

Tittabawassee River, Saginaw River & Bay Site

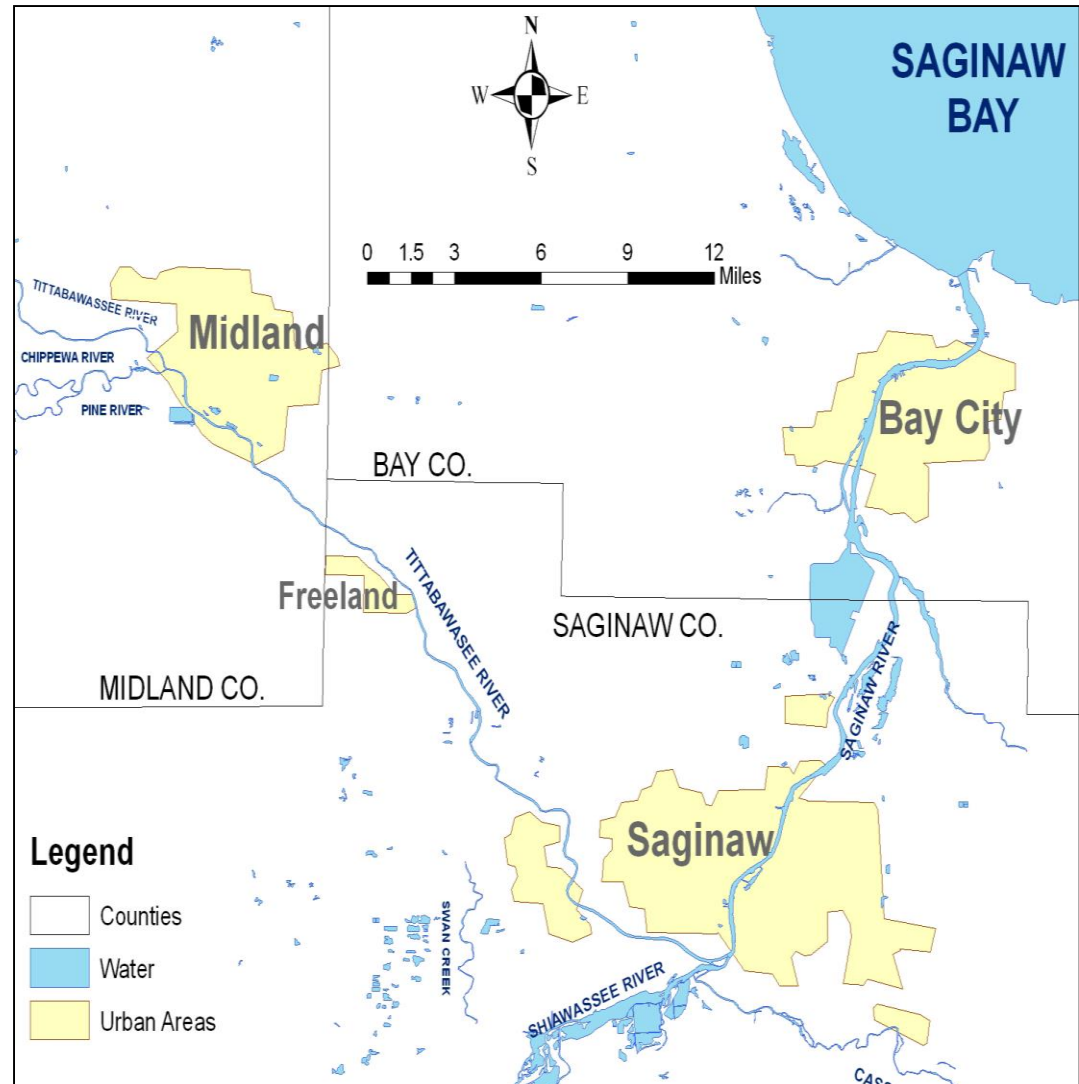
EPA Decision Processes

Mary P. Logan – U.S. EPA
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Tittabawassee River, Saginaw River & Bay Site

