Wycliffe Avenue Reconstruction Project

Tuesday, December 17, 2024

THE TOWN OF Highland Park TEXAS

An American Community Making a Difference

Opening Remarks

December 17, 2024

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Agenda

- Opening Remarks
- Team Introductions
- Existing Challenges
- Project/Technical Goals
- Solution Evaluation
- Project Considerations
- Q&A



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Existing Challenges

- Existing vertical spillway and buried culverts have insufficient capacity for everyday rain events
- Periodic flooding over Wycliffe Avenue
  - 6 overtopping events since August 2022
  - Barricading triggered 34 times
  - 6 minutes from barricades triggered to roadway overtopping in 100-year storm
- Capacity is significantly less than local and state standards



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Existing Challenges

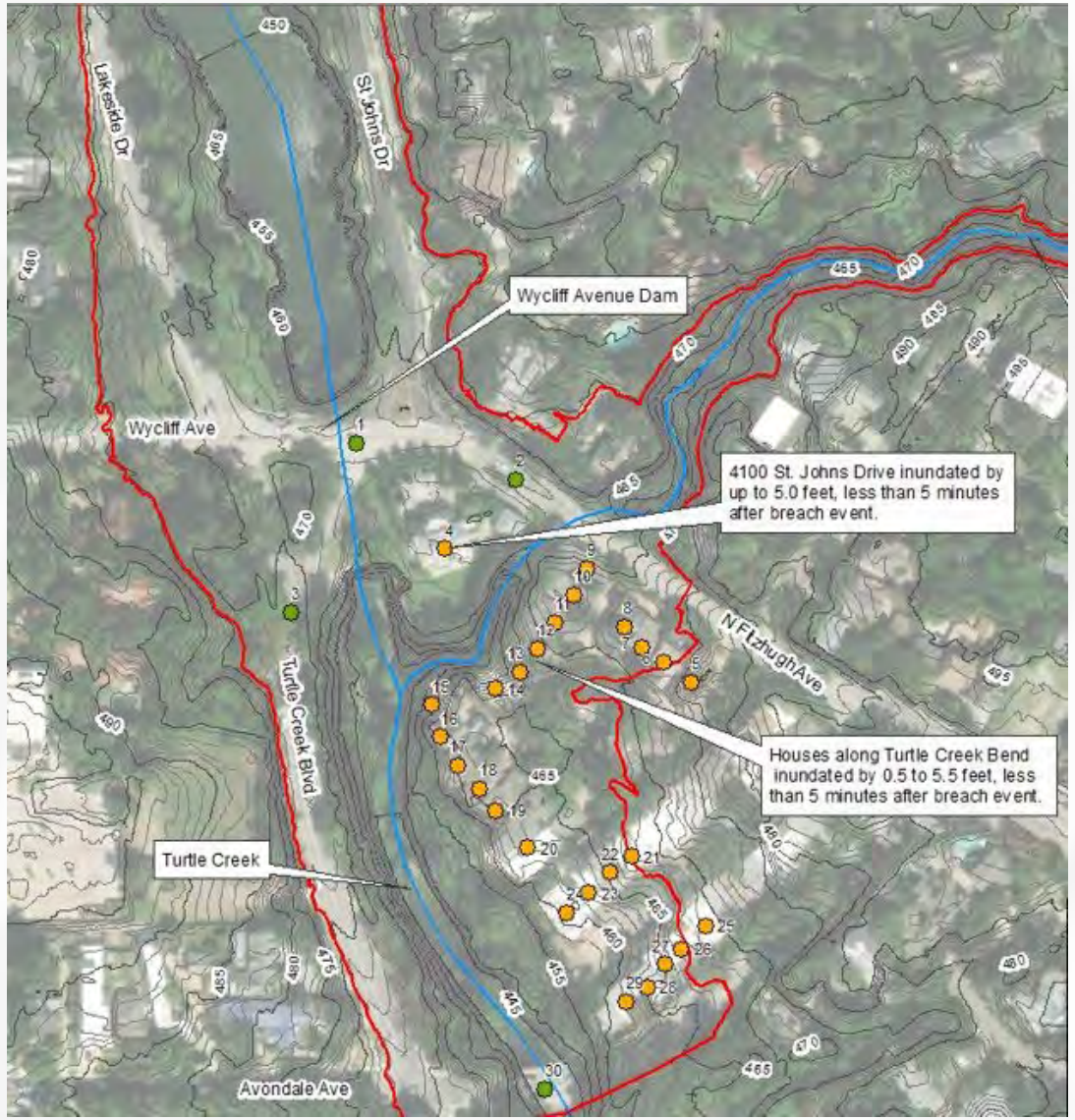
Wycliffe Avenue is on the National Inventory of Dams.

