



State Highway 10A Improvements

(from the SH-10 junction extending 6.18 miles east to the SH-100 junction, Muskogee and Sequoyah Counties, Oklahoma)

Open House

January 31, 2017



State Highway 10A Improvements

Open House Purpose



- Explain purpose and need for SH-10A improvements
- Introduce 7 alternatives considered
- Present preferred alternative
- Receive public feedback/input on the project

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Existing Facility



- Two-lane facility
- Narrow lanes
- No shoulders
- Annual Average Daily Traffic
 - Current (2016) = 1,200 vehicles per day
 - Projected (2036) = 1,700 vehicles per day

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Purpose and Need



- Improve safety
 - 68 collisions recorded from 2005 through 2016
 - Approximately 3 times the statewide average number of collisions
 - Lacks adequate shoulders and clear recovery area
 - Limited sight distance due to substandard horizontal & vertical curves
- Improve facility to meet current design standards
 - Correct roadway deficiencies, enhance safety, and efficiently accommodate traffic
- Accommodate traffic bound for Lake Tenkiller

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Project Extents



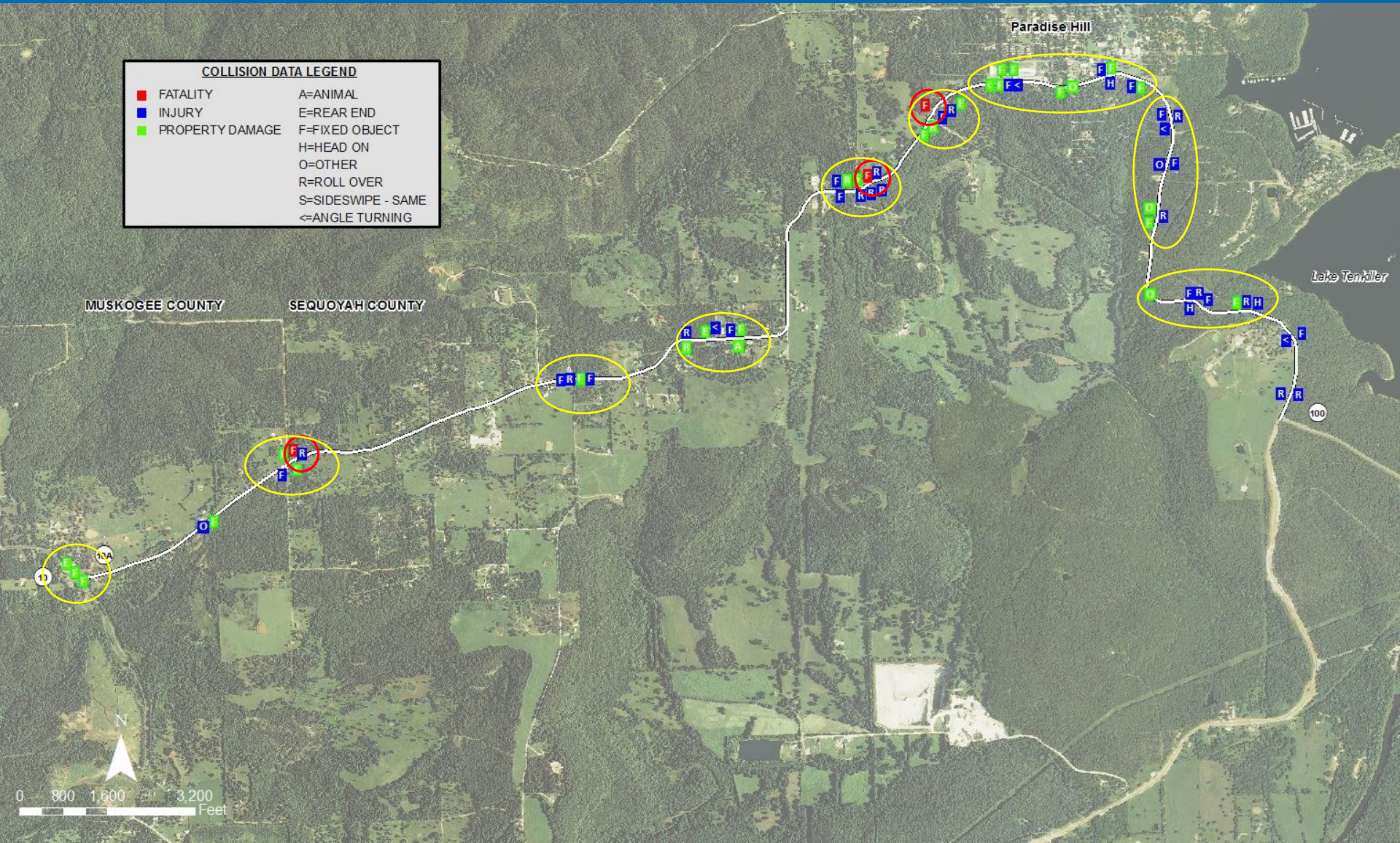
**SH-10A from the junction of SH-10,
extending east 6.18 miles to the SH-100 junction**

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Collisions, 2005 - 2016



COLLISION DATA LEGEND	
■ FATALITY	A=ANIMAL
■ INJURY	E=REAR END
■ PROPERTY DAMAGE	F=FIXED OBJECT
	H=HEAD ON
	O=OTHER
	R=ROLL OVER
	S=SIDESWIPE - SAME
	<=ANGLE TURNING



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Constraints Mapping



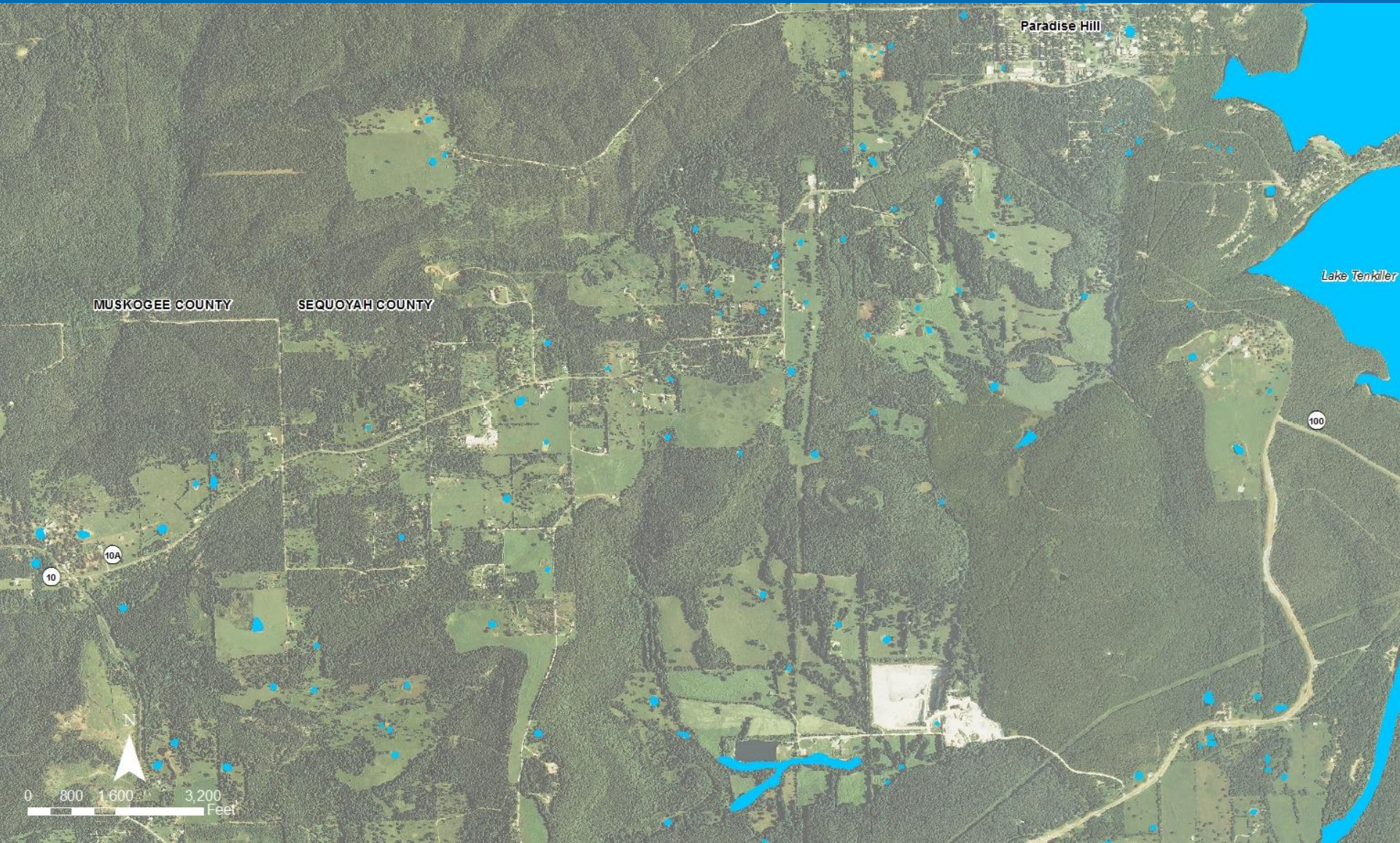
Reconnaissance Performed to Identify Constraints