- Site includes:
 - ~ 24 miles of the lower Tittabawassee River
 - ~ 22 miles of the Saginaw River
 - Portions of Saginaw Bay
- Being addressed as a Superfund Alternative Approach site
 - 2010 Settlement Agreement
 - RCRA obligations addressed



Superfund Alternative Approach

- Uses the same investigation and cleanup process and standards that are used for sites listed on the NPL
- Is an alternative to listing a site on the NPL; it is not an alternative to Superfund or the Superfund process
- Can save the time and resources associated with listing a site on the NPL
- Requires a willing potentially responsible party (PRP) that enters into a legal agreement with EPA

2010 Settlement Agreement

- January 2010 – Superfund Settlement Agreement between EPA, MDEQ, and Dow
- Requires Dow to:
 - Perform investigations
 - Develop cleanup options
 - Design cleanups – which are selected by EPA, working with MDEQ

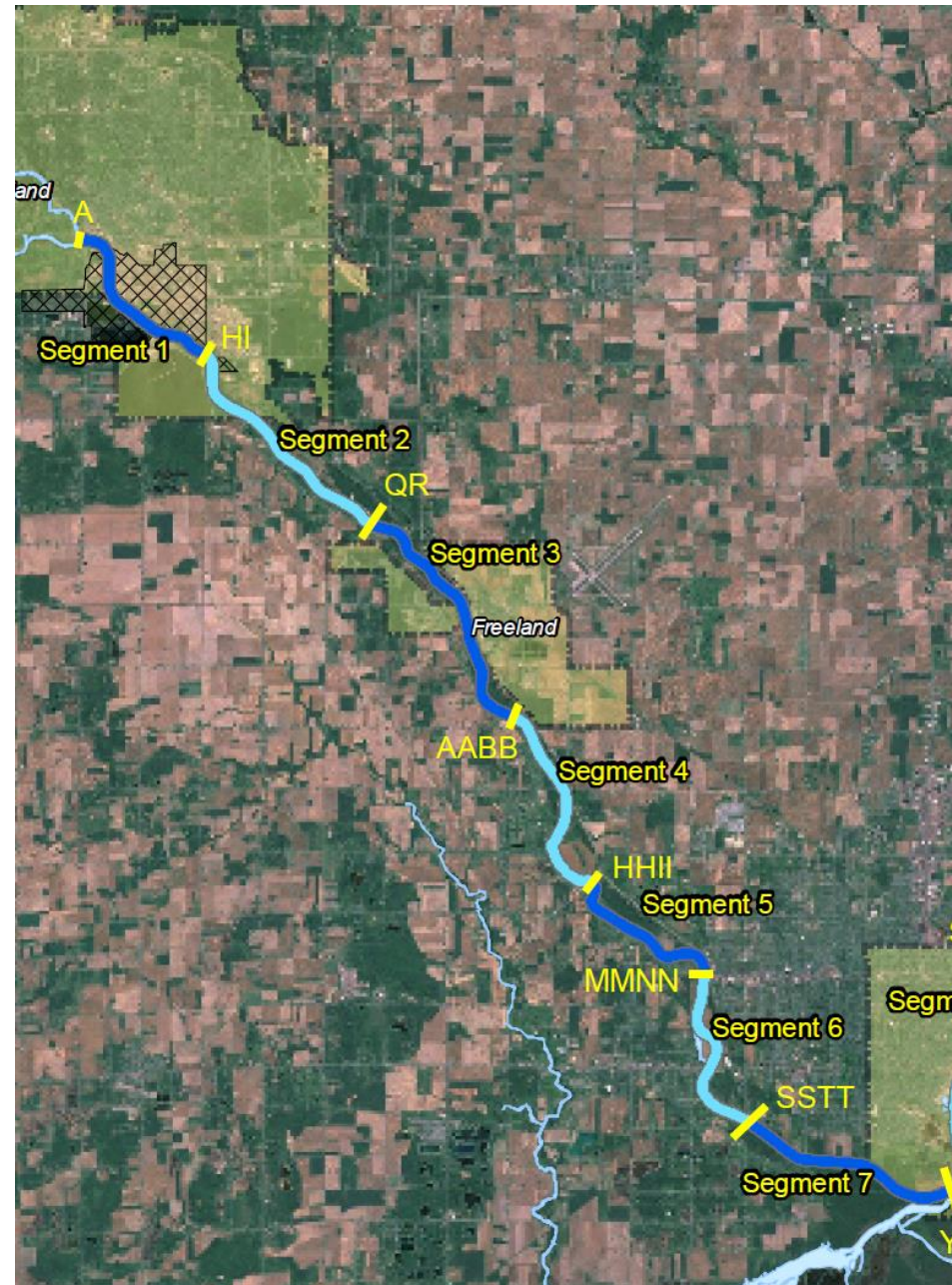
2010 Settlement Agreement (cont.)