Dam Hazard Classification

Low Hazard	No loss of human life is expected
Significant Hazard	No loss of human life is expected • 1 to 6 lives • 1 or 2 habitable structures in the inundation area
High Hazard	Loss of human life is expected

Existing Challenges

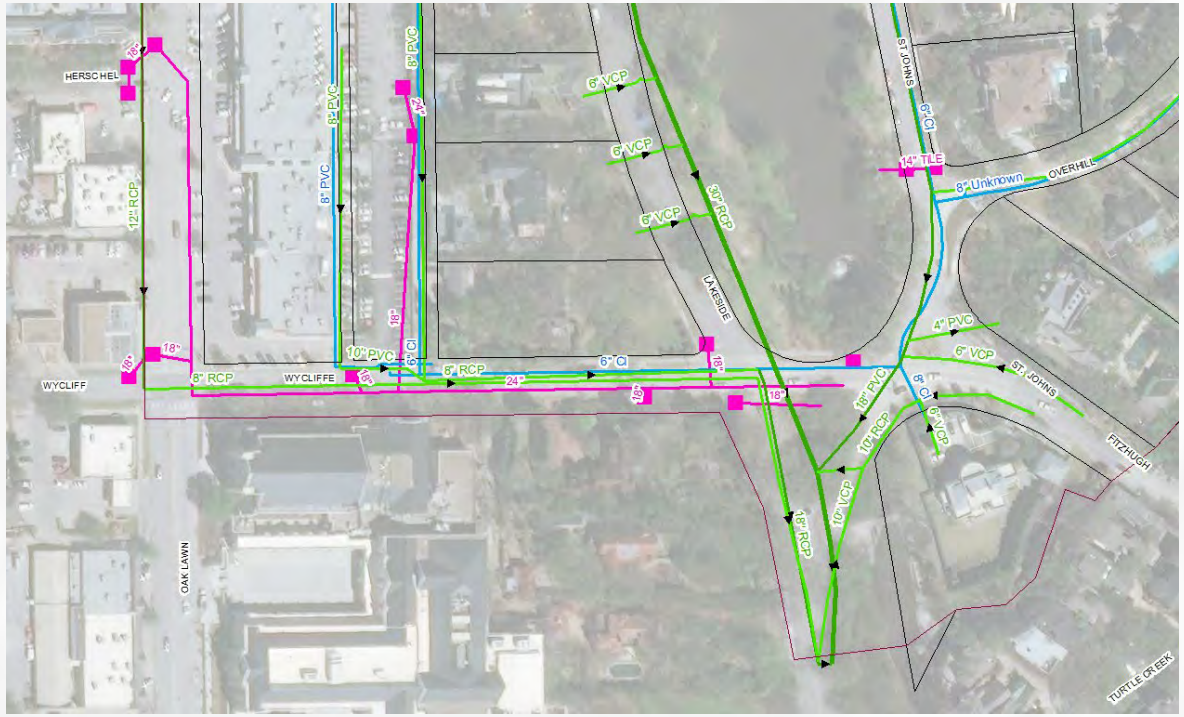
- Wycliffe Avenue is classified as a high-hazard structure by the Texas Commission on Environmental Quality (TCEQ)
- Downstream homes/roadways would be affected in dam breach



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Existing Challenges

- Pavement is in poor condition
- Outdated Highland Park and Dallas utilities in the project area
  - Water
  - Sanitary sewer (including 30-inch interceptor)
  - Storm