- Wetlands and Waters
- Threatened & Endangered Species Critical Habitat
- Archeological Sites and Historic Properties
- Aboveground or Underground Storage Tanks
- Oil/Gas Wells
- Residences
- Commercial Facilities
- Utilities



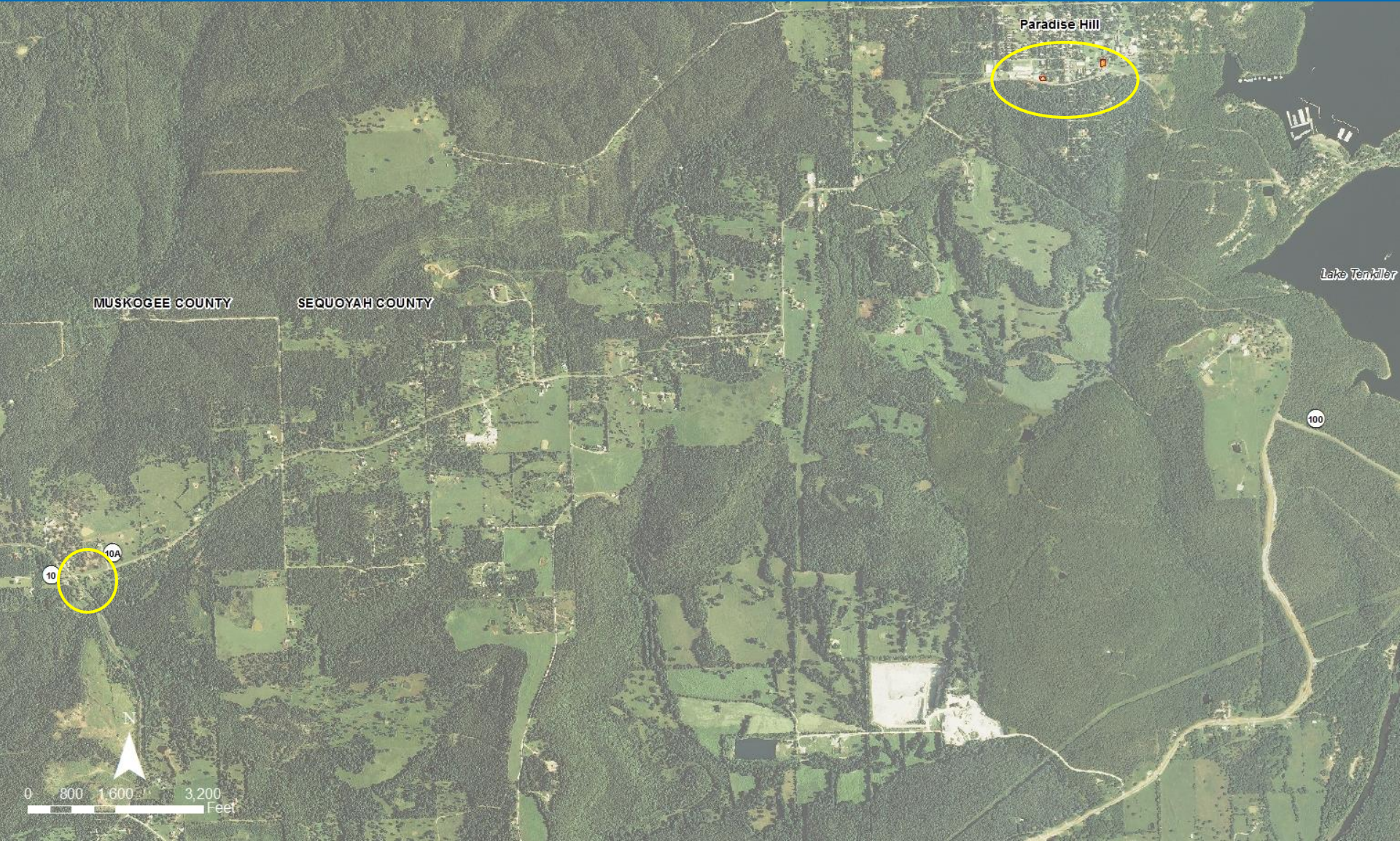
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National Wetlands Inventory



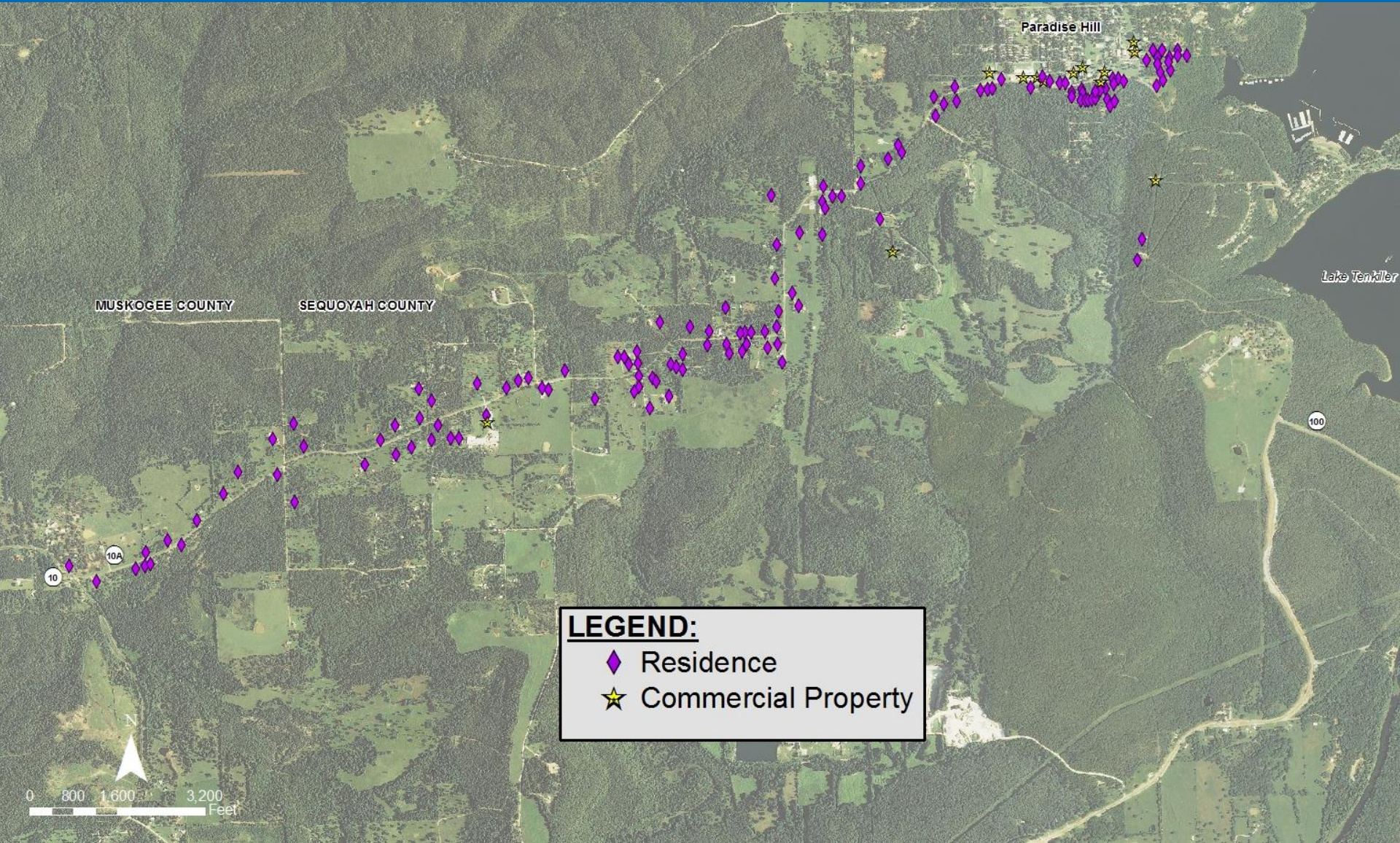
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Underground and Aboveground Storage Tanks



