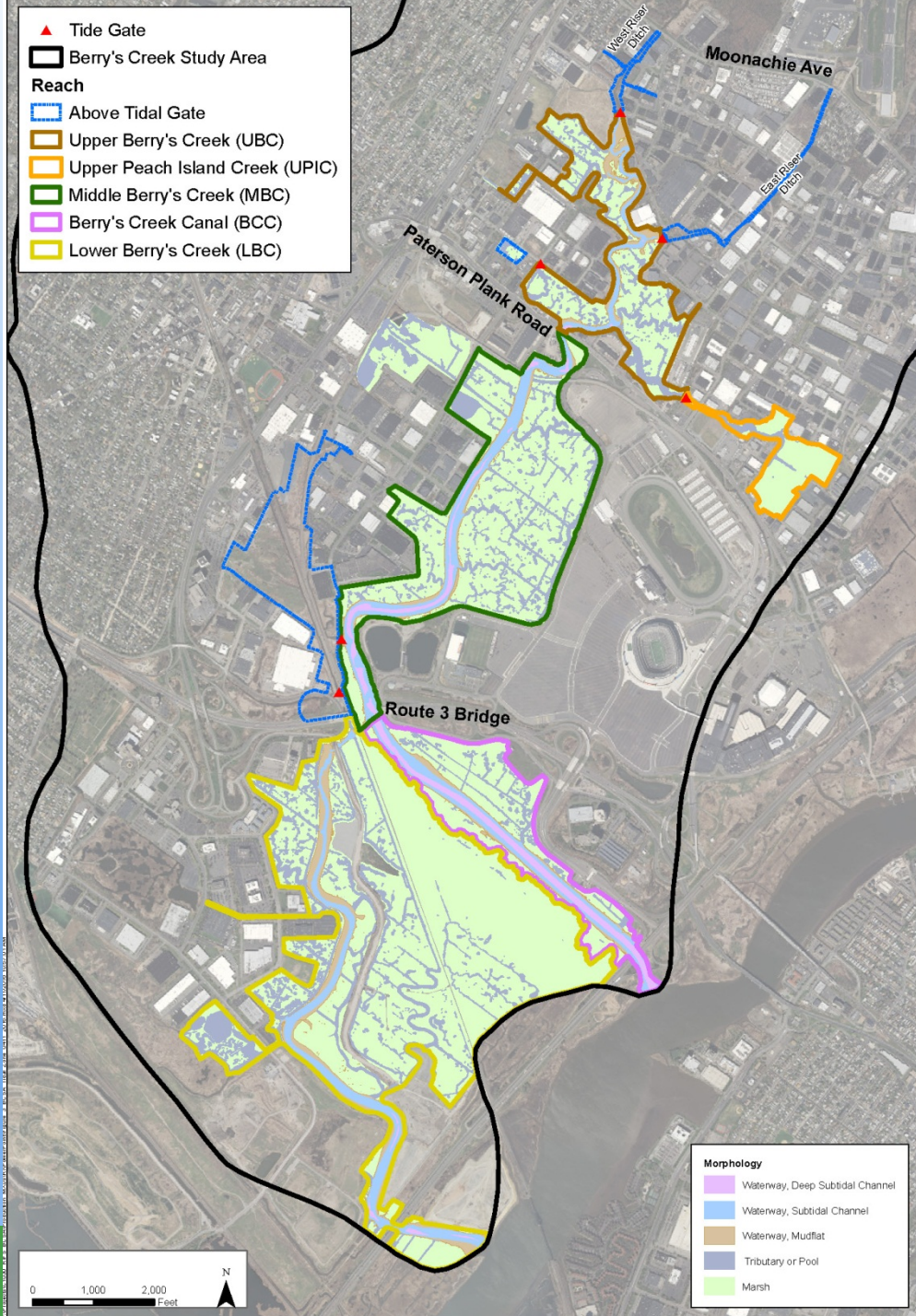
- Terminal 4 (RM 4.5 East) – Removal Action, AOC signed 2003
 - Dredging and off-site disposal of 12,819 cubic yards of highly contaminated sediment
 - Capping and stabilization of bank
 - Work completed in 2008
 - The action was effective, significant source of contamination removed from river and banks
- NW Natural (RM 6 West) – Removal Action, AOC signed 2004
 - Removal of approximately 15,300 cubic yards of surface tar and tar contaminated sediments
 - Capping of dredged area
 - Work completed in 2005
 - Lessons learned regarding residual management will be incorporated into design of final action
- Arkema (near RM 7 West) – Removal Action, AOC signed 2004
 - Conducted site characterization and some preliminary design
 - AOC terminated in 2016, no actions taken
- Gasco (RM 6.5 West) – Removal Action, AOC signed 2009
 - Focused on final remedy for Gasco site
 - Subsequently incorporated into site-wide remedy, no action taken