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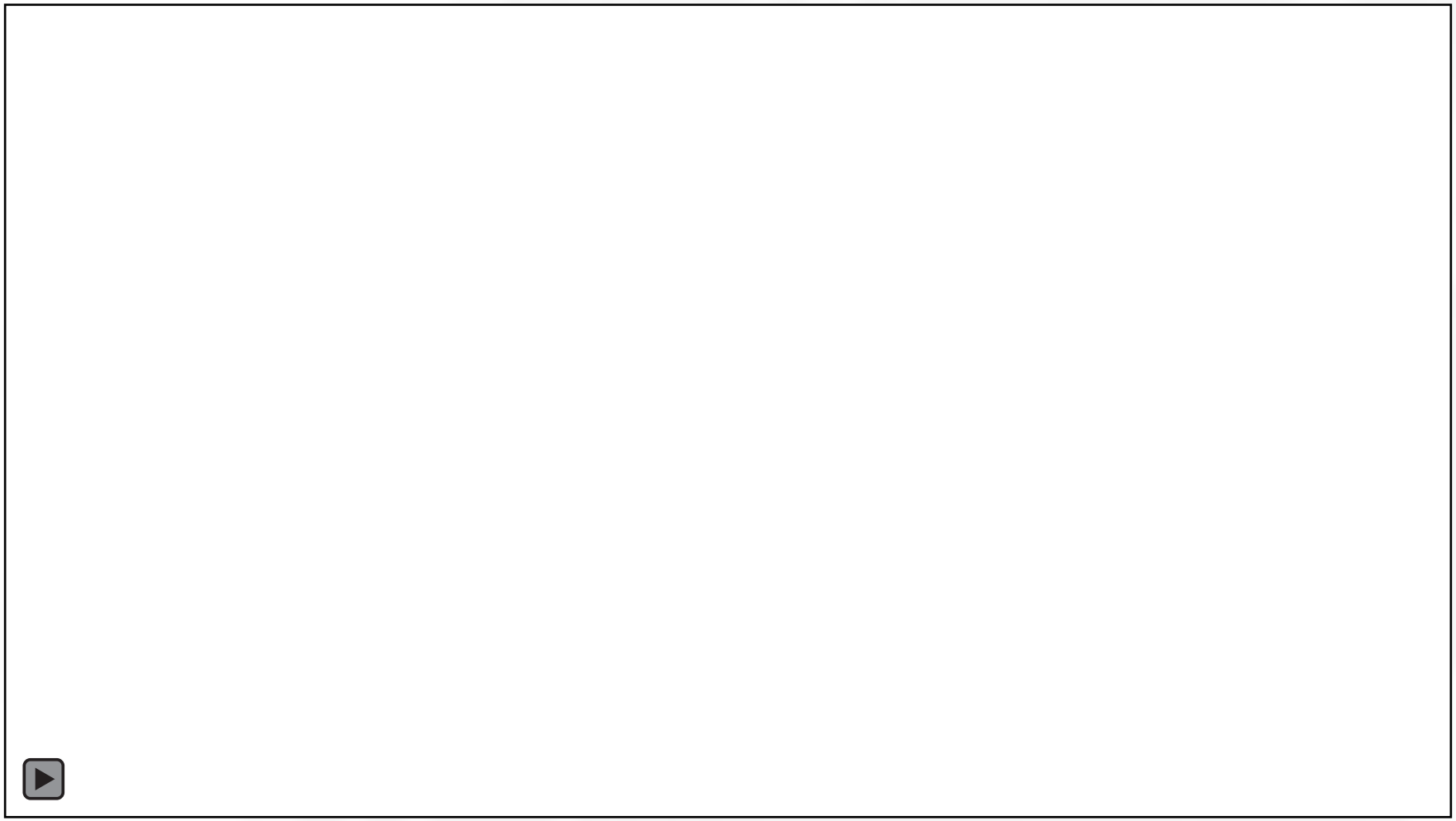
Existing Challenges

- Limits of the floodplain
- FEMA requirements
- USACE requirements
- City of Dallas Tributary
- Downstream properties