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Residences and Commercial Facilities

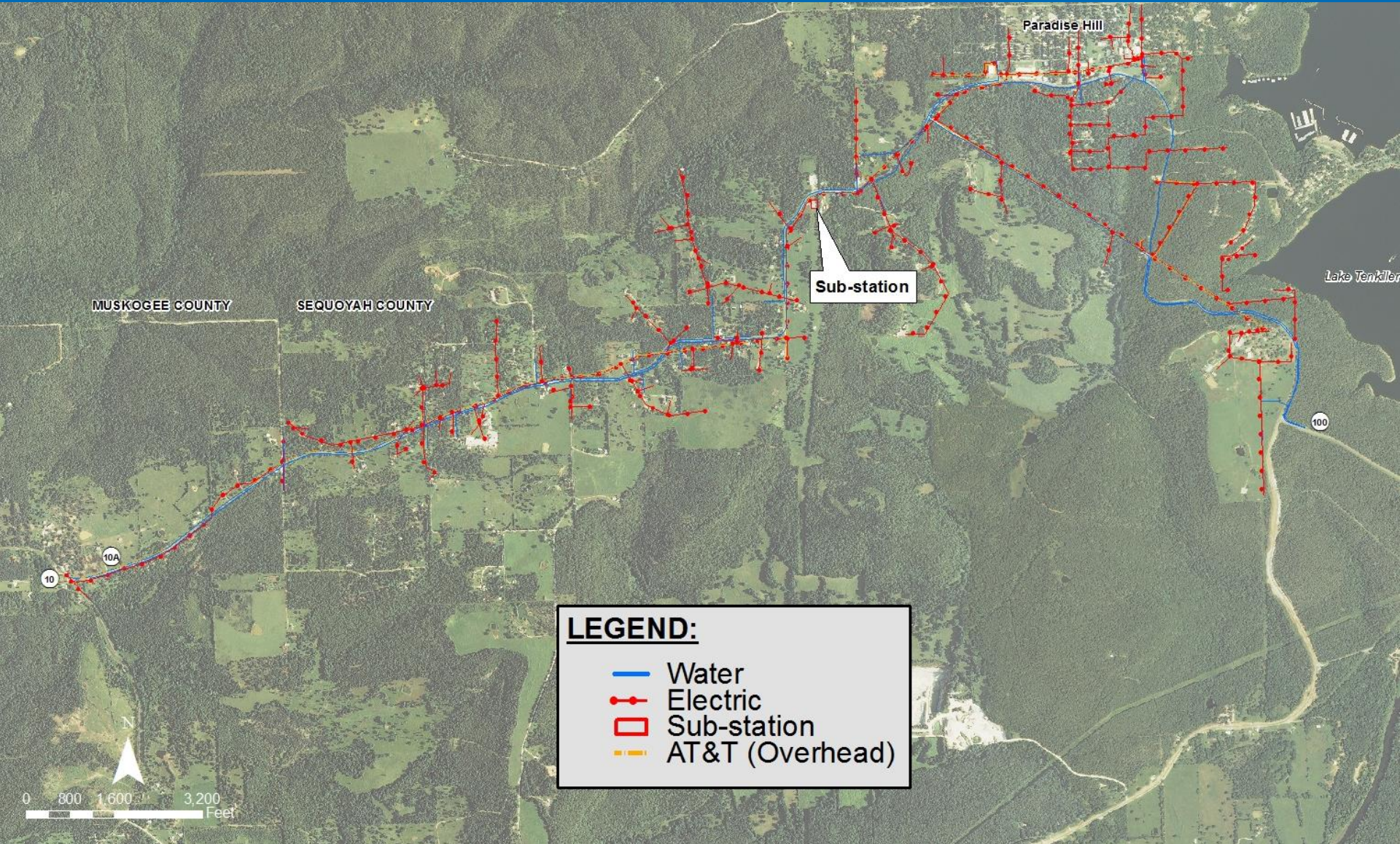


LEGEND:

- ◆ Residence
- ★ Commercial Property

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Utilities

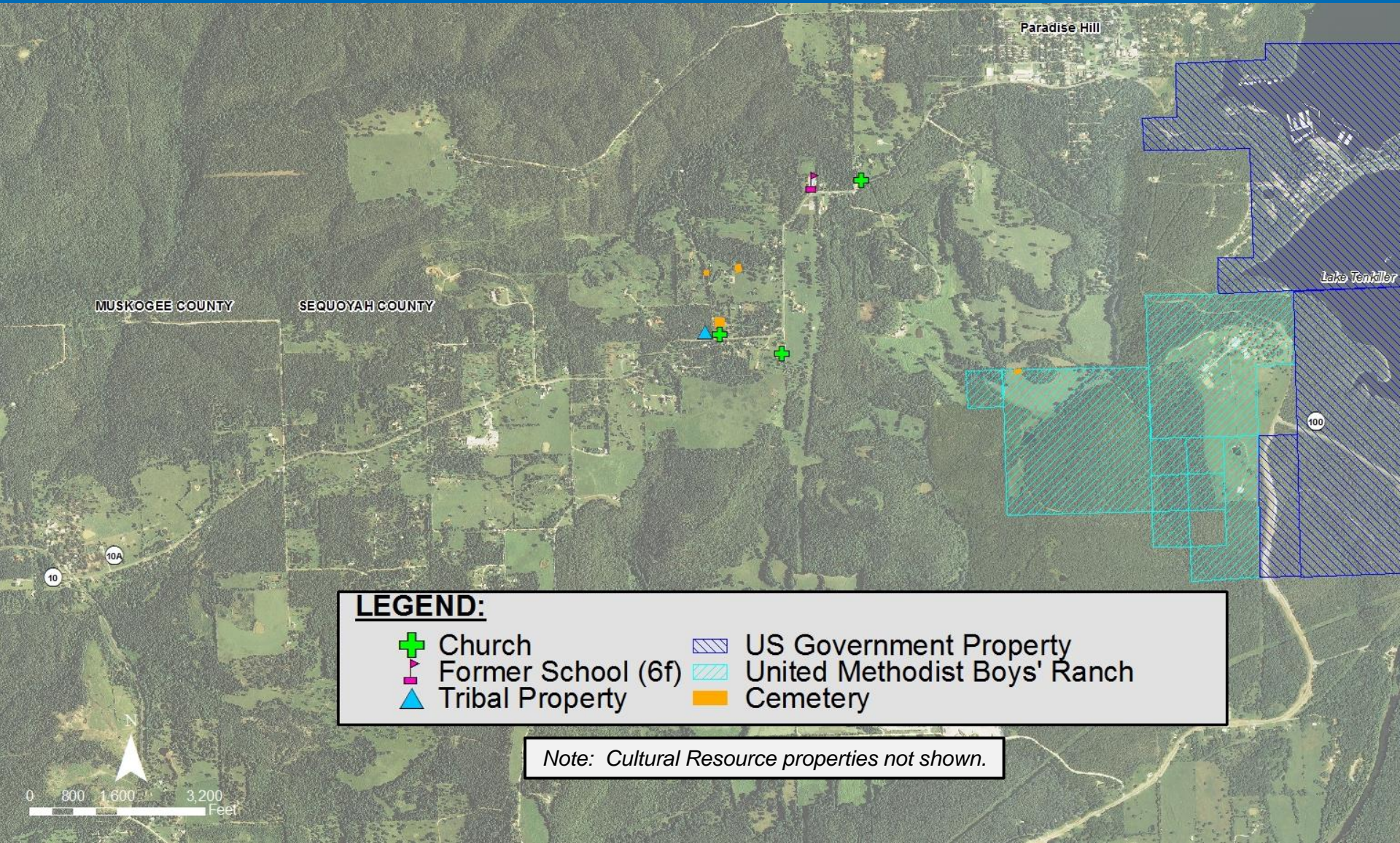


LEGEND:

- Water
- Electric
- Sub-station
- AT&T (Overhead)

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Unique Properties



LEGEND:

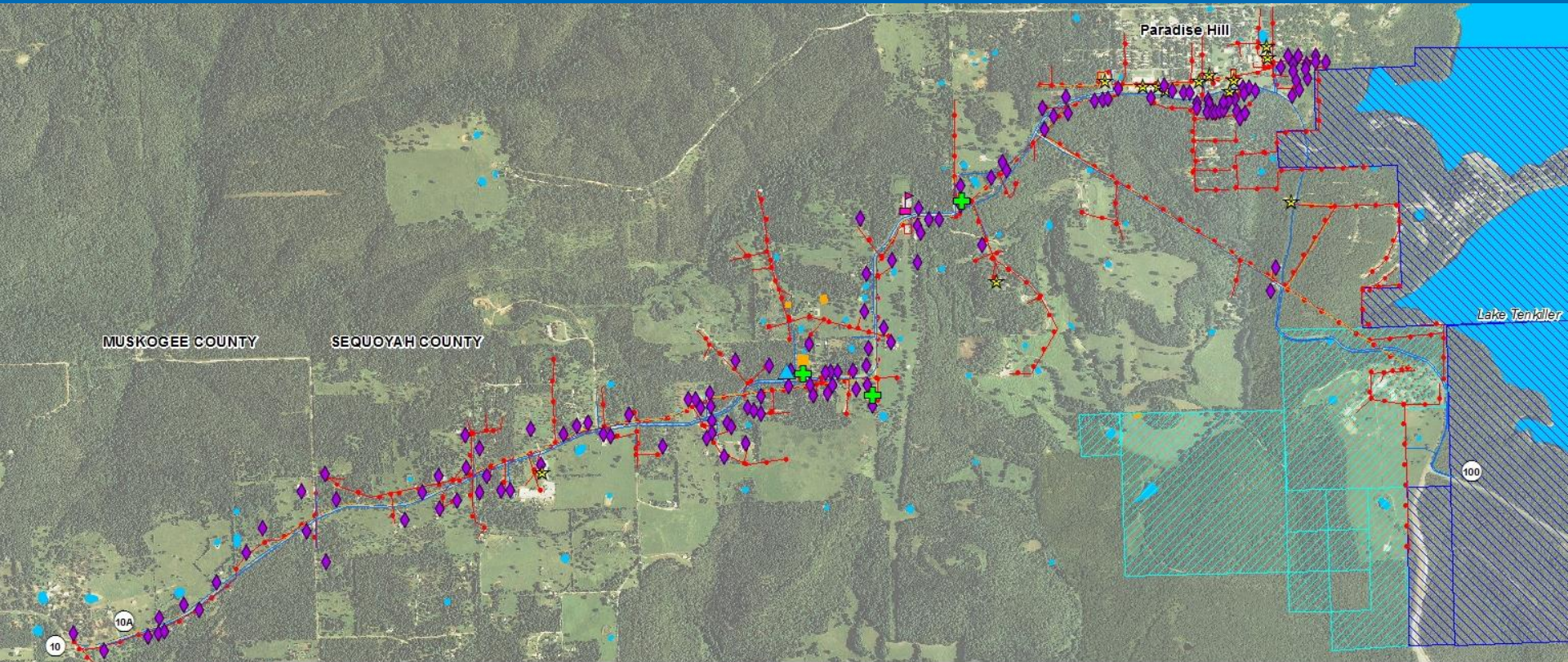
Church	US Government Property
Former School (6f)	United Methodist Boys' Ranch
Tribal Property	Cemetery

Note: Cultural Resource properties not shown.

0 800 1,600 3,200 Feet

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Composite Constraints Map



LEGEND:

- | | | |
|-----------------------|-------------------|---|
| ◆ Residence | — Water | ▨ US Government Property |
| ★ Commercial Property | ● Electric | ▧ United Methodist Boys' Ranch |
| ✚ Church | ▭ Sub-station | ■ Cemetery |
| ✚ Former School (6f) | — AT&T (Overhead) | ■ Wetlands and Waters |
| ▲ Tribal Property | | ■ Underground and Aboveground Storage Tanks |



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Proposed Project – Typical Section

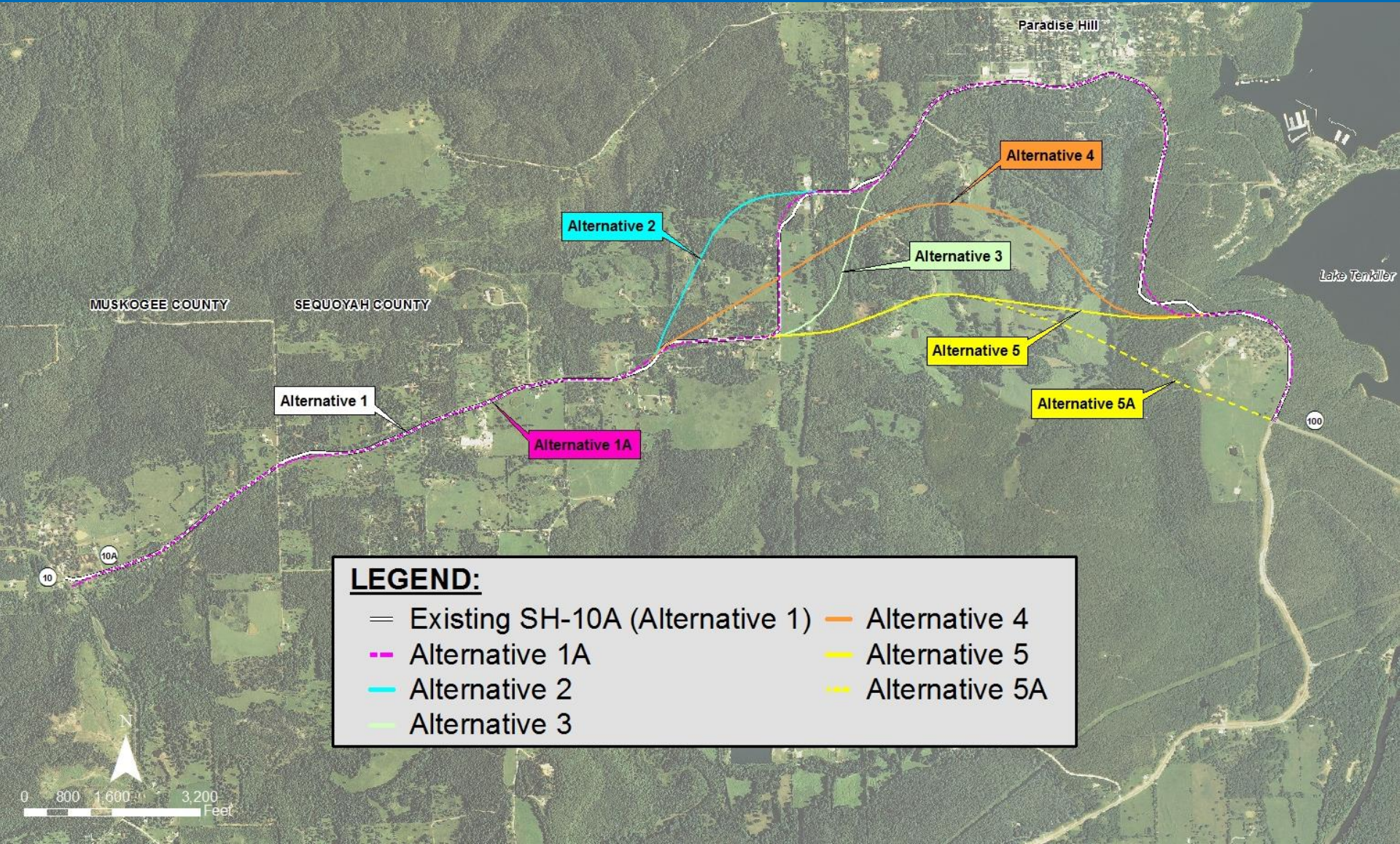


Proposed Improvements

- Two 12-foot lanes
- 8-foot paved shoulders
- 1:4 foreslopes
- 8-foot wide ditches
- 1:3 backslopes (maximum)
- Establish adequate clear recovery area

