



***DEVILS LAKE
FLOOD RISK
MANAGEMENT
PROJECT***

***Presentation
for***

PUBLIC MEETINGS

22 October 2008





INTRODUCTIONS

- ✓ Corps of Engineers Team Members
- ✓ North Dakota State Water Commission
- ✓ Ramsey County
- ✓ City of Devils Lake



Gatewell at Creel Bay





FORMAT FOR MEETING

- ✓ Please sign in and indicate if you'd like to be added to the mailing list.
- ✓ Slide Presentation
- ✓ Open House Format



Placing fabric on embankment before placing rock (riprap)





PROJECT TIMELINE

- ✓ April 2008 - Kickoff Public Meeting Presenting Alternatives
- ✓ July 2008 - Completed Screening Process of Alternatives
- ✓ October 2008 - Public Meeting Presenting Draft Alignment Alternatives
- ✓ January 2009 - Select Preferred Alignment
- ✓ June 2009 - Begin Plans and Specs
- ✓ August 2009 - Complete Environmental Assessment
- ✓ December 2009 - Complete Plans and Specs





WHY WE'RE HERE

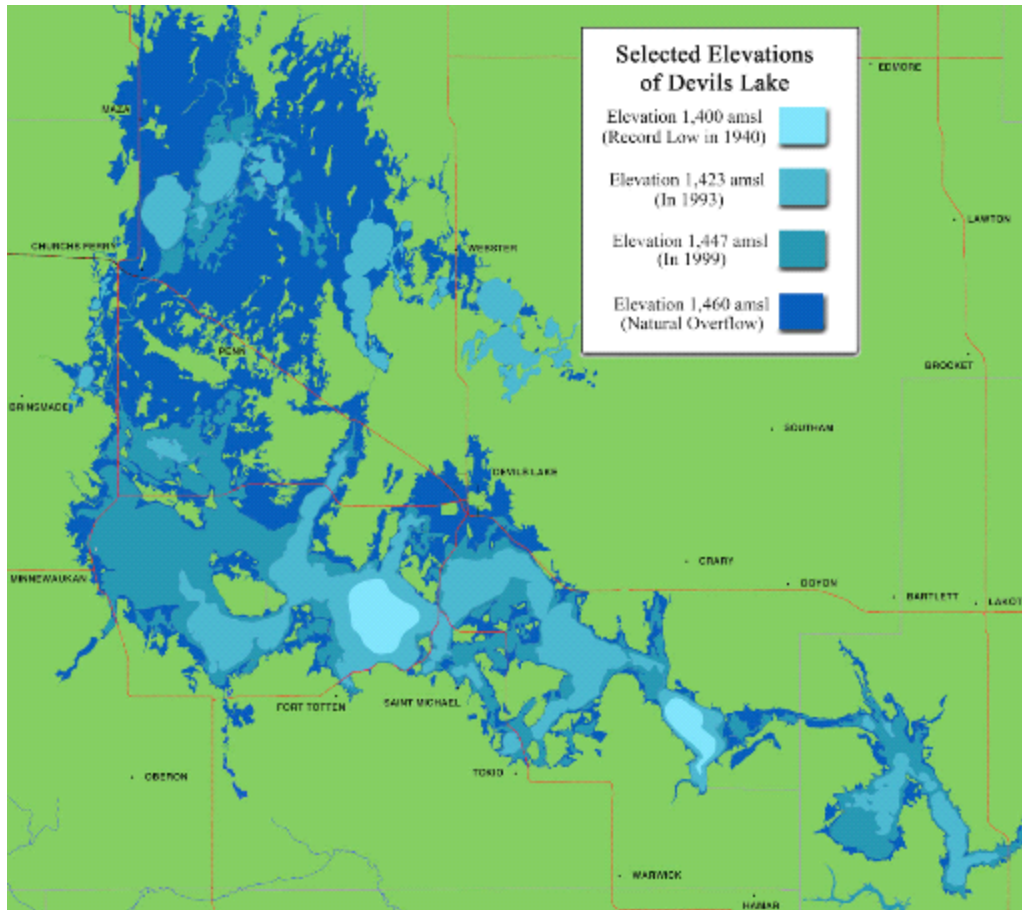
- ✓ Corps received funding to look at what actions to take at the City of Devils Lake should the lake continue to rise.
- ✓ Challenge is to come up with a plan, complete the design, environmental review and real estate acquisition and allow time for implementation.
- ✓ Trigger points would be identified so actions wouldn't be taken until absolutely necessary.

