

Tittabawassee River, Saginaw
River & Bay Site

TITTABAWASSEE RIVER FLOODPLAIN SOILS

DISCUSSION OF CLEANUP OPTIONS & TRADEOFFS

Diane Russell – U.S. EPA

CAG Meeting

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Discussion Outline

- Overview
- Goals
- Format
- Cleanup options and tradeoffs
 - Interactive exercises
- Discussion wrap-up

Discussion Overview

- Why are meetings needed?
 - Before EPA starts developing the Tittabawassee River floodplain cleanup plan, we want to meet with people who may be affected by our cleanup decisions so we can understand what is important to them.
 - The information we get will help shape EPA's cleanup proposal (expected 2014).
- Who is invited to meetings to provide input?
 - Tittabawassee River floodplain property owners.
 - Community groups, organizations and other community members impacted/interested in EPA cleanup decisions.
- When and Where are these meetings taking place?
 - Throughout the summer at various locations near the Tittabawassee River community.

Discussion Goals

- The information we get will help shape EPA's cleanup proposal. Specifically, we want to:
 - Understand community values about the current state of the floodplain & desires for future conditions and uses.
 - Obtain feedback on the possible tradeoffs that come with the cleanup options.
 - Identify what other information may be needed by the community.

Discussion Format

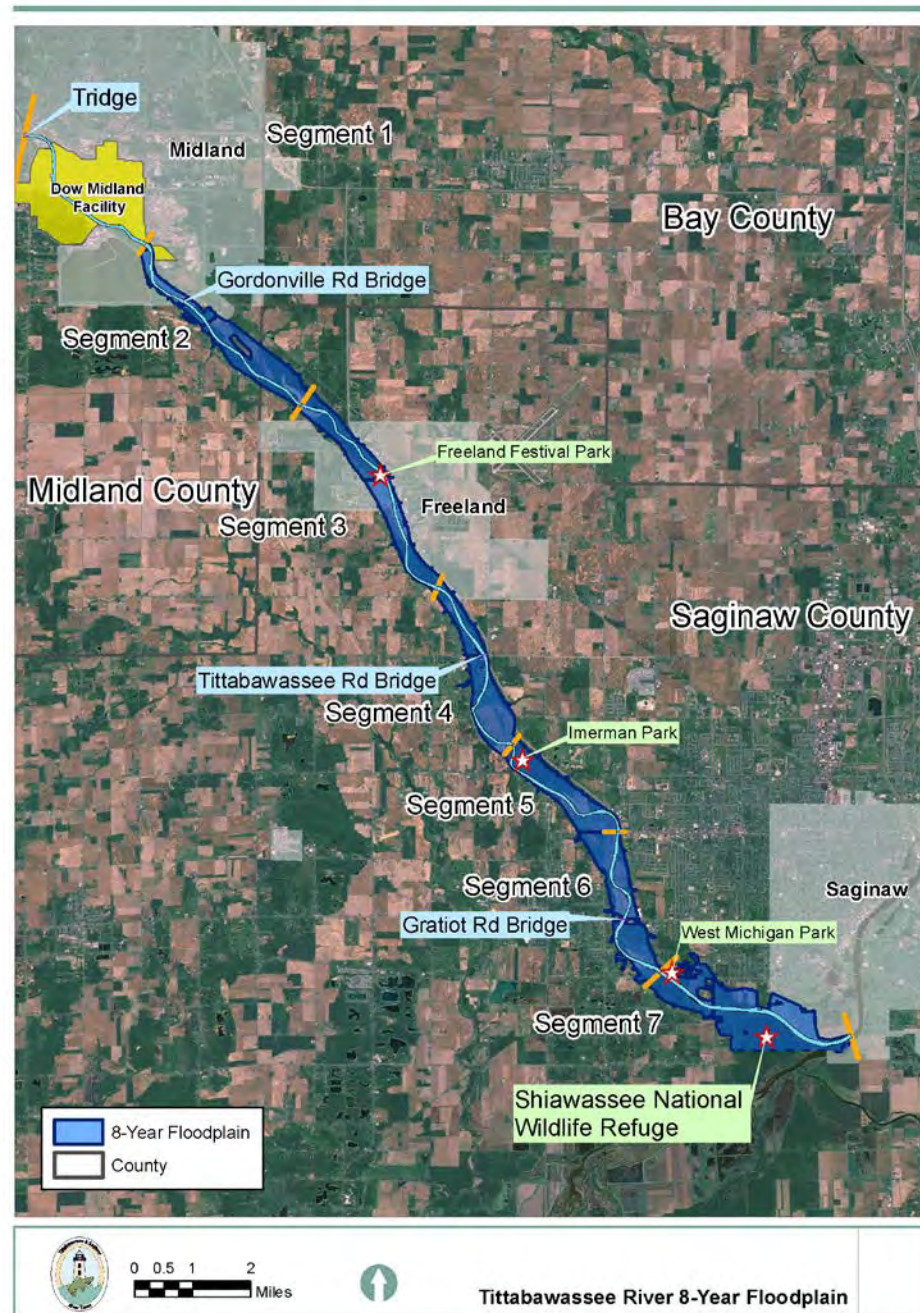
- We've structured this discussion into three sections.
 - Discussion of current environmental and land use conditions in the Tittabawassee River floodplain
 - INTERACTIVE EXERCISE: ask you to share your opinions on how the floodplain might look in the future.
 - Discussion of potential floodplain soil cleanup options and the outcomes and tradeoffs between the options
 - INTERACTIVE EXERCISE: ask your opinions about them.
 - Wrap-up questions and discussion.