Kalamazoo and Tittabawassee Rivers

- **Kalamazoo**
 - Officially called the Allied Paper Inc./Portage Creek/Kalamazoo River Superfund site located in Allegan and Kalamazoo Counties, Michigan
 - 80-mile stretch of river contaminated primarily with PCBs
 - Has been divided into seven areas, each separated by dams and requiring its own cleanup
 - A phased approach to cleanup, including interim actions, is being taken to address this very long stretch of river
 - The remedial and removal programs are working in tandem
- **Tittabawassee**
 - Officially called the Tittabawassee River, Saginaw River & Bay Superfund site located in Midland, MI
 - 50-mile stretch of contaminated primarily with dioxins
 - River divided into 7 segments, and work being conducted from upstream to downstream (phased), generally through removal actions
 - Work on Segment 1 started in 2012, and at this point work is complete or nearly complete through Segment 5.
 - Lessons learned from each phase help inform the next
 - Long-term monitoring will help inform the selection of a final remedy

Berry's Creek Study Area

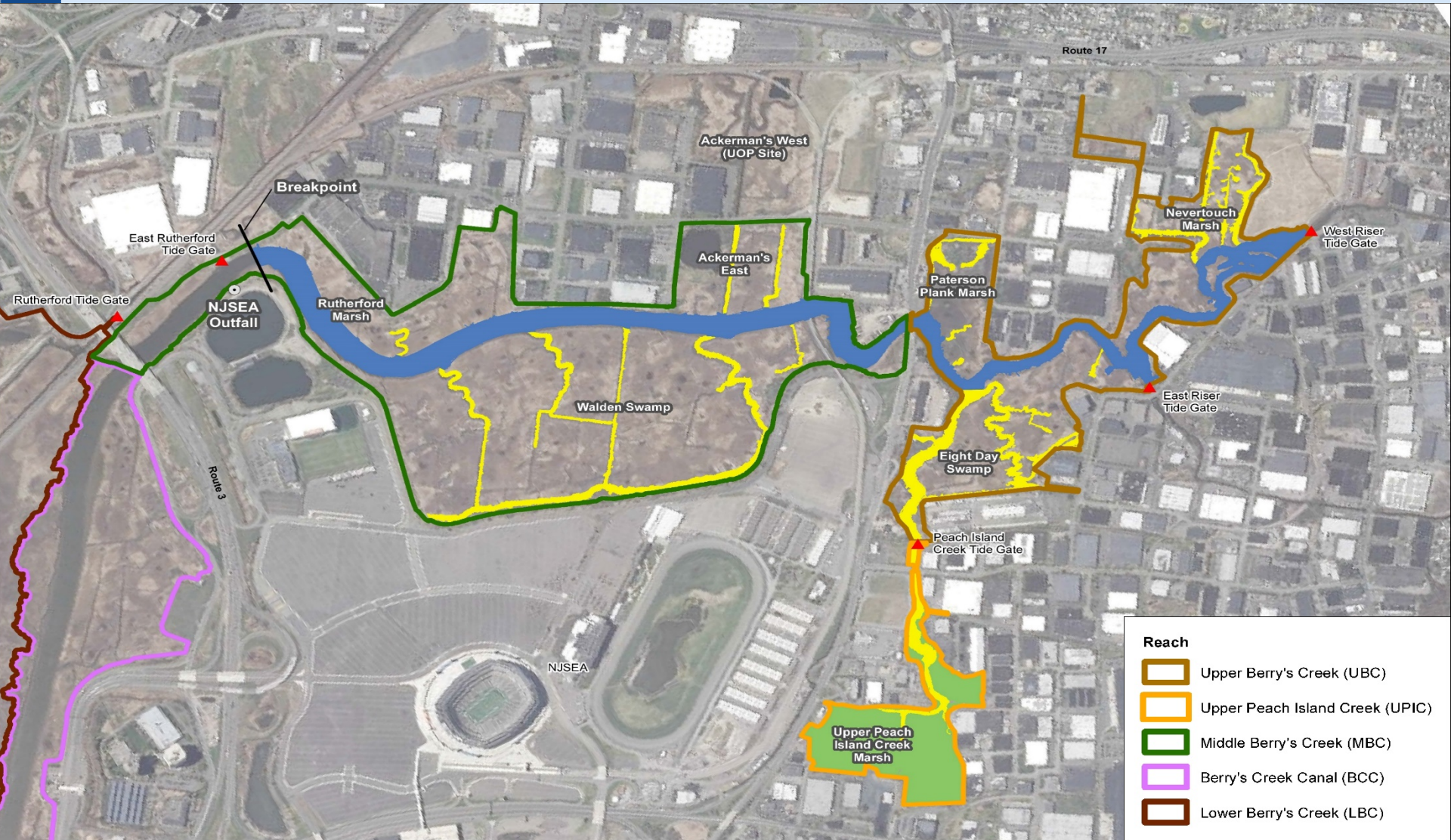
- Operable Unit 2 of Ventron/Velsicol Site in Wood-Ridge and Carlstadt, New Jersey
- 6.5-mile tributary of the Hackensack River
- Also impacted by two other Superfund sites
- Primary contaminants are mercury and PCBs
- Record of Decision for an interim source-control remedy for OU2 signed September 2018



