

The background of the slide is a close-up of the American flag, showing the stars and stripes. The colors are vibrant, with the red stripes and white stars on a dark blue field. In the lower right quadrant, there is a small, golden sandcastle with two towers and a central archway, resting on a white surface. The overall composition is patriotic and thematic.

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

***Presentation
for***

PUBLIC MEETINGS

19 November 2008



INTRODUCTIONS

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



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
- ✓ Oct./Nov. 2008 - Public Meetings 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

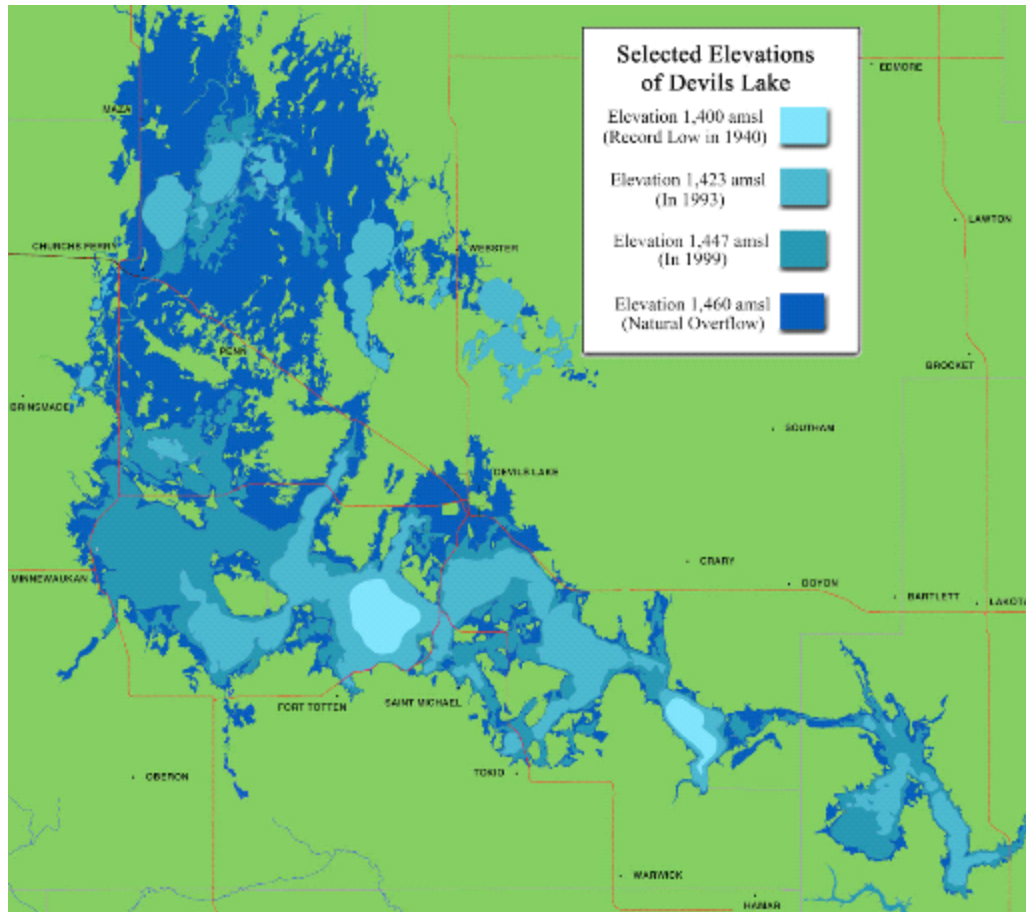
- ✓ Corps received funding to look at what actions to take at the City of Devils Lake should the lake continue to rise.
- ✓ Challenge is to come up with a plan, complete the design, environmental review and real estate acquisition and allow time for implementation.
- ✓ Trigger points would be identified 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