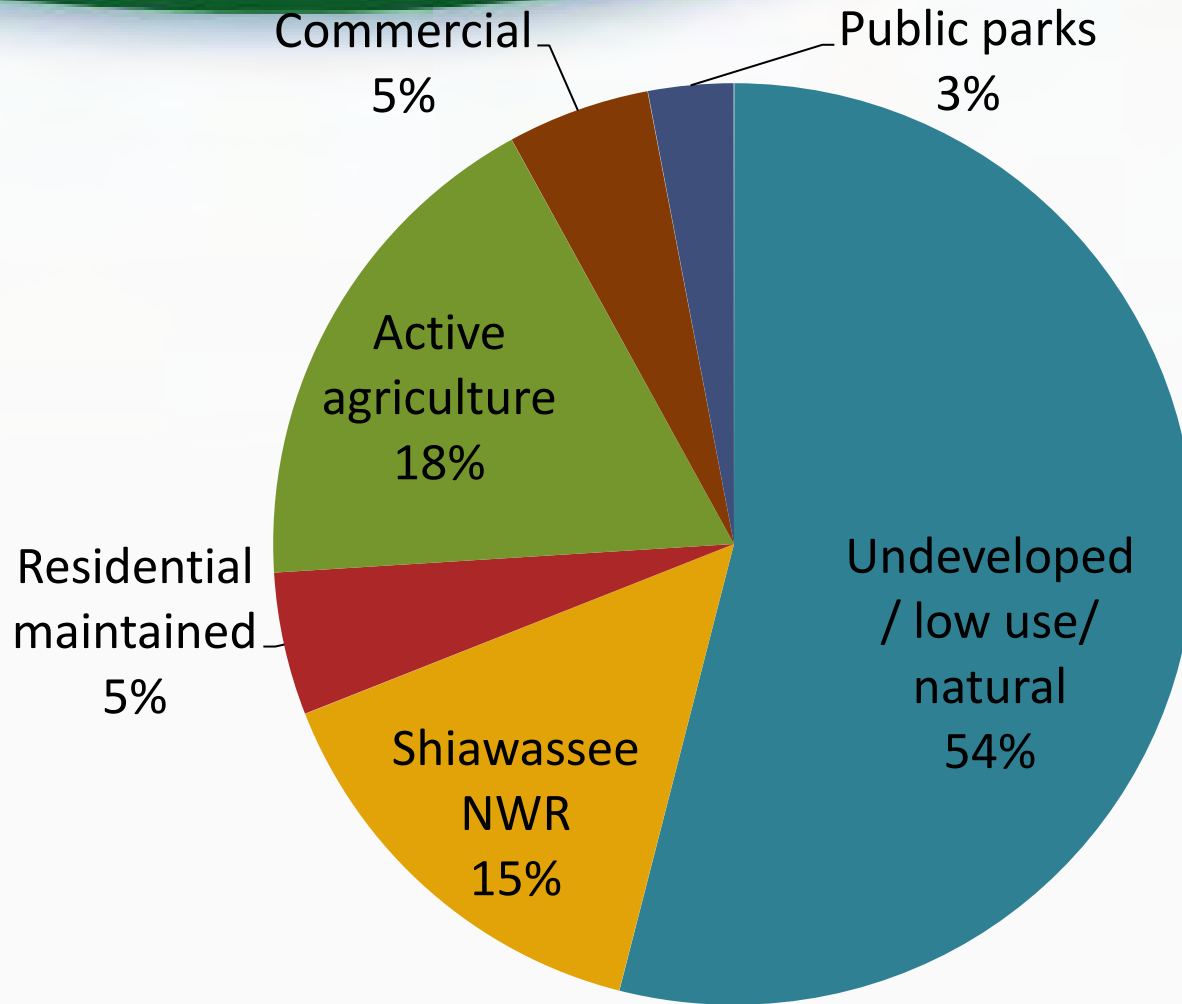
CURRENT ENVIRONMENTAL AND LAND USE CONDITIONS

Tittabawasse River 8-year Floodplain

- Frequently flooded (8-year floodplain) area along the TR is generally shown in the blue
- About 4,500 acres in the frequently flooded areas



Estimated Current Land Use





INTERACTIVE EXERCISE #1: FUTURE LAND USE

Future Land Conditions

How would you like the floodplain to look in the future?

Land Use	Increase	Decrease	Same	No opinion
Undeveloped/ natural ecosystem				
Residential				
Shiawassee NWR				
Active agriculture				
Commercial				
Public parks				



TITTABAWASSEE RIVER FLOODPLAIN SOIL CLEANUP OPTIONS & TRADEOFFS

Floodplain Cleanup Options

- The cleanup options being considered are:
 - Soil Removal
 - Digging up contaminated soil and replacing it with clean soil.
 - Contaminated soil would be transported off-site for disposal at a landfill.
 - Current ecosystem would be effected.
 - Soil Cover
 - Placing cover of clean material over contaminated soil.
 - Keeps people and animals from coming into contact with contamination.
 - Stops rainwater and wind from washing or blowing away the contaminated soil.
 - Current ecosystem would be effected.
 - Land-use Management
 - Puts legal limits on the use of property.
 - Keeps areas in natural condition.
 - Does not keep wildlife away from the contamination.
 - Michigan already limits construction and development in the floodplain.