Berry's Creek Interim Action

- The interim source control action was selected as part of an adaptive, or phased, approach.
- The remedy includes:
 - Bank-to-bank removal of 2 feet of soft sediment from the upper and middle Berry's Creek waterways, with backfill and capping. This is expected to remove approximately 363,000 cubic yards of material
 - Removal of marsh sediments to a depth of 1 to 2 feet from the Upper Peach Island Creek marsh, with backfill to reestablish marsh habitat.
 - Dewatering and off-site disposal of dredged sediment
 - Long-term monitoring and institutional controls
- The goal of the action is to control the release of contamination from the sediment, and the ROD states that one or more future decision documents will be needed to select a final remedy.
- Not yet implemented....remedial design underway.

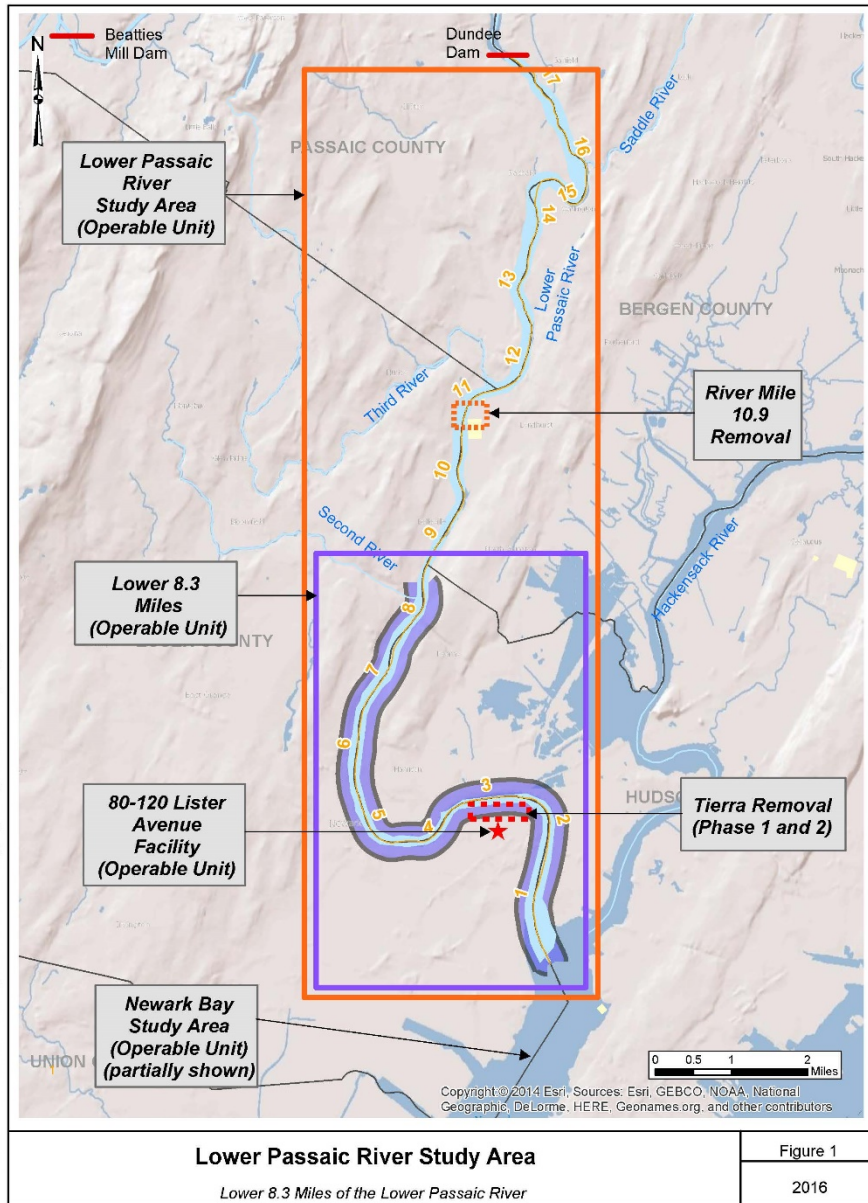
Berry's Creek Interim Remedy Footprint



Diamond Alkali Co. Superfund Site

Site listed on the National Priorities List in 1984

- 80-120 Lister Avenue (Operable Unit 1)
- Lower 8.3 miles of the Lower Passaic River (Operable Unit 2)
- Newark Bay Study Area (Operable Unit 3)
- 17-Mile Lower Passaic River Study Area (Operable Unit 4)



Several actions already taken or underway....

- 1987 interim remedy for upland area, completed 2001
- 2008 non-time critical removal action adjacent to former facility, completed 2012
- 2012 time-critical removal action at RM 10.9, substantially completed 2014 (described further on next slide)
- 2016 Record of Decision for the lower-8.3 miles of the river

River Mile 10.9 Removal Action

Diamond Alkali Superfund Site

Primary Goal

- Reduce exposure of receptors to, and prevent potentially significant migration of contamination from the RM 10.9 Removal Area
- Maximum concentrations of dioxins (21.6 ppb), PCBs (34 ppm), mercury (22 ppm) and Total PAHs (510 ppm)