Embankment at Golf Course





WHAT'S HAPPENED SO FAR



- ✓ Identified Alternatives
- ✓ Obtained public feedback
- ✓ Screened Alternatives
- ✓ Eliminated Alternatives from further evaluation





BOTTOM LINE UP FRONT

Alternatives that have been Dropped from Further Consideration:

- ✓ Upper Basin Storage
- ✓ Modifying Elevations at Tolna Coulee.
- ✓ Relocating the City





BOTTOM LINE UP FRONT

Alternatives Recommended for Further Evaluation:

- ✓ Embankment Raises/Extensions
- ✓ Combination of Embankment Raises/Extensions and Relocations





PROJECT PURPOSE

- ✓ The primary purpose of this project is to focus on what actions should be taken at the City of Devils Lake to reduce risk of flood damages to the city should Devils Lake continue to rise.

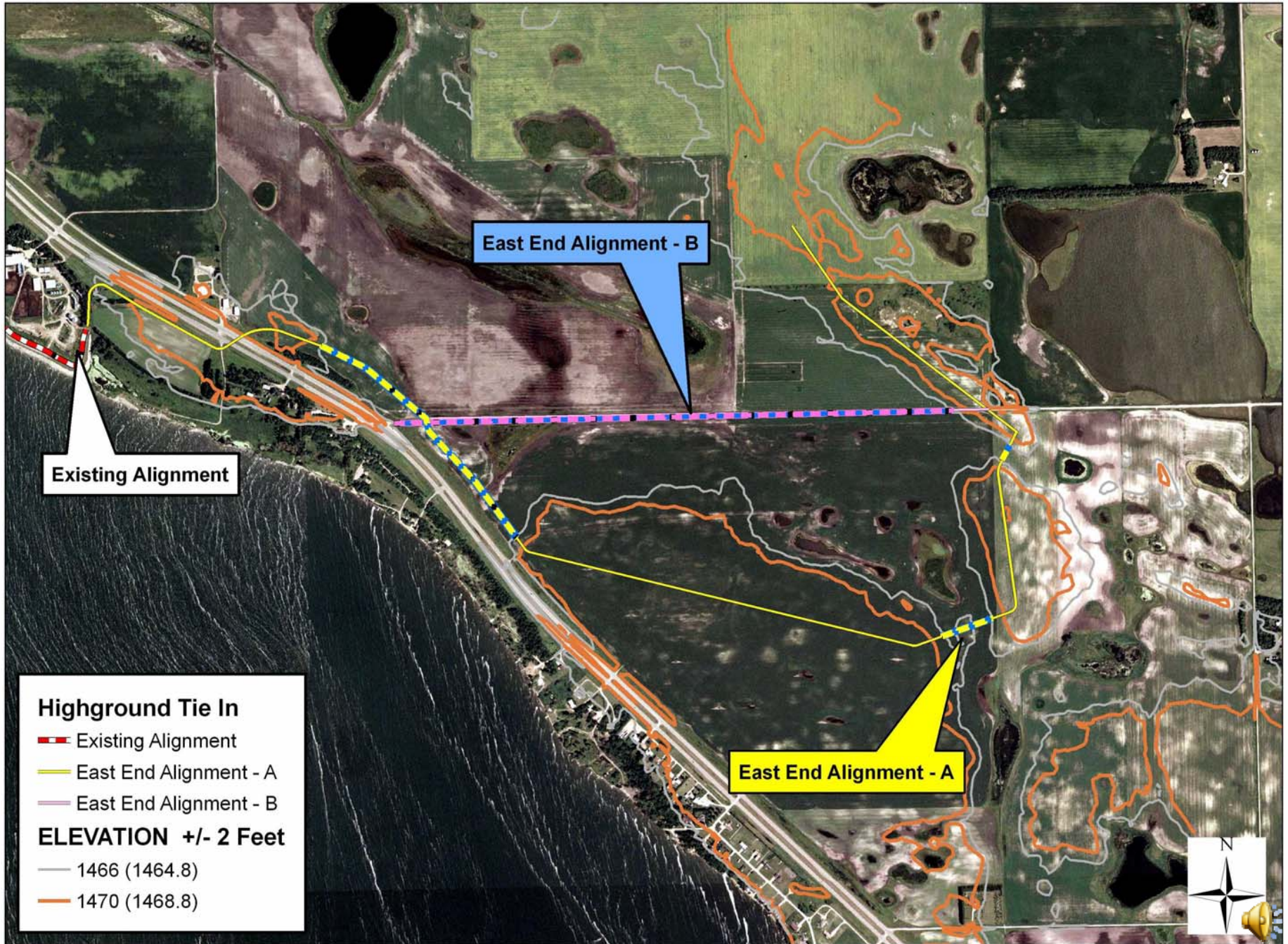


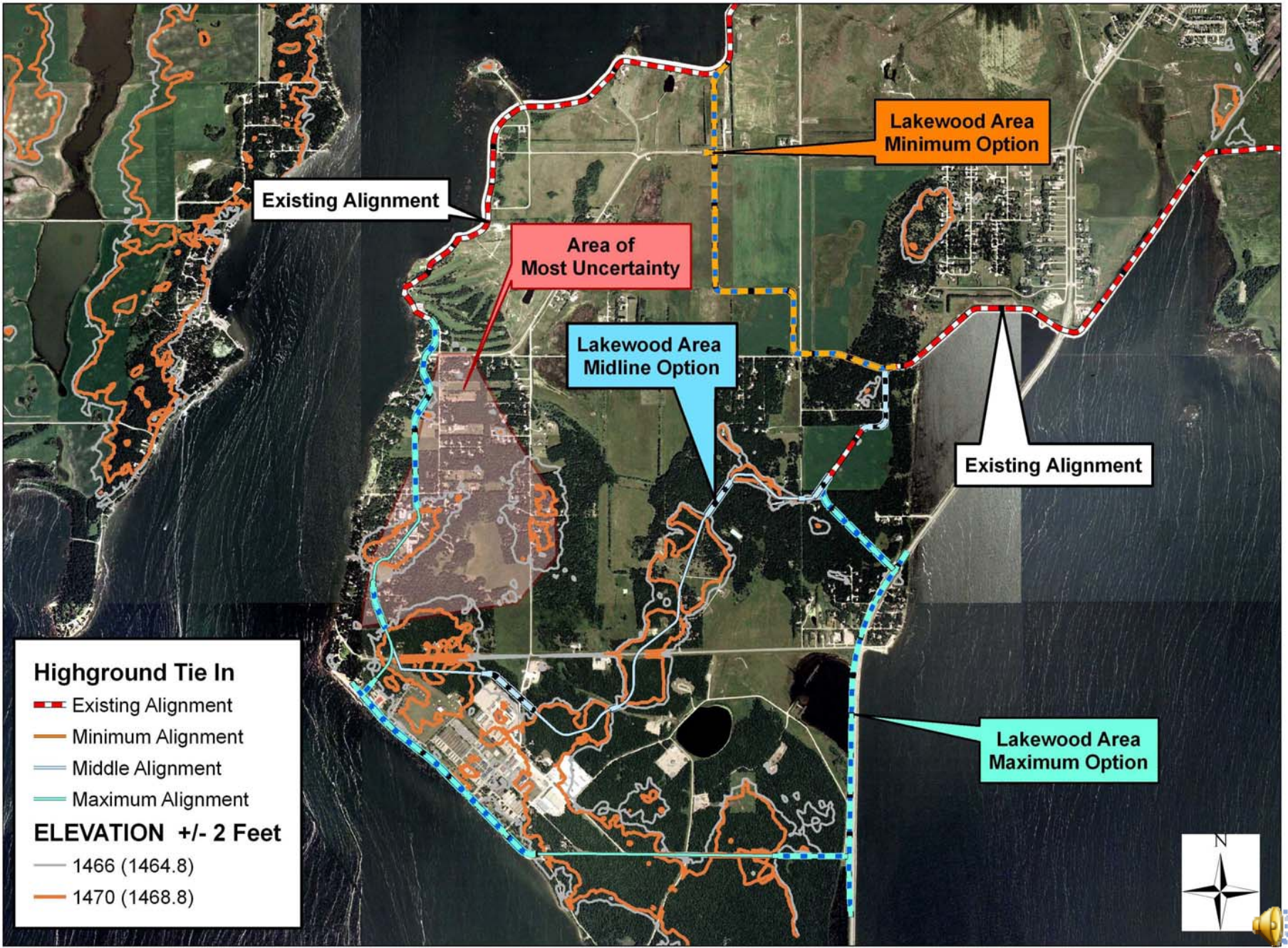


FEATURE AREAS

- ✓ East Area
- ✓ Lakewood Area
- ✓ Airport







Existing Alignment

Lakewood Area Minimum Option

Area of Most Uncertainty

Lakewood Area Midline Option

Existing Alignment

Lakewood Area Maximum Option

Highground Tie In

-  Existing Alignment
-  Minimum Alignment
-  Middle Alignment
-  Maximum Alignment