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Alternatives



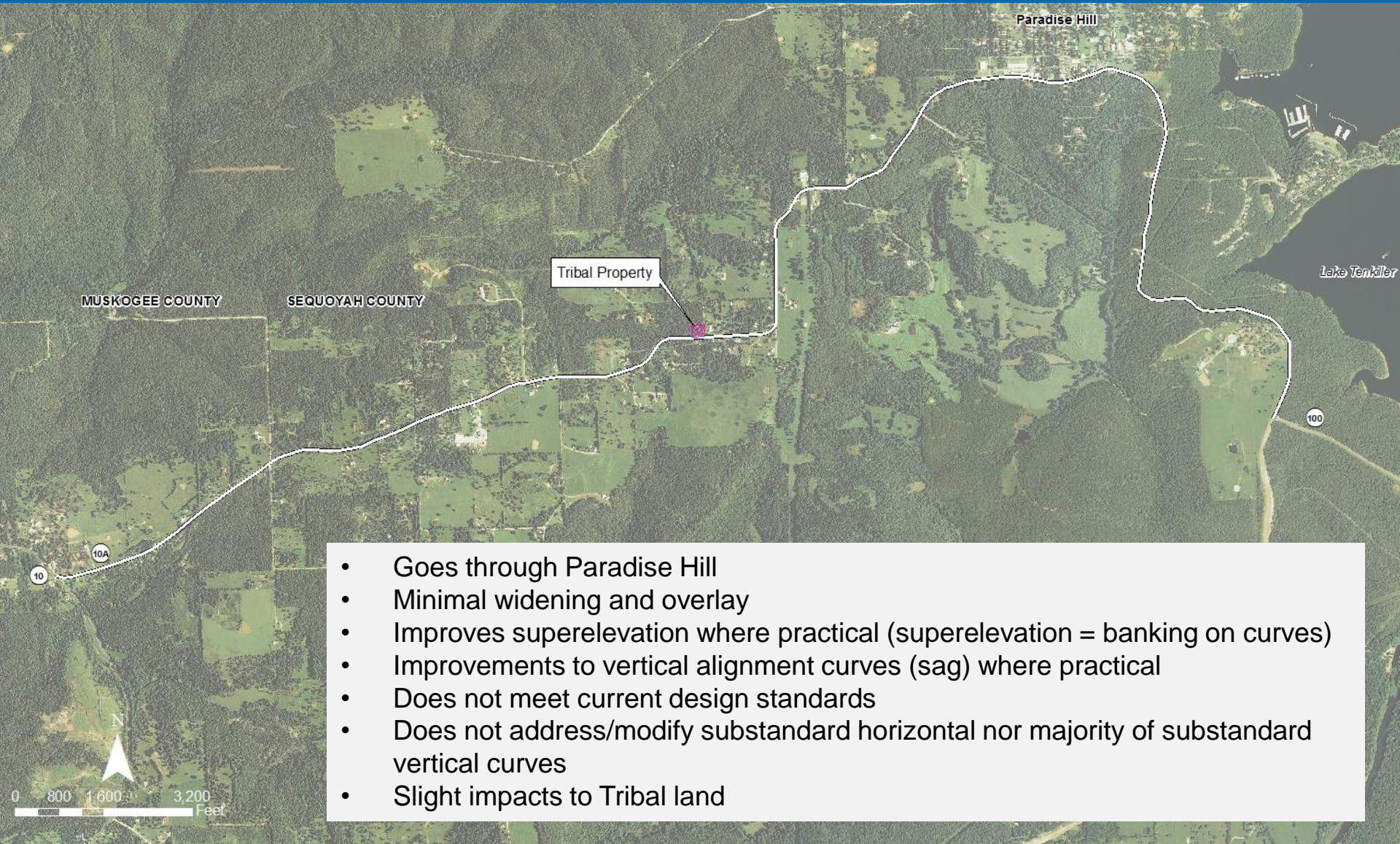
LEGEND:

— Existing SH-10A (Alternative 1)	— Alternative 4
- - - Alternative 1A	— Alternative 5
— Alternative 2	- - - Alternative 5A
— Alternative 3	



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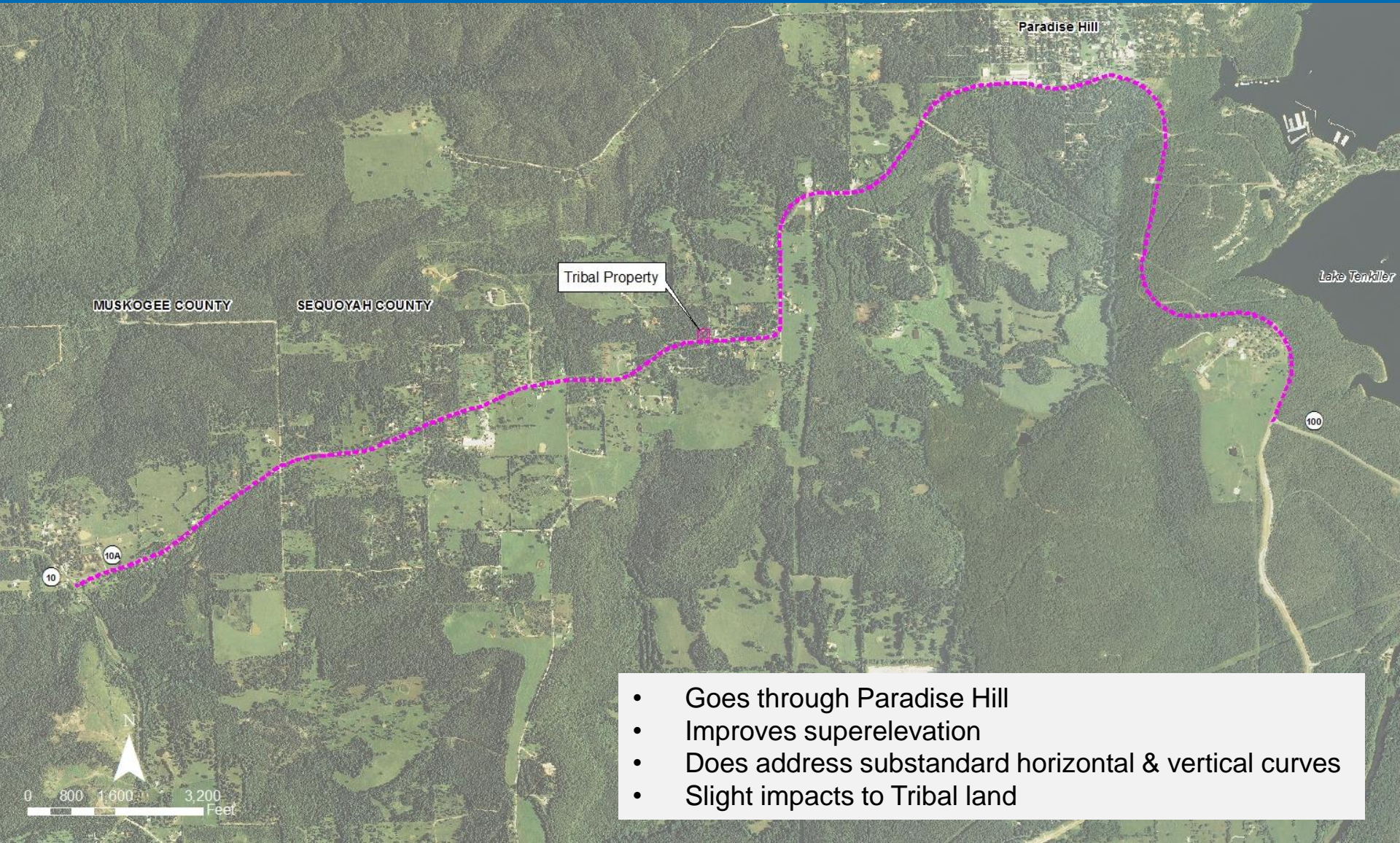
Alternative 1: On Existing Alignment



- Goes through Paradise Hill
- Minimal widening and overlay
- Improves superelevation where practical (superelevation = banking on curves)
- Improvements to vertical alignment curves (sag) where practical
- Does not meet current design standards
- Does not address/modify substandard horizontal nor majority of substandard vertical curves
- Slight impacts to Tribal land