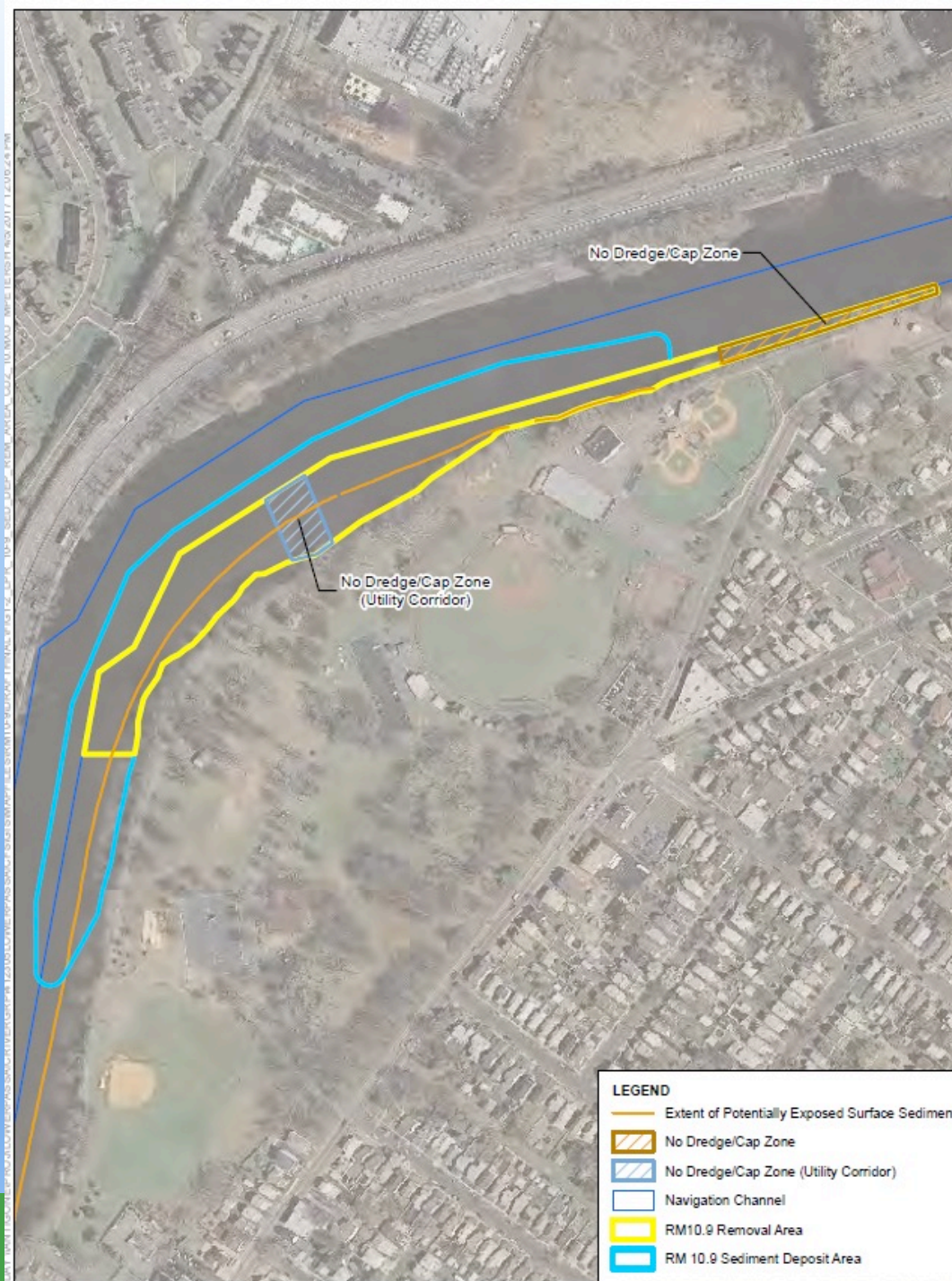
Description of Action

- Dredged top 2 feet of sediment from approximately one-half mile long area adjacent to park (estimated to be between 15,000 and 20,000 cubic yards. Final quantities for disposal were approximately 15,000 cubic yards of sediment and nearly 1 million gallons of water)
- Conducted all work from the water, and transported sediment to a dewatering facility on the Hackensack River
- Disposed of dewatered sediment at an approved offsite facility
- Placed an engineered cap over dredged area
- Performance monitoring continues to be conducted
- Order with PRPs signed in 2012, work initiated in 2013 and substantially completed in 2014