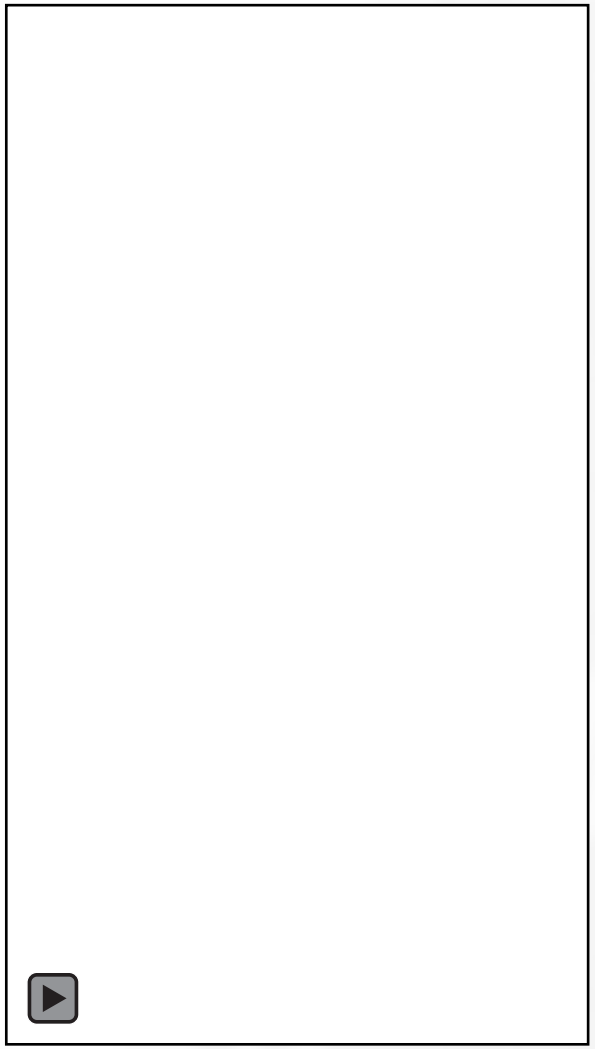


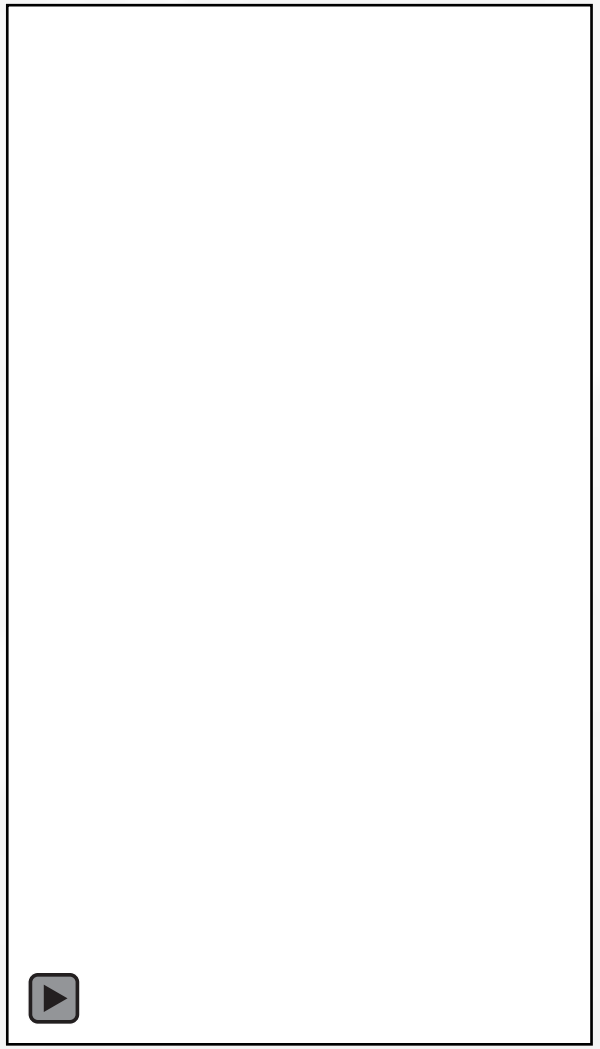
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Existing Challenges



Existing Challenges





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Project Goal

The goal of this project is to improve public safety.