Key provisions designed to support an approach that quickly advances risk reduction

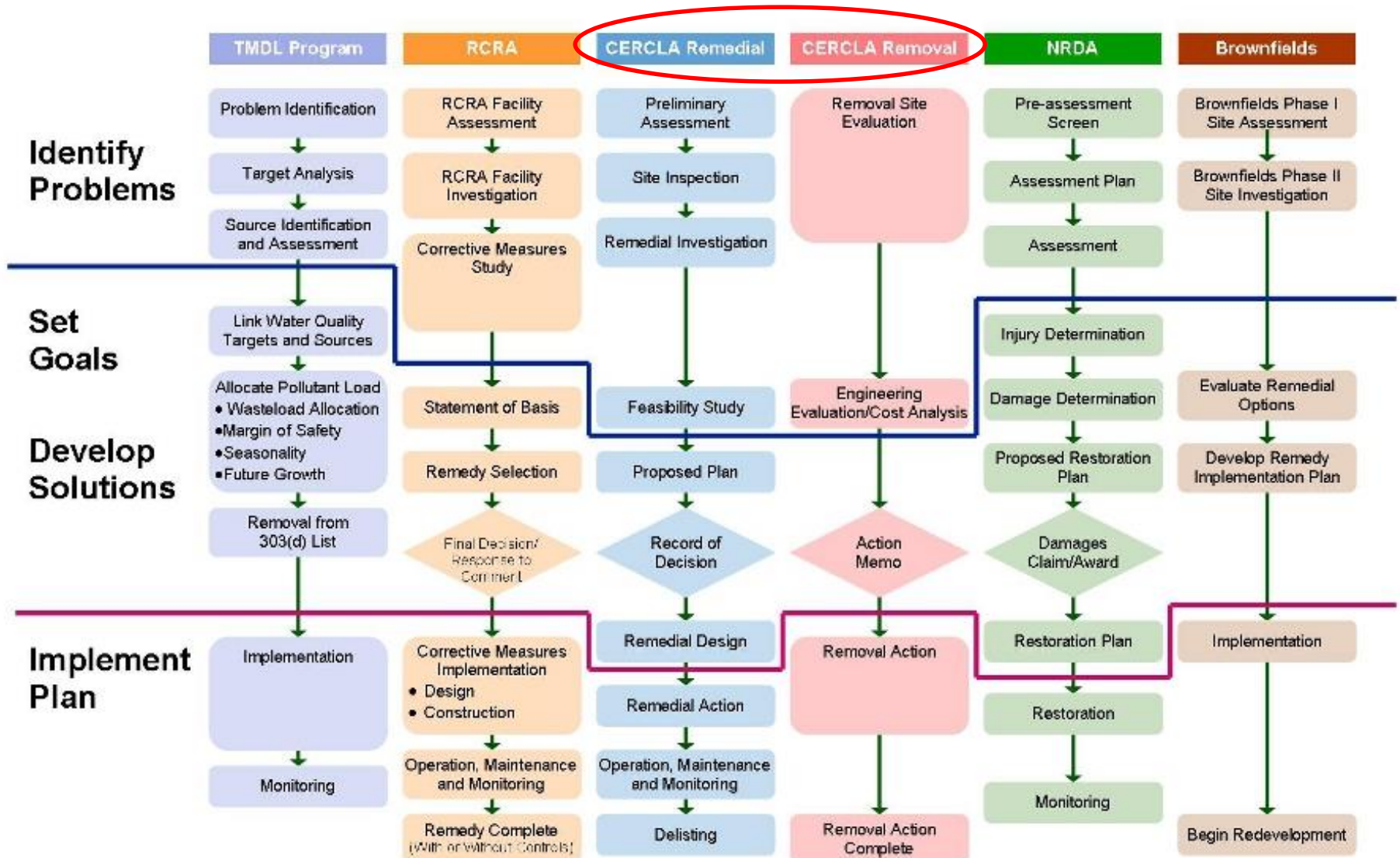
- Early actions
- Segmenting the site
- Performance-based cleanups
- Post-construction risk assessments – OU 1
- Removal or remedial authorities