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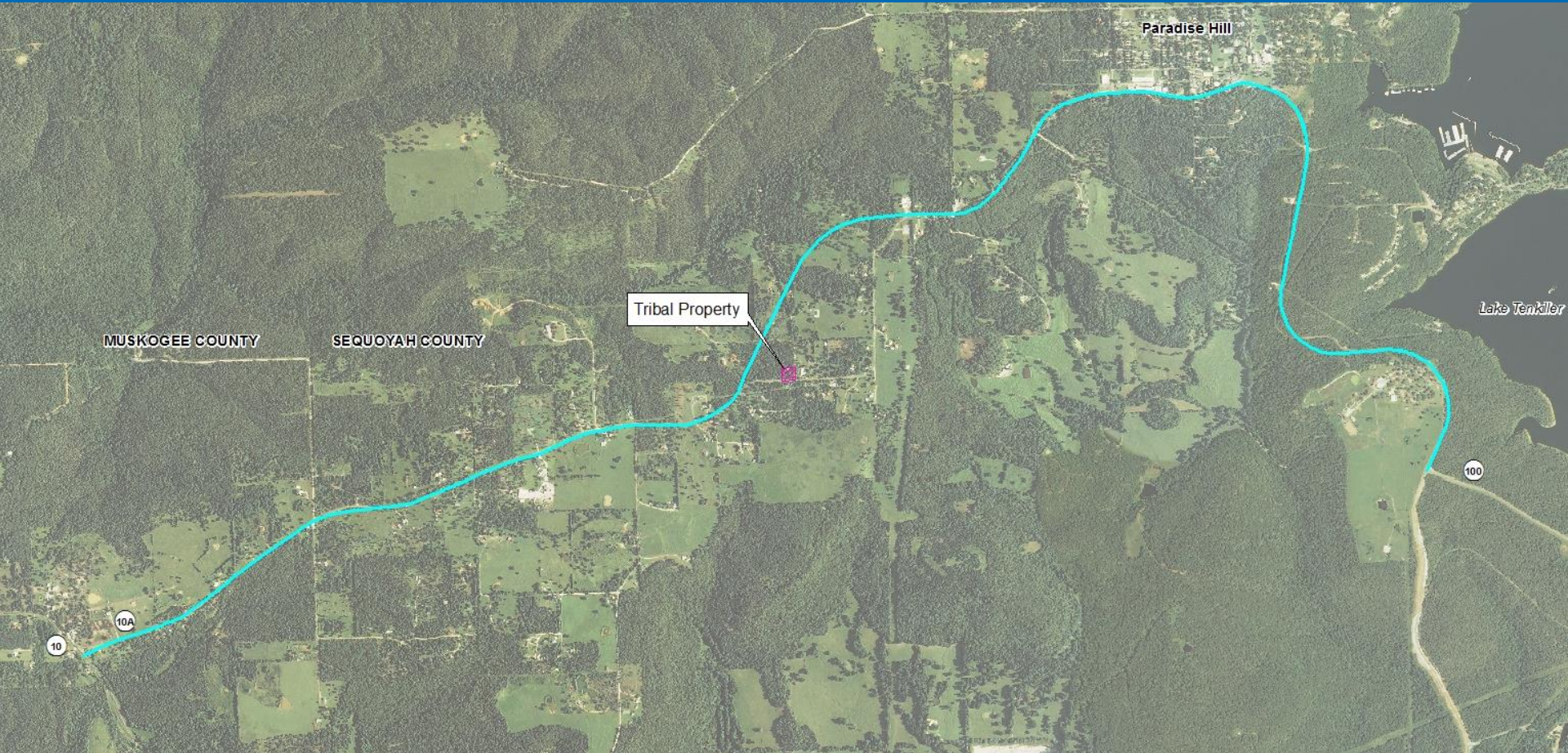
Alternative 1A: On or Near Existing Alignment



- Goes through Paradise Hill
- Improves superelevation
- Does address substandard horizontal & vertical curves
- Slight impacts to Tribal land

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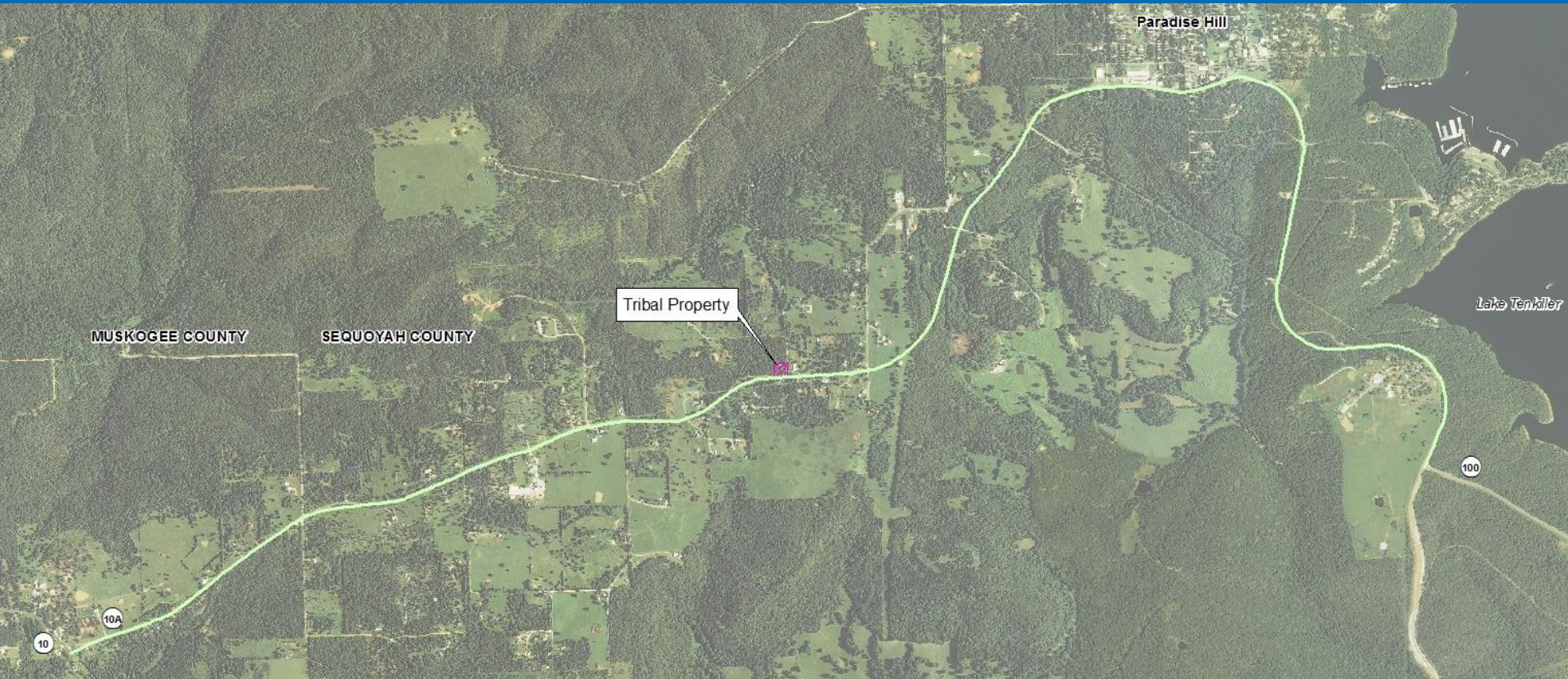
Alternative 2: West Offset



- Goes through Paradise Hill
- Offset alignment replaces 8 substandard horizontal curves & 15 substandard vertical curves
- No impacts to Tribal land