ELEVATION +/- 2 Feet

-  1466 (1464.8)
-  1470 (1468.8)

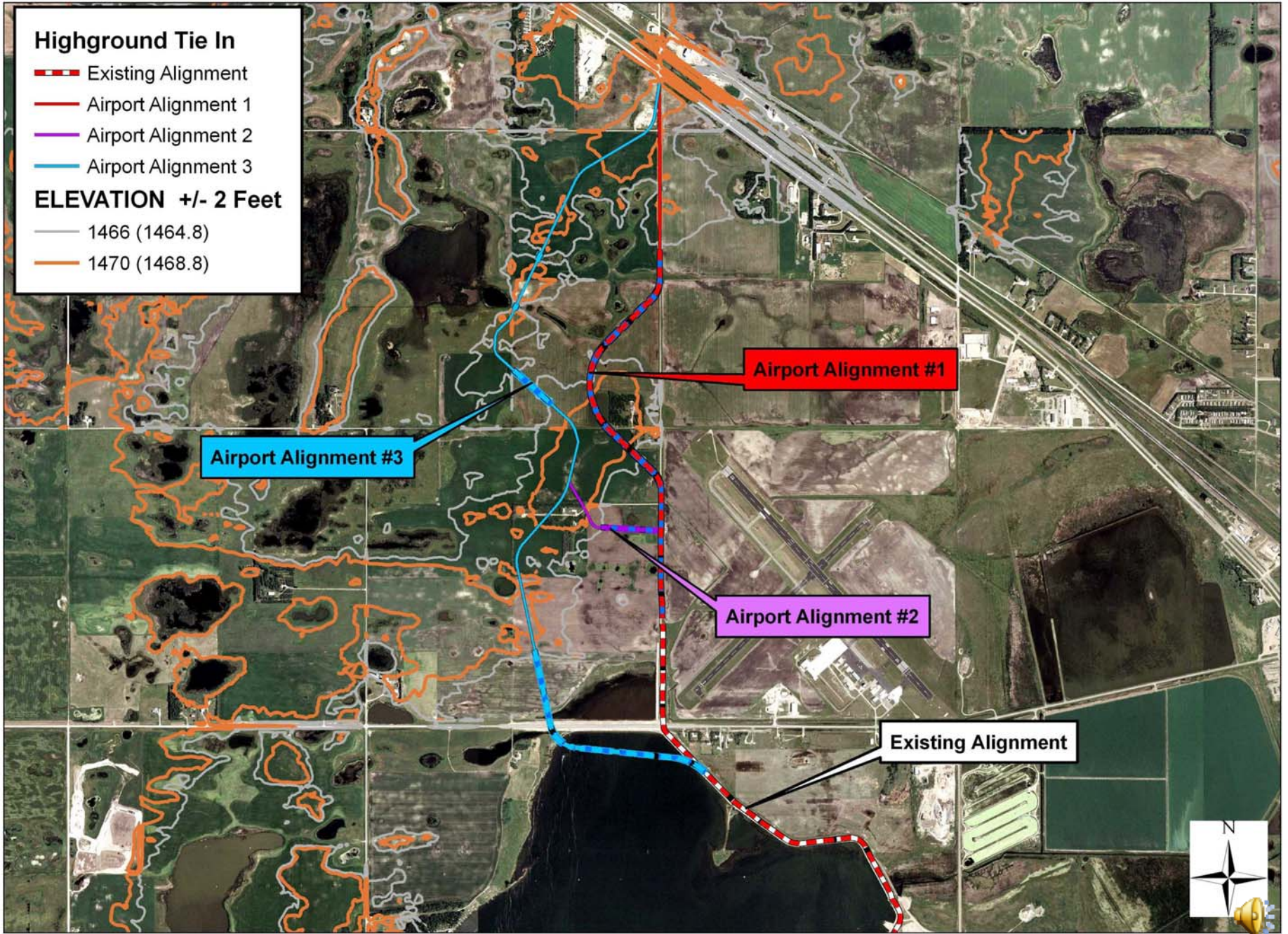


Highground Tie In

- Existing Alignment
- Airport Alignment 1
- Airport Alignment 2
- Airport Alignment 3