Site Management

- Tittabawassee divided into seven segments
 - ~ 3 – 4 miles each
 - Work generally up- to downstream
- To date, 13 settlement agreements to implement cleanups under EPA's removal authorities



EPA Assessment and Cleanup Programs



Basis for Action

Remedial – NCP 300.430

- 300.430(d) – conduct baseline risk assessment
- 300.430(f)(2) – establishes acceptable risk levels; EPA responds to unacceptable risks

Removal – NCP 300.415

- EPA determination that there is an actual or potential threat to human health or the environment
- Identify one or more of the bases for action under §300.415(b)(2)

SMA and BMA – Bases for Action

- NCP primary bases under §300.415(b)(2)
 - High levels of hazardous substances or pollutants or contaminants in bank soil and in-channel sediment largely at or near the surface that may migrate
 - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released
 - Actual or potential exposure to the food chain from hazardous substances or pollutants or contaminants (e.g., fish)

Evaluation Criteria for Cleanups

Remedial – 9 criteria

- Overall protection
- ARAR compliance
- Reduction of TMV
- Short-term effectiveness
- Long-term effectiveness and permanence
- Implementability
- Cost
- State acceptance
- Community acceptance

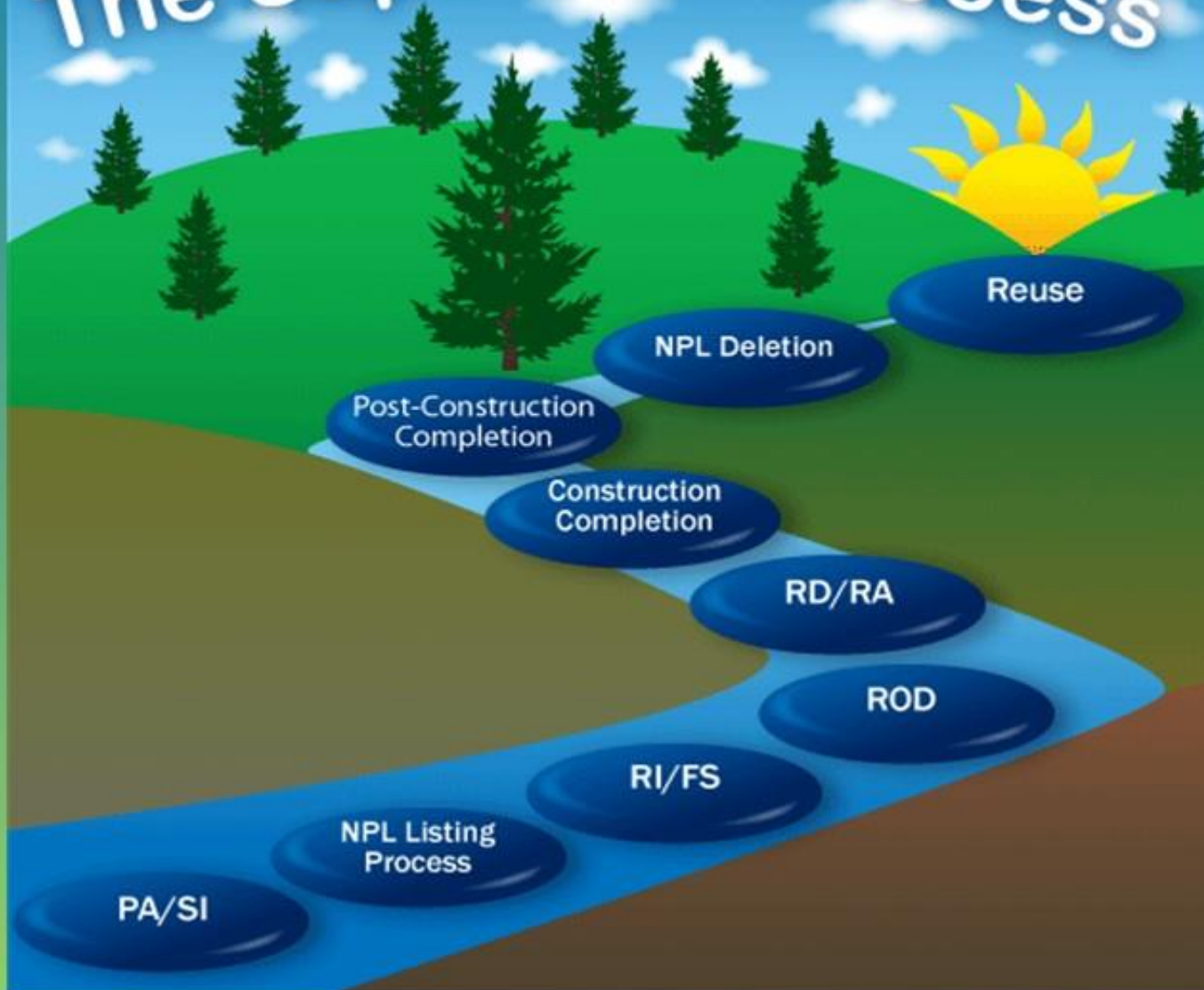
Removal – 3 criteria

- Effectiveness
- Implementability
- Cost

THE SUPERFUND PROCESS



The Superfund Process



Process – PRP NTCRA

- EPA develops EE/CA Approval Memo
 - *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*, OSWER 9360.0-32, August 1993,
 - *Use of Non-Time Critical Removal Authority in Superfund Response Actions*, OSWER 9360.0-40P, February 2000
- EE/CA
 - PRP submits EE/CA
 - Agencies review/EPA approves for public comment