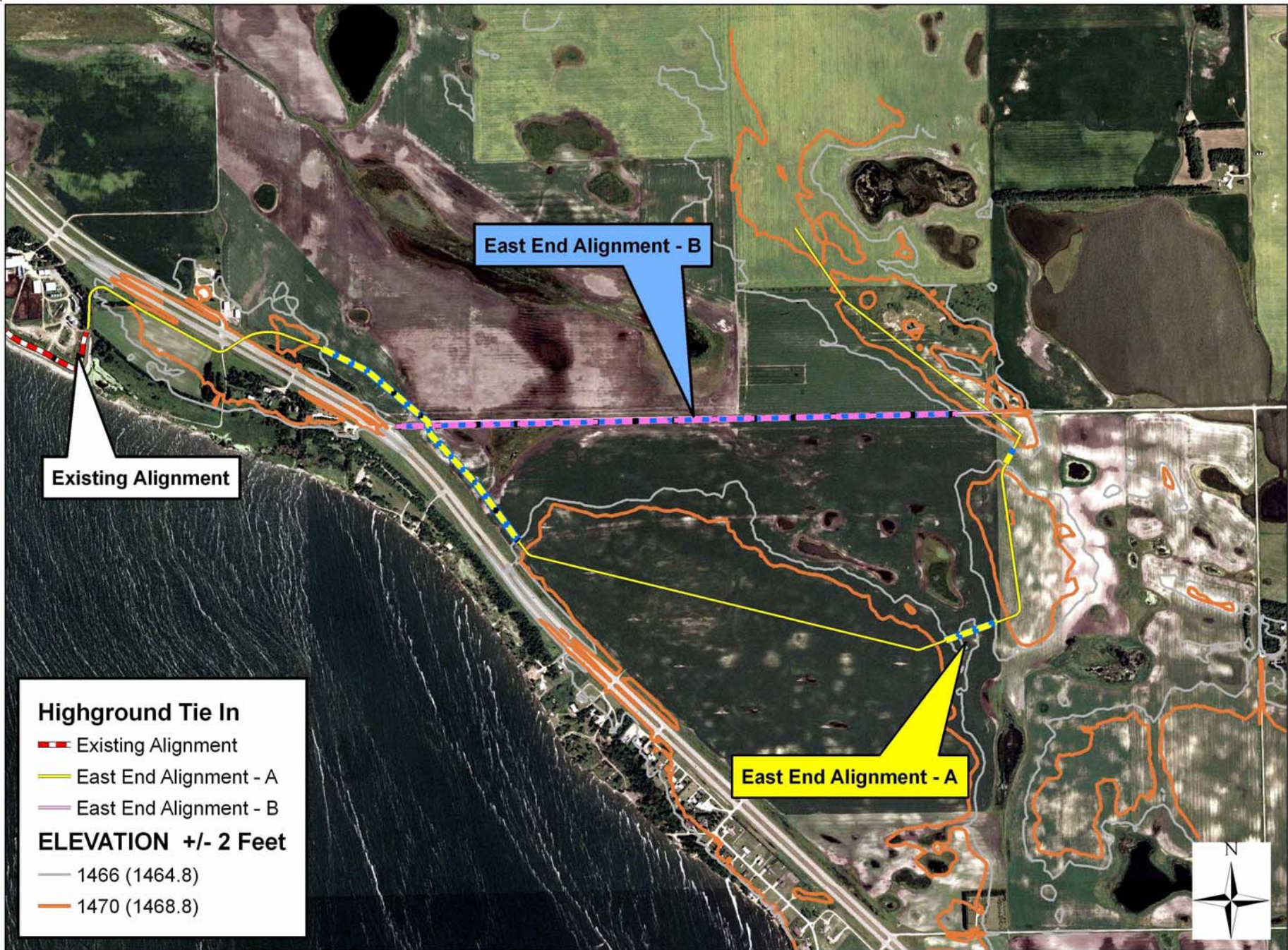
PROJECT PURPOSE

- ✓ 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
- ✓ Airport
- ✓ Lakewood Area