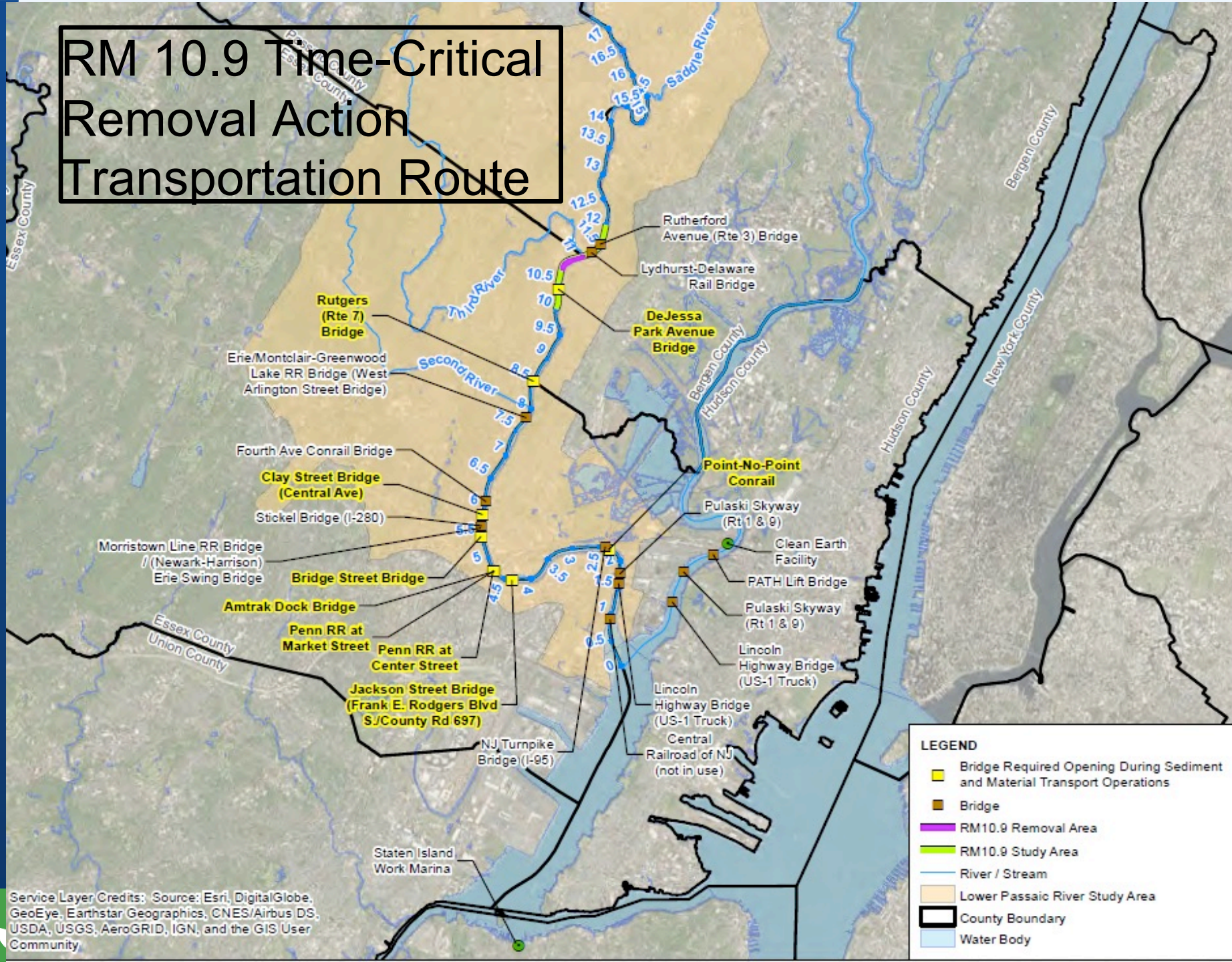
Major Lessons Learned

- Bridges
- Utilities
- Placement of cap material
- Recontamination

RM 10.9 Time-Critical Removal Area



RM 10.9 Time-Critical Removal Action Transportation Route



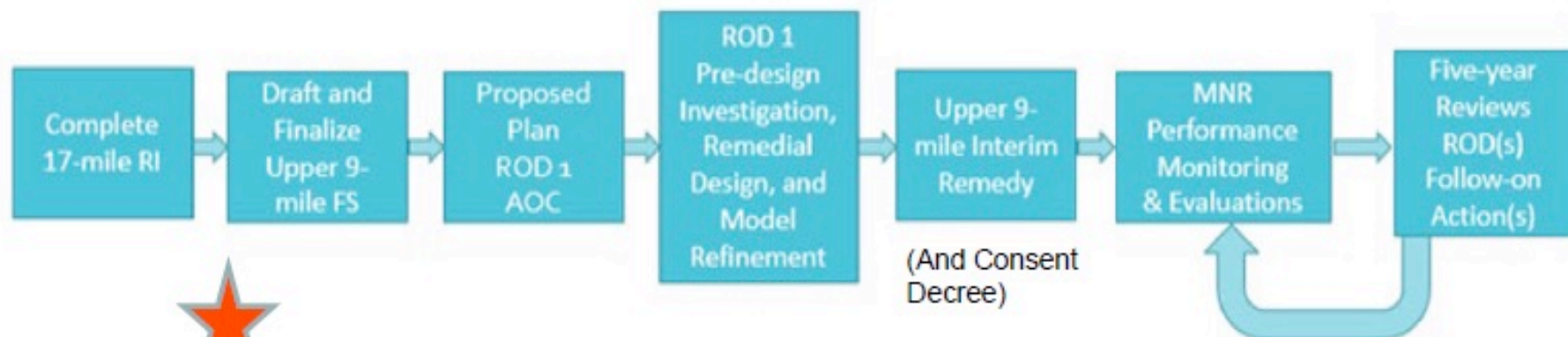
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Potential additional interim action

- Rationale for interim remedy for upper 9-miles
 - High degree of certainty that in-river sources exist and will limit system recovery
 - Lower degree of certainty on setting and estimating time to reach final risk-based sediment goals
- Interim remedy offers opportunity to
 - Remove source material and reduce risk sooner
 - Share infrastructure/resources of lower 8.3-mile remedial action
 - Complete the lower 8.3-mile remedy and upper 9-mile interim remedy closer in time
 - Perform monitoring to capture benefit of both actions
- Committed to a final Record of Decision with remedial goals

Upper 9 Mile Interim Remedy

Upper 9-mile Plan – An Adaptive & Iterative Approach



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17-mile RI is completed and have initiated proposed Interim Remedy FS

Summary and Takeaways for Potential Newtown Creek Early Action

- The use of early actions, including interim and removal actions, is supported by EPA guidance and dates back to the early days of Superfund.
- Taking early actions at sites is not unusual, particularly at large, complex sites such as Newtown Creek.
- Early, interim actions are reviewed and monitored – they are opportunities to learn.
- They can expedite the overall timeline for completing work at a site.
- Every site is unique – there is no exact parallel to the Newtown Creek site.

Questions?