ELEVATION +/- 2 Feet

- 1466 (1464.8)
- 1470 (1468.8)





INITIAL TRADEOFFS

Preliminary Estimate to 1466.2

	Lakewood Minimum	Lakewood Midline	Lakewood Maximum
Construction Costs	\$69,000,000	\$75,000,000	\$120,000,000
STRUCT/UTL - Protected	TBD	TBD	TBD
STRUCT/UTL - Unprotected	\$21,000,000	\$8,000,000	\$6,000,000

*Excludes Camp Grafton because the majority of the camp is above 1461.





DECISION MATRIX

- ✓ Embankment Height
- ✓ Extent of Project
- ✓ Real Estate Requirements
- ✓ Access
- ✓ Relocations vs. Cofferdams
- ✓ Utilities
- ✓ Interior Drainage/Pump Stations





DECISION MATRIX

- ✓ Implementability
- ✓ Overall Cost
- ✓ Benefits
- ✓ Risk
- ✓ Environmental Resources
 - ✓ Cultural, Social, and Natural Resource Effects
- ✓ Groundwater





GROUNDWATER

- ✓ **Problem Statement:** If lake levels rise groundwater levels on the protected side of the embankment may also raise, depending upon:
 - ✓ Sandy versus clayey soils
 - ✓ How high and how long the lake level is elevated
 - ✓ Distance property is from the embankment

- ✓ **What the Corps is Doing:** Enlisting technical assistance on groundwater from the Geological Survey (USGS) and State resources, as well as:
 - ✓ Evaluating existing soil and groundwater data
 - ✓ Obtaining additional subsurface data





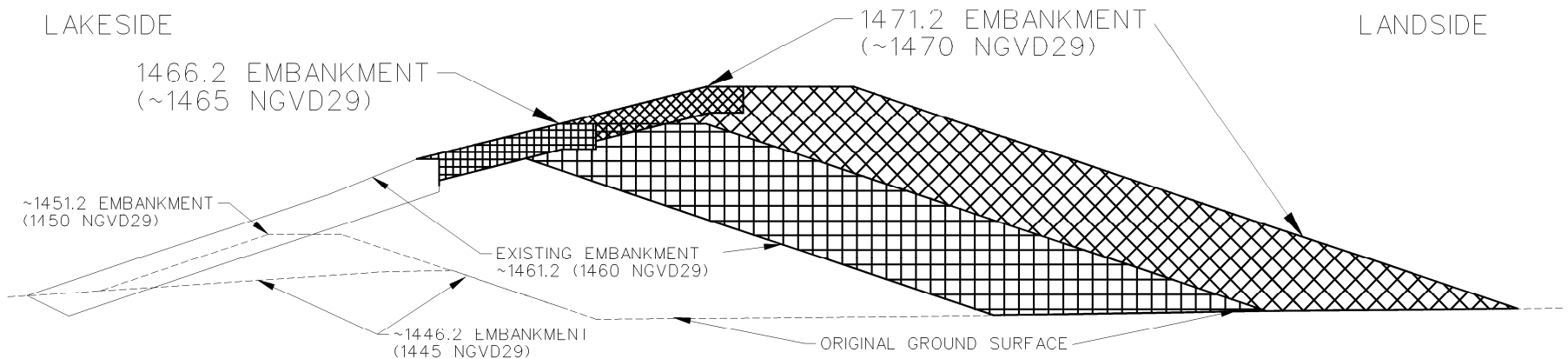
VERTICAL DATUM

- ✓ Devils Lake information will be reported in NGVD 29 and NAVD 88.
- ✓ NAVD 88 is ~ 1.2 feet higher than NGVD 29 in the Devils Lake area.
- ✓ NGVD 29 elevations will appear within parenthesis (1465).





CONCEPTUAL FOOTPRINT





NEXT STEP

- ✓ Meeting with Lakewood Residents on November 19th.
- ✓ Preferred Alignment by January.





CONTACT US

- ✓ Any comments you have leave at the front table.
- ✓ Additional comments or questions contact:

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- ✓ Also check our project website at:
www.mvp.usace.army.mil/devilslake