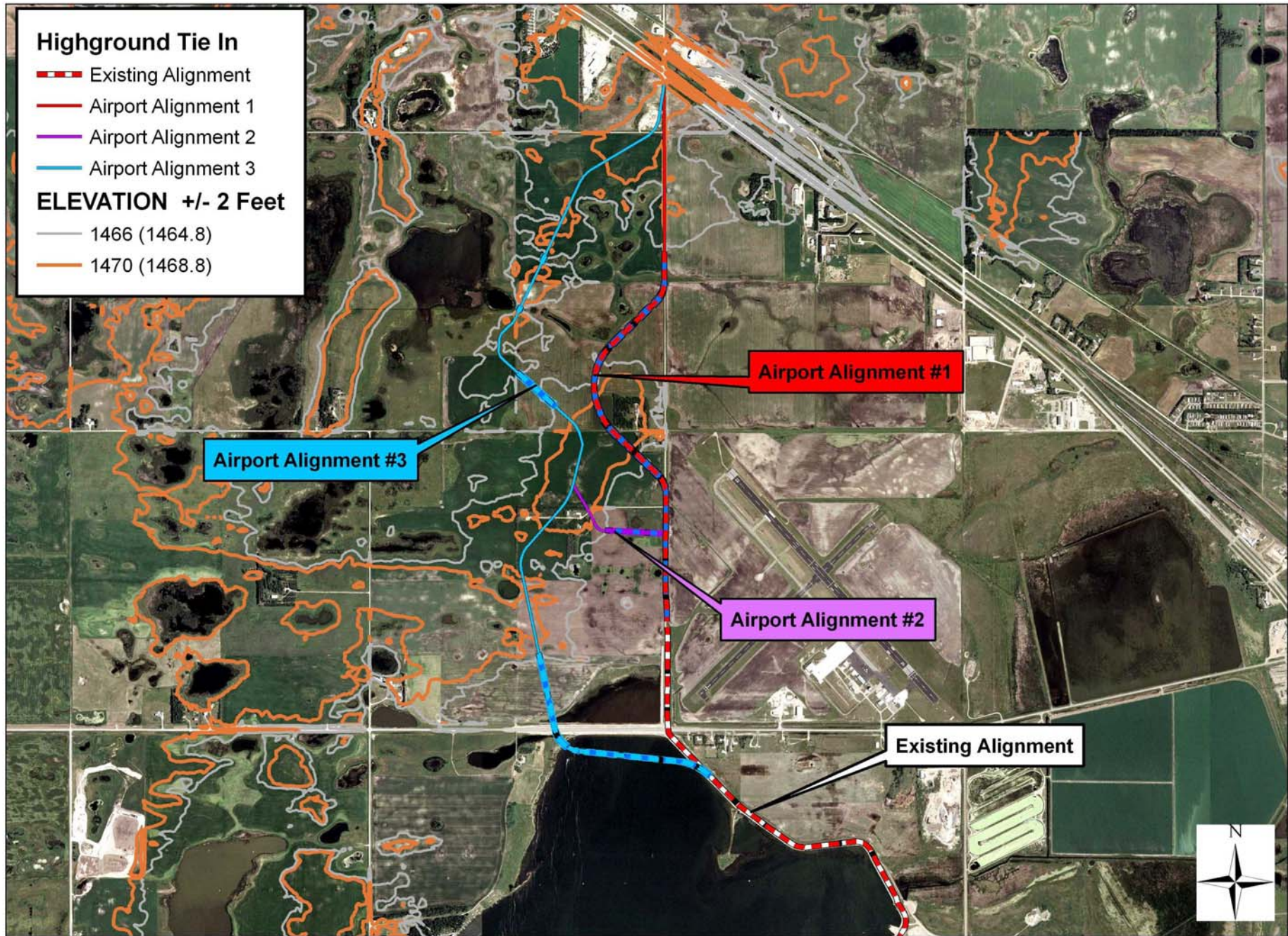


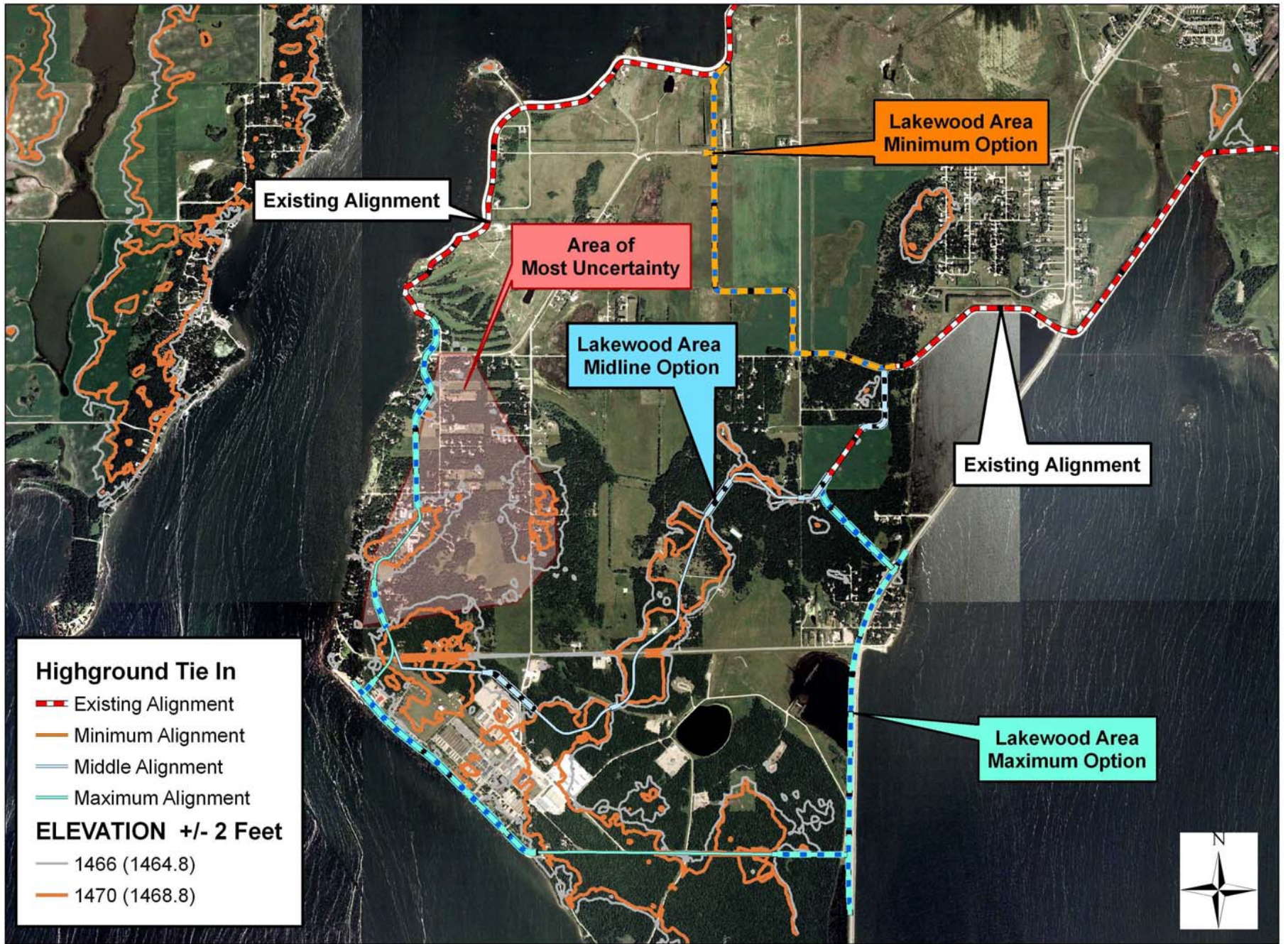
Highground Tie In

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

ELEVATION +/- 2 Feet

- 1466 (1464.8)
- 1470 (1468.8)