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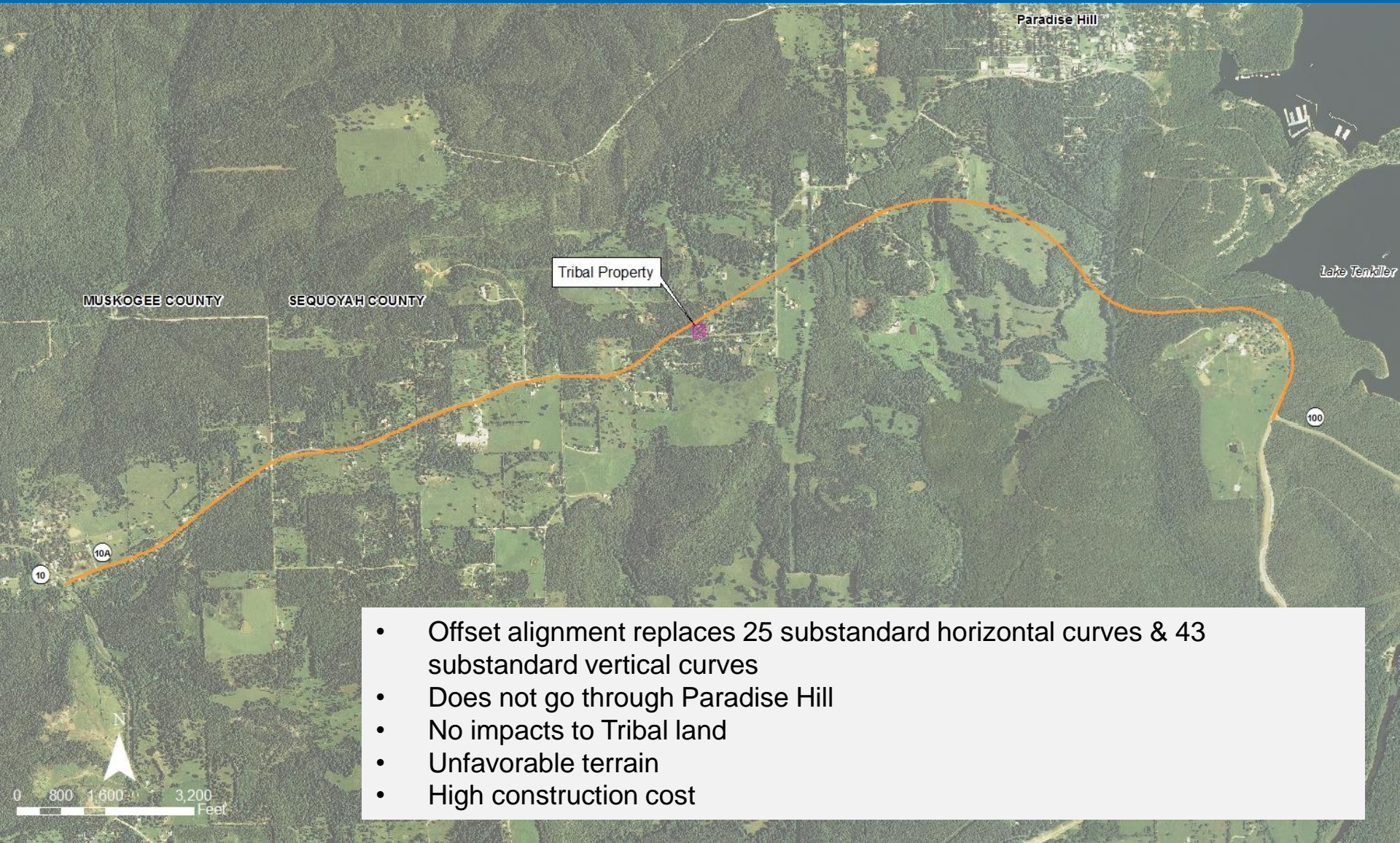
Alternative 3: East Offset



- Goes through Paradise Hill
- Offset alignment replaces 7 substandard horizontal curves & 12 substandard vertical curves
- Slight impacts to Tribal land
- Unfavorable terrain
- High construction cost

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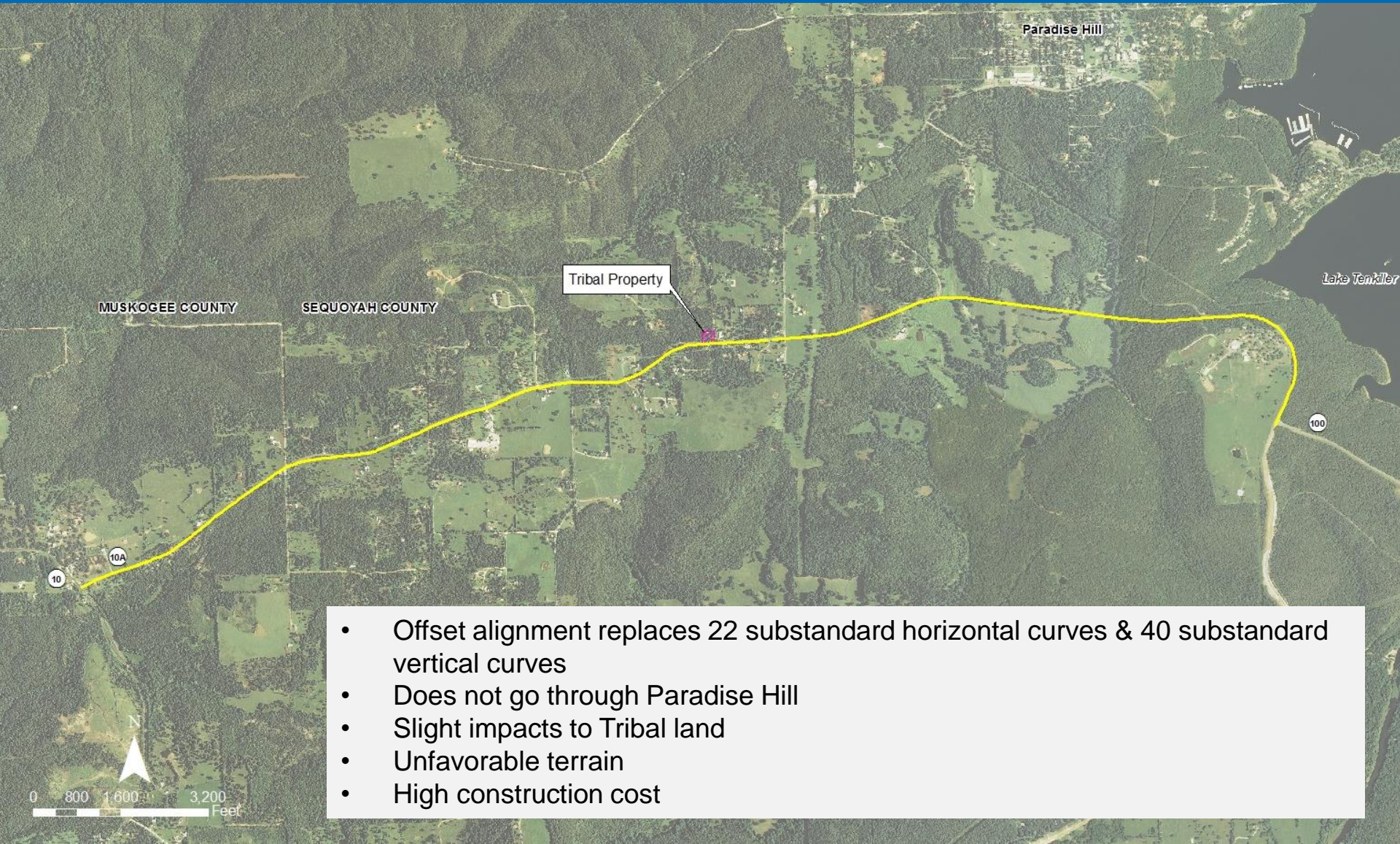
Alternative 4: South Offset



- Offset alignment replaces 25 substandard horizontal curves & 43 substandard vertical curves
- Does not go through Paradise Hill
- No impacts to Tribal land
- Unfavorable terrain
- High construction cost

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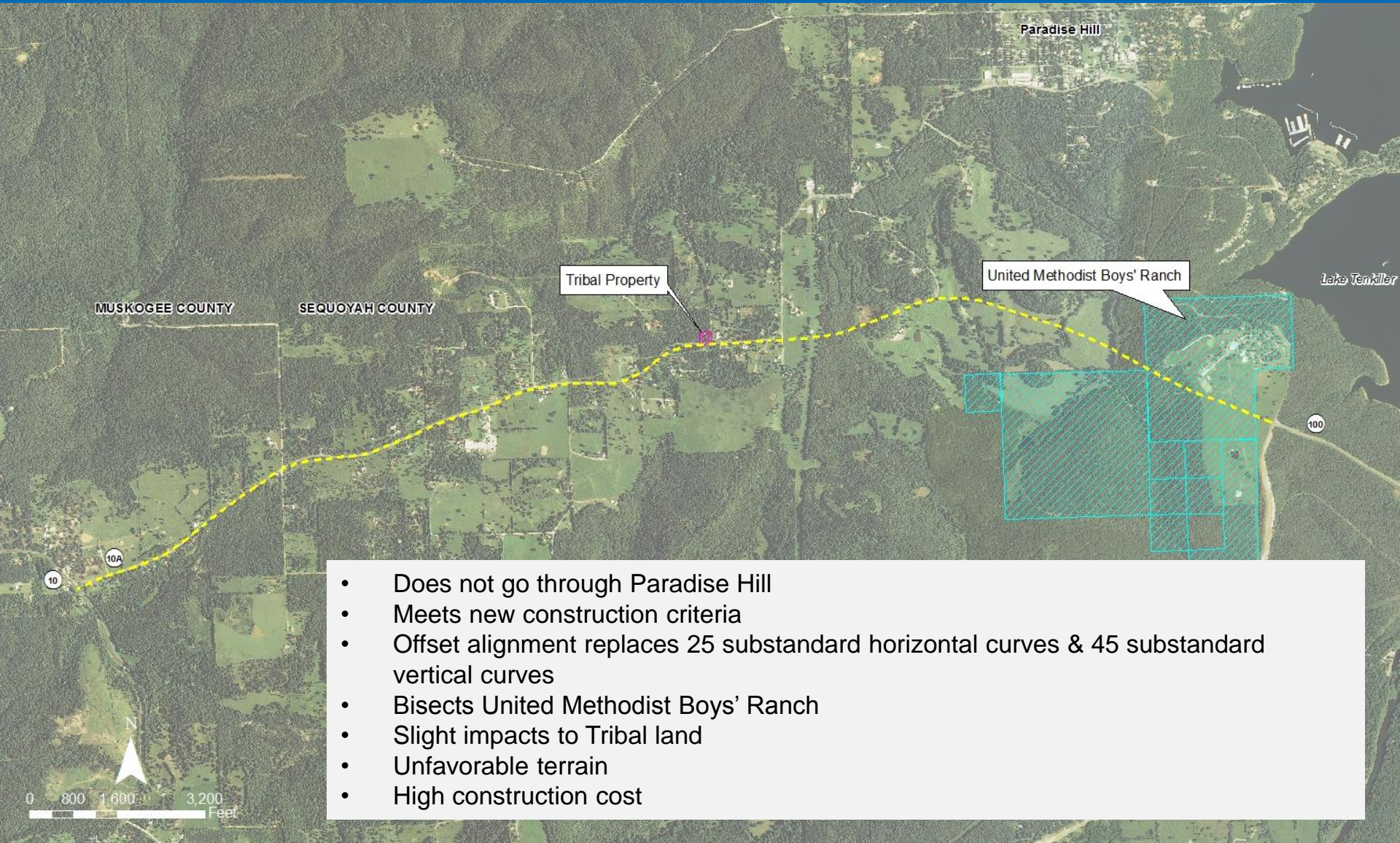
Alternative 5: Southernmost Offset