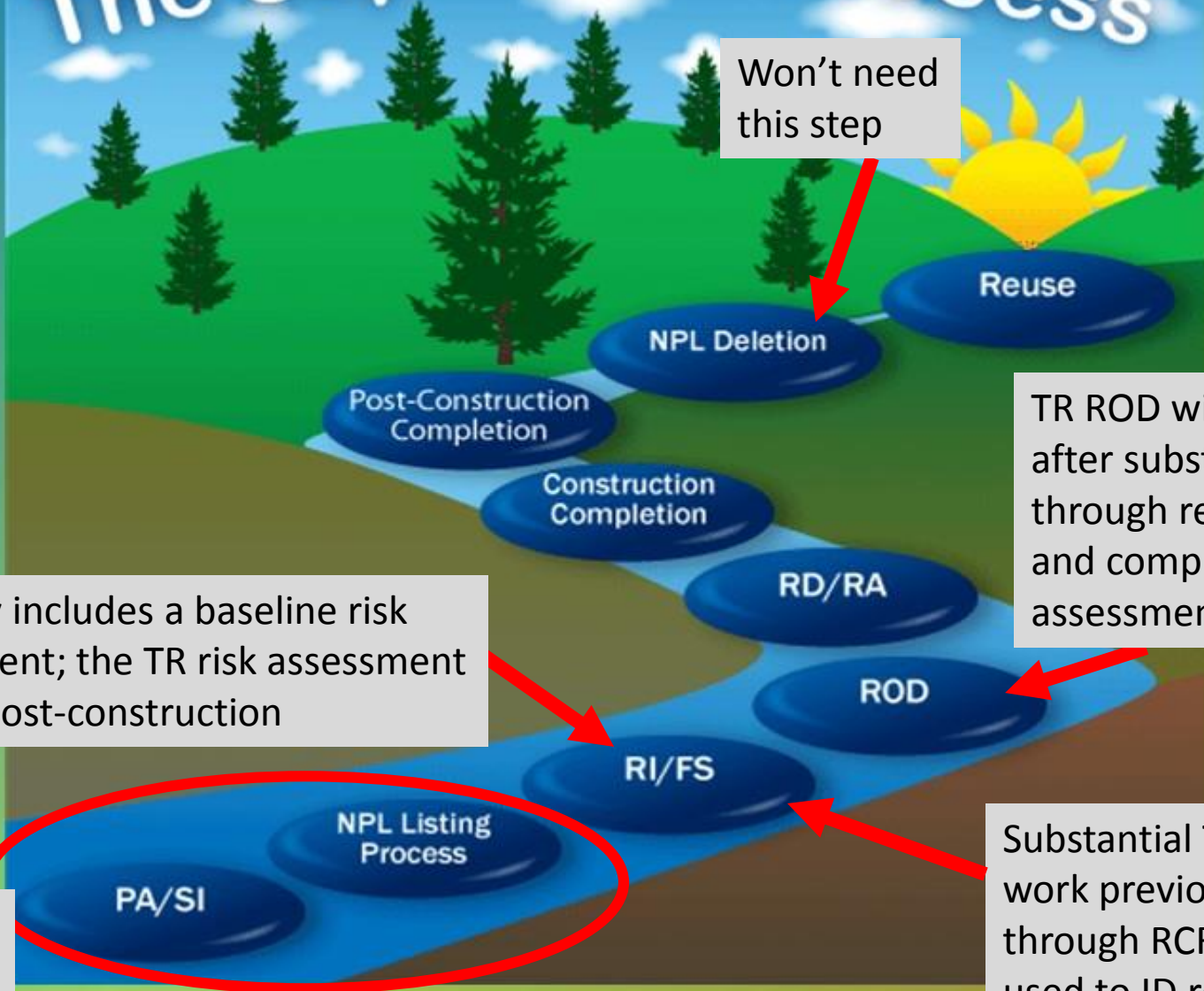
Process – PRP NTCRA (cont.)

- Public comment
 - EPA develops fact sheet, IDing preferred option(s)
 - EPA develops Admin Record, including EE/CA
 - Public comment and meeting
 - EPA evaluates comments/ any change to response actions
- Design/implementation AOC
 - EPA drafts and negotiates

Process – PRP NTCRA (cont.)

- Action Memo – EPA drafts concurrent with AOC
 - § 300.415(d) ... to the extent practicable, contribute to the efficient performance of any anticipated long-term remedial action
- Design/implementation
- Post-removal site control

The Superfund Process



Won't need this step

TR ROD will be issued after substantial cleanup through removal actions and completion of the risk assessment

Typically includes a baseline risk assessment; the TR risk assessment will be post-construction