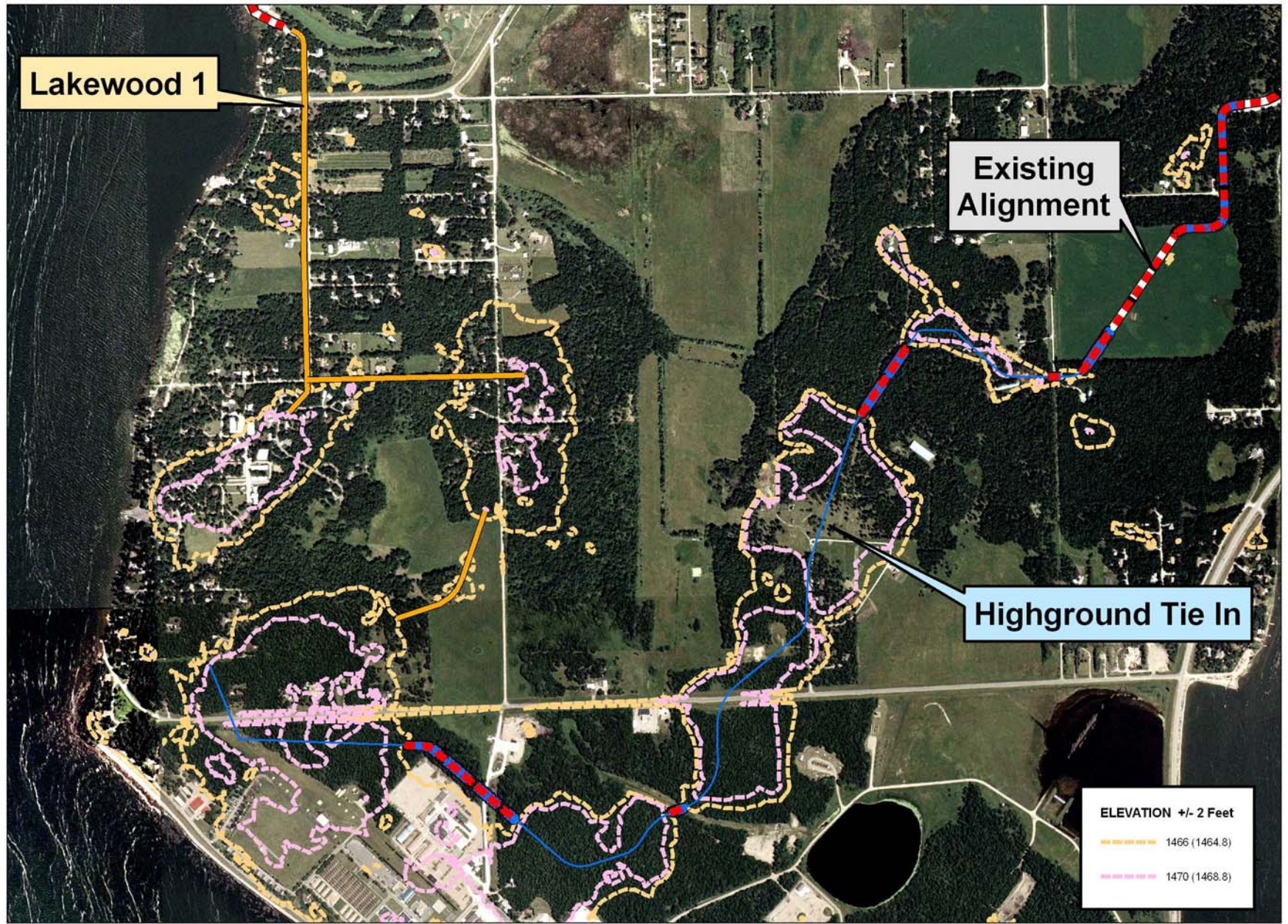


Lakewood 1

Existing Alignment

Highground Tie In

ELEVATION +/- 2 Feet
----- 1466 (1464.8)
----- 1470 (1468.8)