Floodplain Cleanup Options (con't)

- Other things to consider:
 - Each option can protect people and the environment under the right conditions.
 - All have some tradeoffs or impacts to consider.
 - A mixed approach combining the options may provide the best balance among the tradeoffs for the floodplain cleanup.

Tradeoffs for Floodplain Cleanup Options

	CLEANUP OPTIONS		
TRADEOFFS	LAND USE MANAGEMENT	SOIL COVER	SOIL REMOVAL AND DISPOSAL
Flexibility for future land use	Least flexible	Somewhat flexible	Most flexible
Impacts to existing ecosystem	Least impact	More impact	Most impact
Time to implement and achieve protection	Least time to implement	More time to implement	Most time to implement
Reliance on monitoring and maintenance	Reliance on monitoring	Reliance on both monitoring and maintenance	Least to no reliance on monitoring
Short-term worker and community impacts	Least short-term impacts	More short-term impacts	Most short-term impacts
Cost	Least cost	More cost	Most cost



INTERACTIVE EXERCISE #2: FEEDBACK ON CLEANUP OPTION TRADEOFFS

Discussion Wrap-up

- Information from discussions will be used to help shape the Tittabawassee River Floodplain response proposal expected in 2014.
- EPA will continue to hold meetings through the summer.
- Summary of findings in Fall newsletter.
- Outreach Summary presented to CAG at fall CAG meeting.



QUESTIONS?