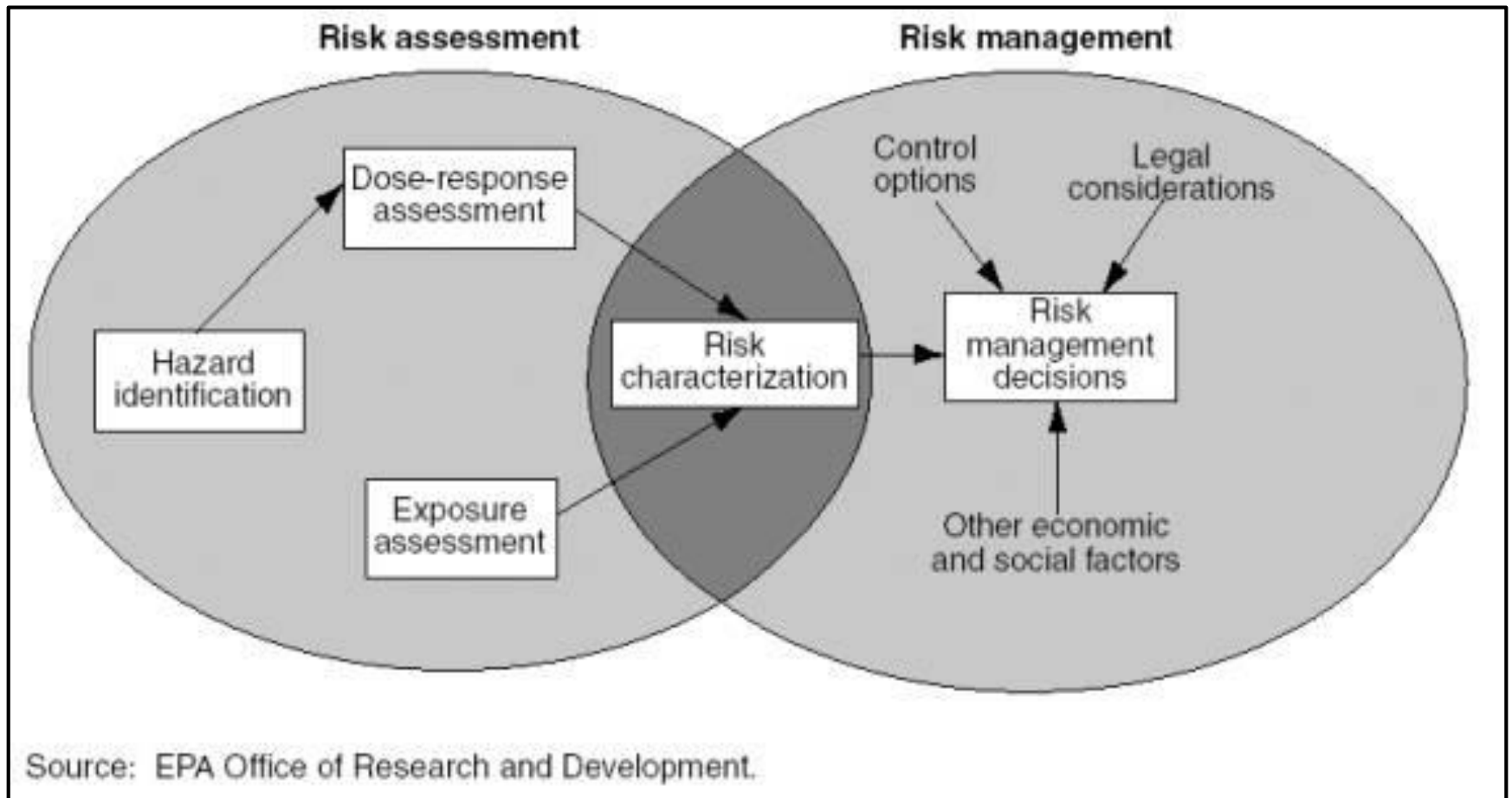
Substantial TR investigation work previously completed through RCRA License – used to ID removal actions

Superfund Alternative Approach

Potential Environmental Risk

In general terms, potential risk depends on the following factors:

- How much of a chemical is present in an environmental medium (e.g., soil, sediment, fish);
- How toxic is the chemical; and
- How much contact (exposure) a person or ecological receptor has with the contaminated environmental medium.



Risk Assessment and Risk Management

QUESTIONS?