Lakewood 1

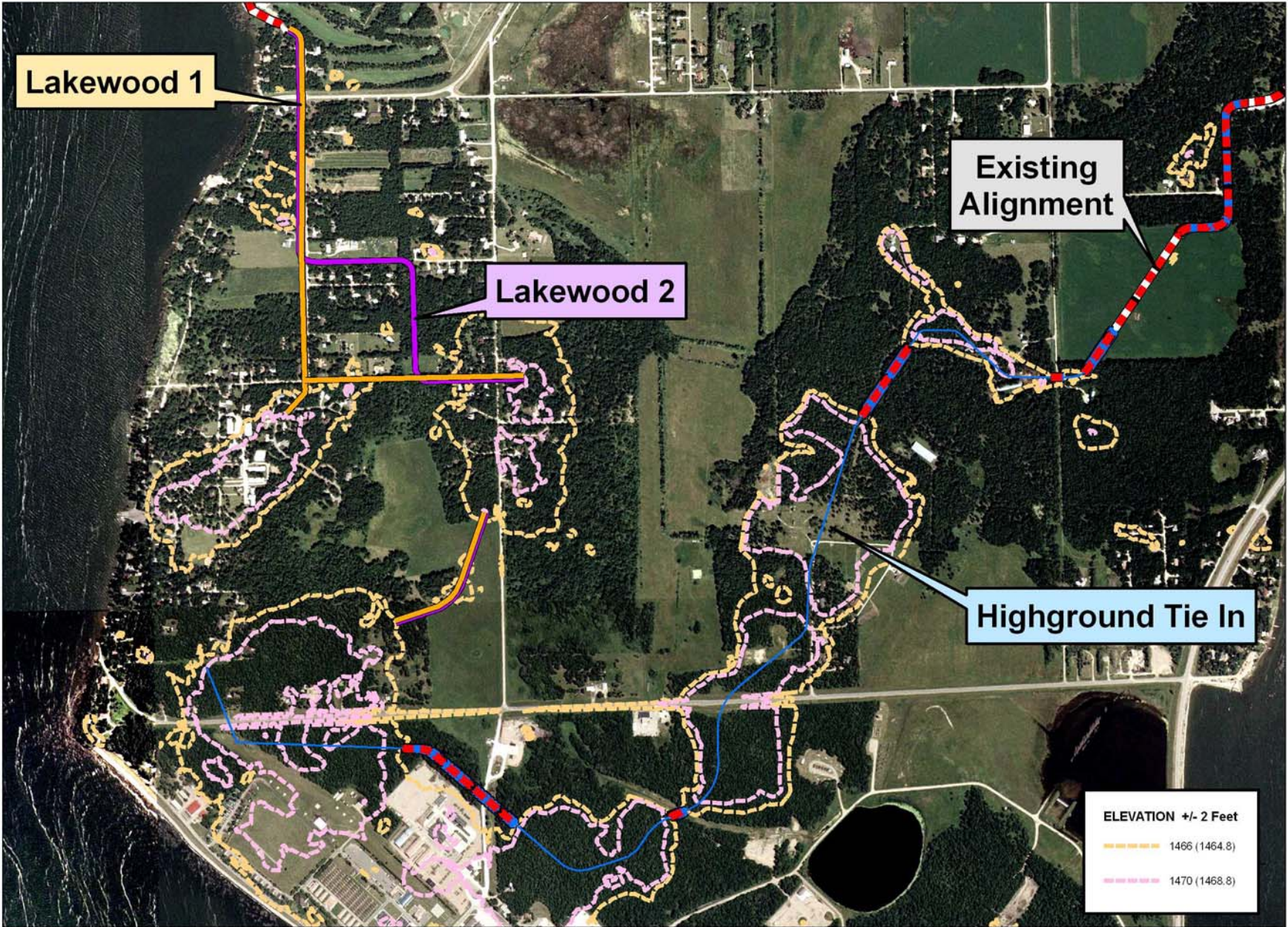
Lakewood 2

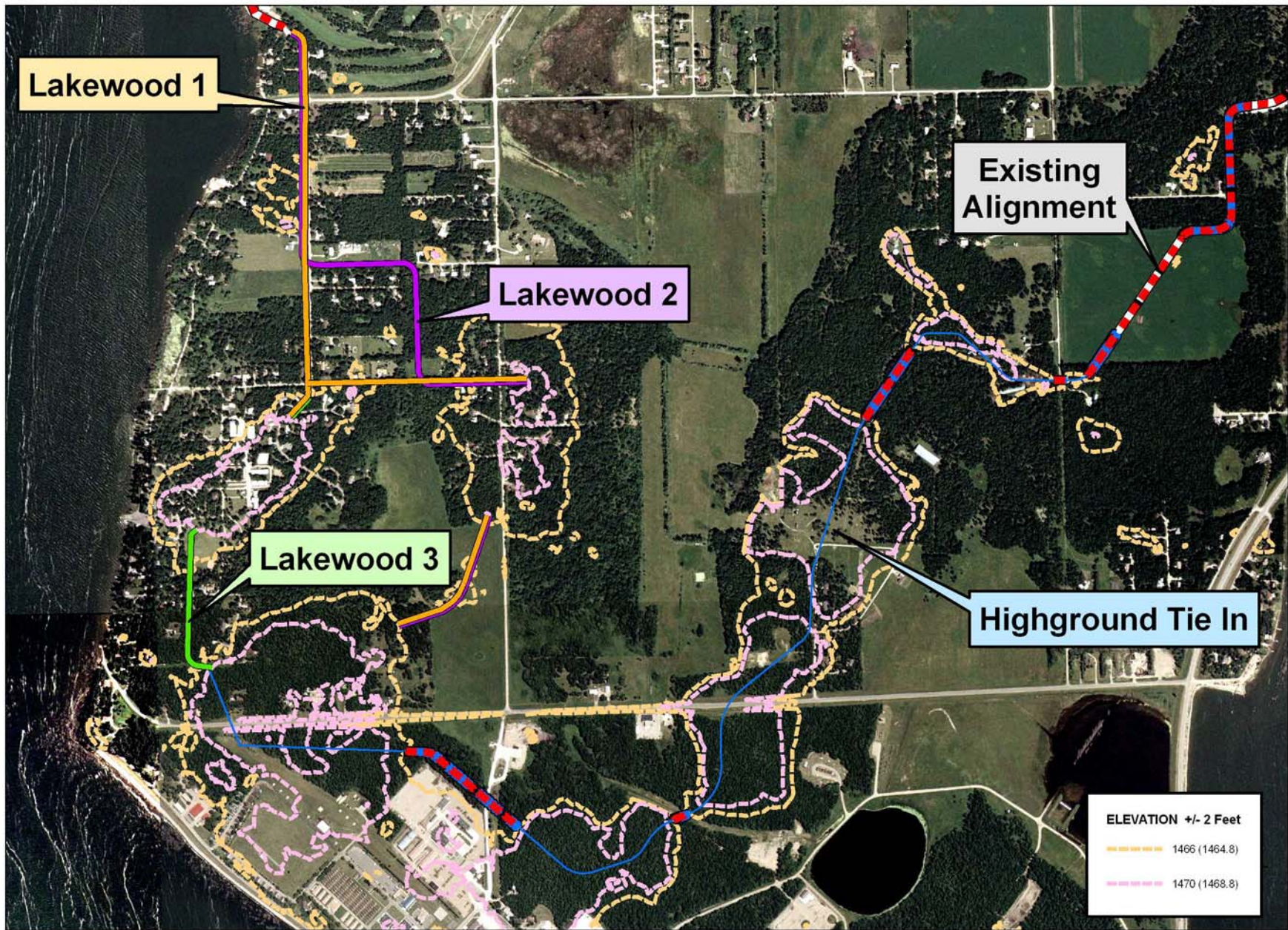