- Offset alignment replaces 22 substandard horizontal curves & 40 substandard vertical curves
- Does not go through Paradise Hill
- Slight impacts to Tribal land
- Unfavorable terrain
- High construction cost

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Alternative 5A: Southernmost Offset, Through Connection



- Does not go through Paradise Hill
- Meets new construction criteria
- Offset alignment replaces 25 substandard horizontal curves & 45 substandard vertical curves
- Bisects United Methodist Boys' Ranch
- Slight impacts to Tribal land
- Unfavorable terrain
- High construction cost

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Alternatives Comparison

Purpose & Need: Correct Deficiencies, Improve Safety, Accommodate Traffic



Project Component*	On or Near Existing Alignment				Offset Alignment		
	Alternative 1: On Existing	Alternative 1A: On or Near Existing	Alternative 2: West Offset	Alternative 3: East Offset	Alternative 4: South Offset	Alternative 5: Southernmost Offset	Alternative 5A: Southernmost Offset Through Connection to SH-100
Geometric Design	●	●	●	●	●	●	●
Shoulder Width	2' Paved	8' Paved	8' Paved	8' Paved	8' Paved	8' Paved	8' Paved
Design Exceptions Required	Numerous	8	7	7	3	3	1
Environmental Impacts	●	●	●	●	●	●	●
Cultural Resources	None Known	None Known	None Known	<1 Acre Potential Arch. Site	<2 Acre Potential Arch. Site	None Known	None Known
Potential AST/UST Impacts	2 Locations	2 Locations	2 Locations	2 Locations	1 Location	1 Location	1 Location
Wetlands	None	None	Approx. 0.1 Acre	Approx. 0.1 Acre	Approx. 0.7 Acre	Approx. 0.2 Acre	Approx. 0.2 Acre
Streams	Approx. 400 feet	Approx. 500 feet	Approx. 1,100 feet	Approx. 1,400 feet	Approx. 2,000 feet	Approx. 1,800 feet	Approx. 2,000 feet
Right-of-Way Impacts	●	●	●	●	●	●	●
Utility Costs (million)	Approx. \$1.8	Approx. \$1.7	Approx. \$1.5	Approx. \$1.6	Approx. \$1	Approx. \$1	Approx. \$0.8
Residential Relocations	<3	<3	<3	<3	≥3	<3	<3
Commercial Impacts	Minimal; No Structures	Minimal; No Structures	Minimal; No Structures	Minimal; No Structures	Minimal; No Structures	Minimal; No Structures	Minimal; No Structures
US Government	Approx. 2 Acre	Approx. 3 Acres	Approx. 3 Acres	Approx. 3 Acres	Approx. 1 Acre	Approx. 1 Acre	None
Tribal Property	0.13 Acre	0.10 Acre	None Known	0.10 Acre	None Known	0.10 Acre	0.10 Acre
United Methodist Boys' Ranch	Approx. 7 Acres	Approx. 9 Acres	Approx. 9 Acres	Approx. 9 Acres	Approx. 11 Acres	Approx. 11 Acres	Approx. 11 Acres
Cost	●	●	●	●	●	●	●
Total Cost (million)	Approx. \$12	Approx. \$18	Approx. \$18	Approx. \$25	Approx. \$24	Approx. \$26	Approx. \$28
Highway Access to Paradise Hill	●	●	●	●	●	●	●
Through Traffic Mobility	●	●	●	●	●	●	●
Constructability	●	●	●	●	●	●	●
Meets Purpose & Need?	●	●	●	●	●	●	●

*All impact estimates are preliminary only and subject to change upon completion of survey and further design.

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Alternative Analysis



- Eliminate Alternative 1: only minimal improvements
- Eliminate Alternatives 4, 5, and 5A:
 - Alignments offset south of Paradise Hill
 - Do not provide highway access to Paradise Hill destinations
- Alternatives 1A, 2, and 3:
 - Eliminate Alternative 3: most cultural resource impacts and most expensive
- Alternatives 1A and 2:
 - Essentially same alignment, but Alternative 2 includes a short offset segment
 - Alternative 2 has no known tribal land impacts, is more constructible, and better meets current design criteria than Alternative 1A



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Preferred Alternative



Alternative 2: West Offset

- Disadvantage:
 - Some residential impacts
- Advantages:
 - Highway access to Paradise Hill
 - Good constructability and complies with design criteria
 - No known impacts to cultural resources
 - Comparable wetlands/waters impacts to Alternatives 3, 4, 5, & 5A
 - No Tribal land needed
 - Lower total project cost than Alternatives 3, 4, 5, & 5A
 - Fewer utility conflicts than Alternatives 1, 1A, & 3

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Preferred Alternative 2: West Offset



- Goes through Paradise Hill
- Offset alignment meets new construction criteria
- Offset segment replaces 8 substandard horizontal curves & 15 substandard vertical curves
- No impacts to Tribal land

MUSKOGEE COUNTY

SEQUOYAH COUNTY

Paradise Hill

Lake Tenkiller

100

LEGEND:

- | | | |
|-----------------------|-------------------|---|
| ◆ Residence | — Water | ▨ US Government Property |
| ★ Commercial Property | — Electric | ▨ United Methodist Boys' Ranch |
| ✚ Church | ▭ Sub-station | ■ Cemetery |
| ✚ Former School (6f) | — AT&T (Overhead) | ■ Wetlands and Waters |
| ▲ Tribal Property | — Alternative 2 | ■ Underground and Aboveground Storage Tanks |

0 800 1,600 3,200 Feet

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Public Participation Program



- Stakeholder Meeting held October 18, 2016
 - Stakeholders included Agencies, Elected Officials, and Businesses
 - Received 5 written comments and/or concerns
 - General support of the Preferred Alternative
- Tonight's Open House
 - Comments due by February 14, 2017
 - Review all comments
- Complete design report

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What Happens Next?



- Complete design report
- Complete Environmental Studies, Survey, and Design Plans
- Public Outreach after Environmental Studies Complete
- Begin Right-of-Way Acquisition (Year 2019)
- Begin Utilities Relocation (Year 2019)
- Begin Construction (Year 2021)

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Submit Your Comments



- Leave your written comments with us tonight.
- By mail:
Oklahoma Department of Transportation
Environmental Programs Division
200 N. E. 21st Street
Oklahoma City, OK 73105
- By fax:
(405) 522-5193
- By website:
www.odot.org/publicmeetings
- By Email:
odot-environment@odot.org
- **Please submit your comments by February 14, 2017.**



State Highway 10A Improvements



Preferred Alternative, New SH-10A Alignment

Existing SH-10A Alignment

MUSKOGEE COUNTY

SEQUOYAH COUNTY

Paradise Hill

Lake Tenkiller

100

10A

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Thank you!