Existing Alignment

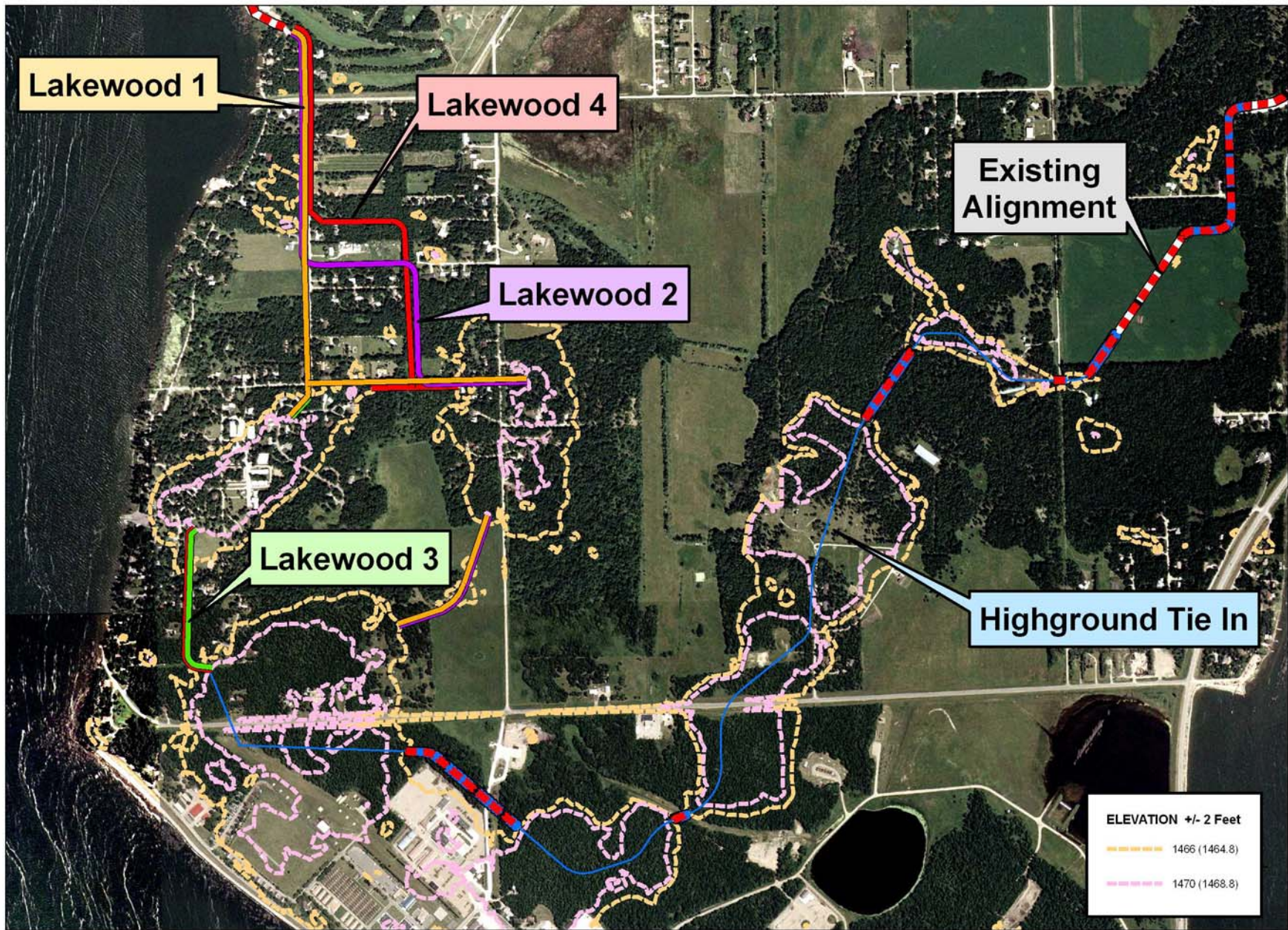
Highground Tie In

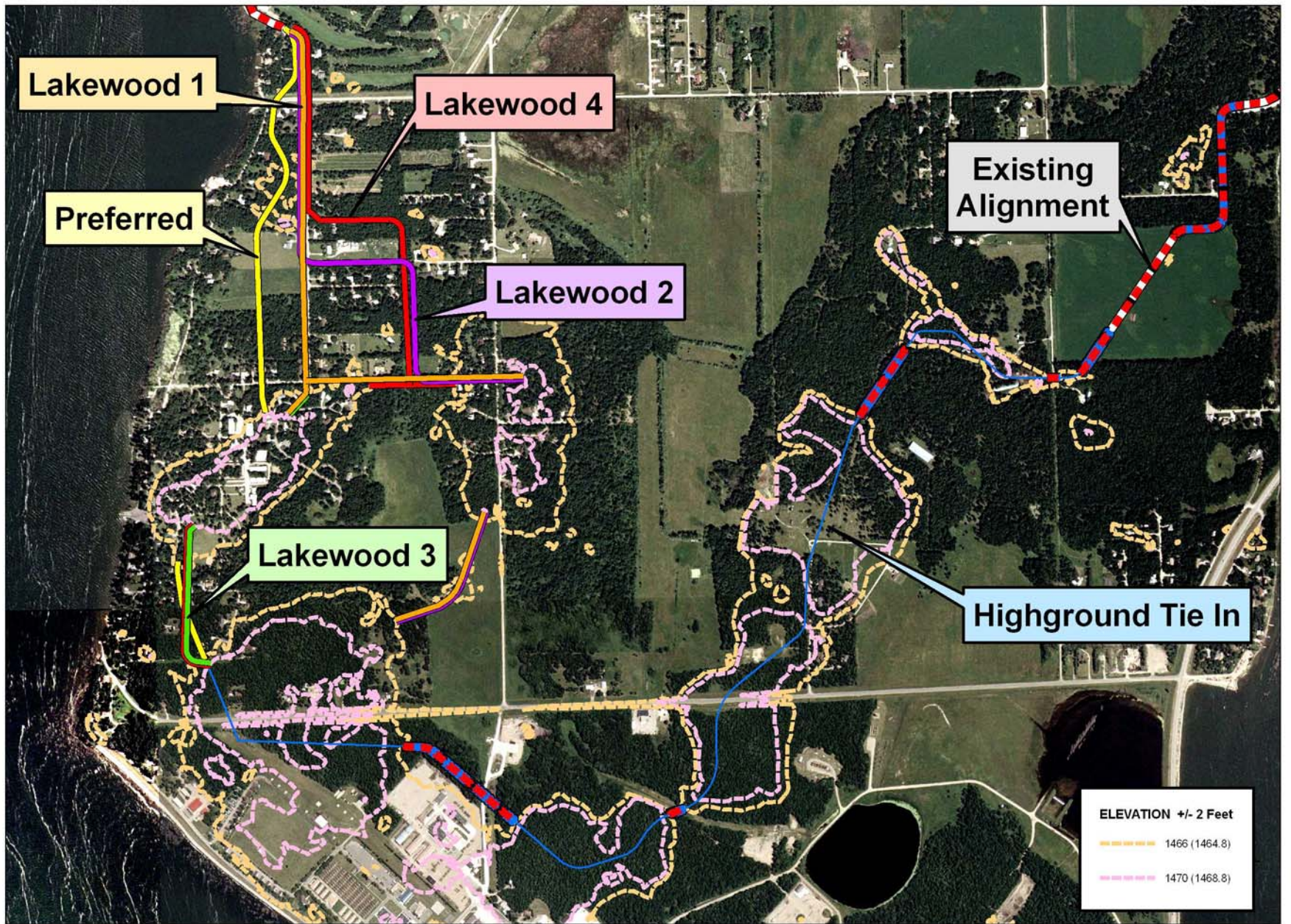
ELEVATION +/- 2 Feet

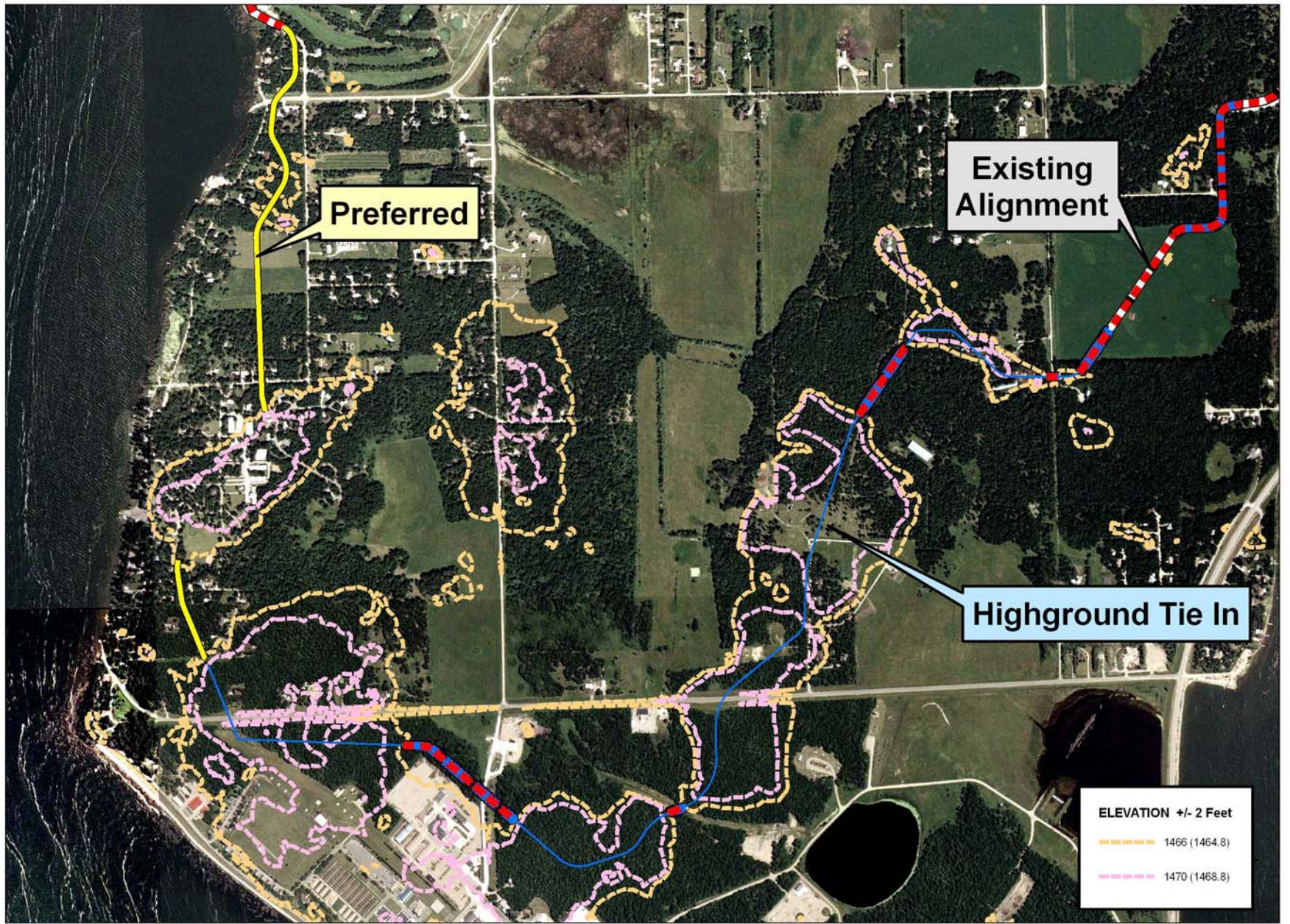
- 1466 (1464.8)
- 1470 (1468.8)









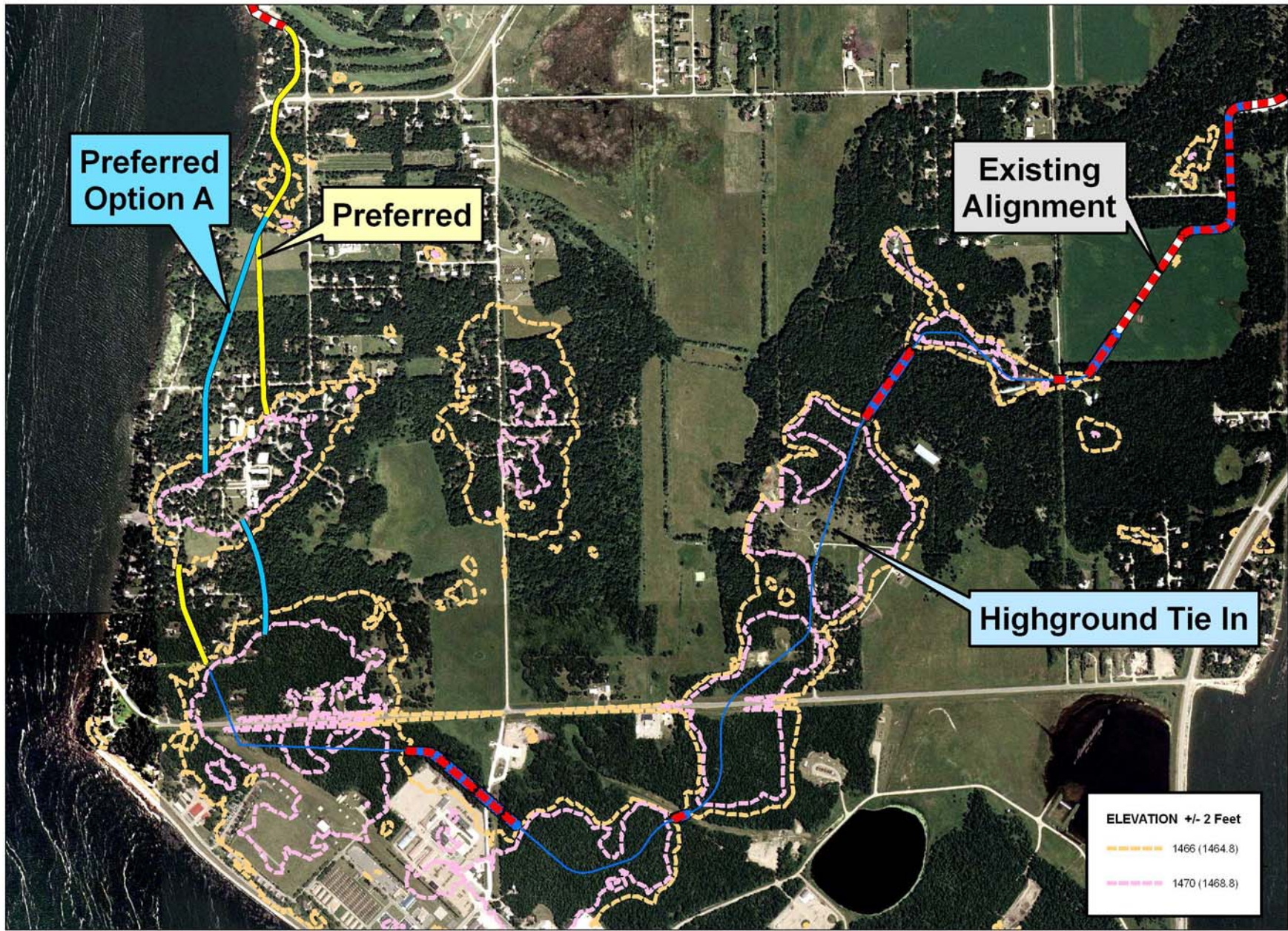


Preferred

Existing Alignment

Highground Tie In

ELEVATION +/- 2 Feet
1466 (1464.8)
1470 (1468.8)



Preferred Option A

Preferred

Existing Alignment

Highground Tie In

ELEVATION +/- 2 Feet
1466 (1464.8)
1470 (1468.8)



INITIAL TRADEOFFS

Preliminary Cost Estimates

	Raise (NAVD 88)	Lakewood Minimum	Lakewood Midline	Lakewood Maximum
Construction Costs	1466.2	\$72M	\$78M	\$121M
	1471.2	\$126M	\$144M	\$197M
Real Estate - Protected	1466.2	\$299M	\$327M	\$337M
	1471.2	\$392M	\$428M	\$584M
Real Estate - Unprotected	1466.2	\$48M	\$20M	\$11M
	1471.2	\$208M	\$172M	\$16M
Benefit/Cost	1466.2	4.1	4.2	2.8
	1471.2	3.1	3.0	3.0



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

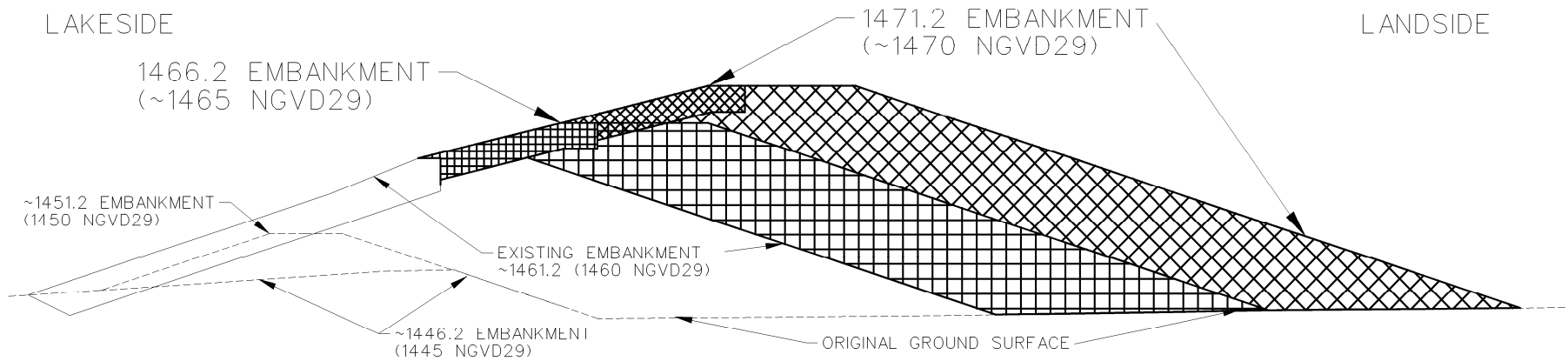


VERTICAL DATUM

- ✓ 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

- ✓ Continue to work with State and Local Officials.
- ✓ Preferred Alignment by January.



CONTACT US

- ✓ Any comments you have leave at the front table.
- ✓ Additional comments or questions contact:
 - Bonnie Greenleaf
Phone #: (651) 290-5476
 - Kevin Bluhm
Phone #: (651) 290-5247
- ✓ Also check our project website at:
www.mvp.usace.army.mil/devilslake