Technical Goals

Overtopping	Pass the 100-year storm event without overtopping Wycliffe Avenue
Environmental Regulation	Conforms with Nationwide Permit
Water Level	Maintain existing water level in Connor Lake
Floodplain	Remove structures and reduce limits
Dam Hazard Classification	Reduce dam classification from high to low hazard

Optimal Solution: 143’ Weir and Bridge



Modifications	
Roadway Elevation	Raise by 2.5’, construct bridge
Upstream Channel	Standpipe removed, construct weir
Downstream Channel	Widened, maintain flowline

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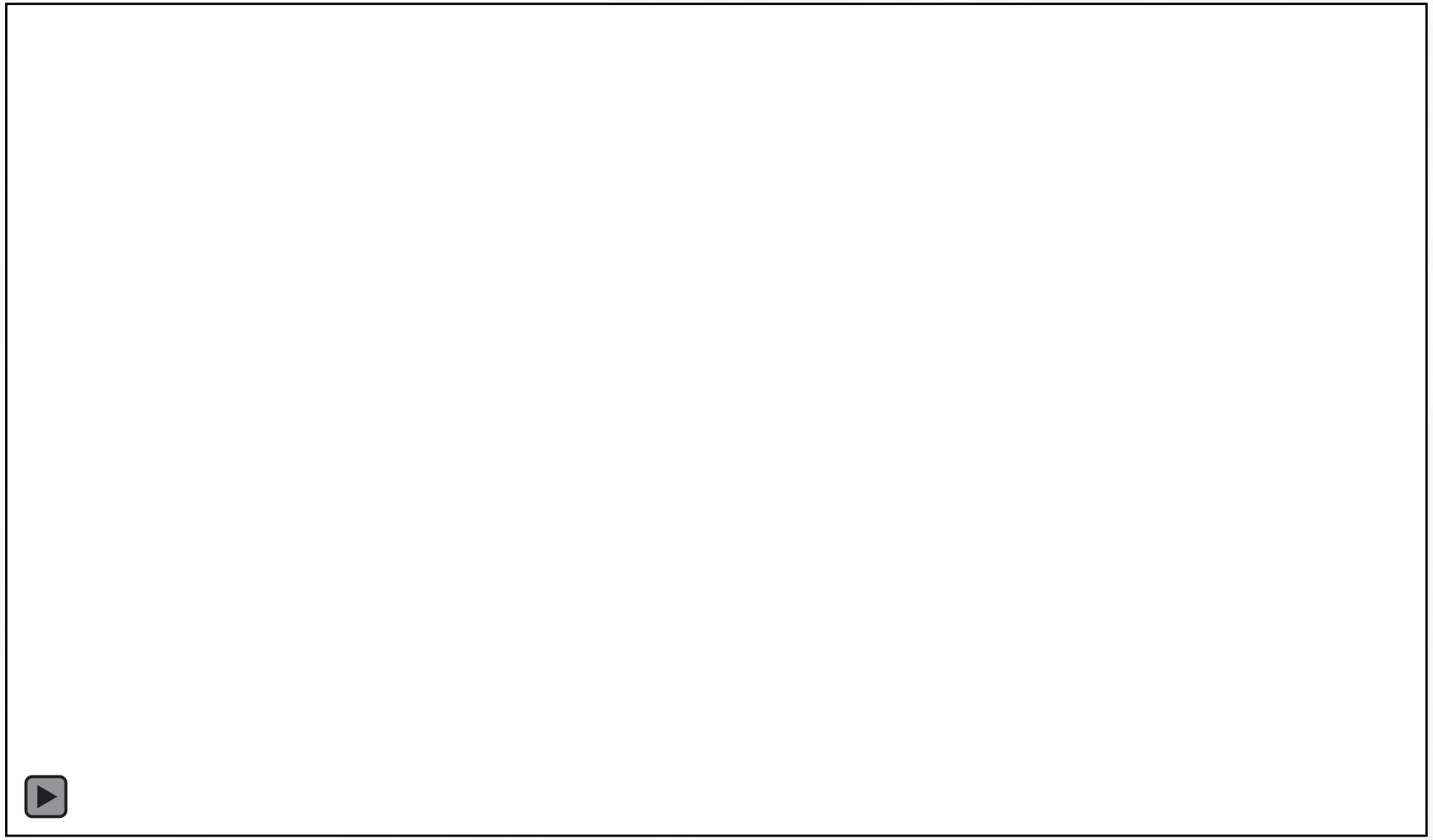
Optimal Solution: 143’ Weir and Bridge



Goal	Met?
Overtopping	✓
Environmental Regulation	✓
Water Level	✓
Floodplain	✓
Dam Hazard Classification	✓

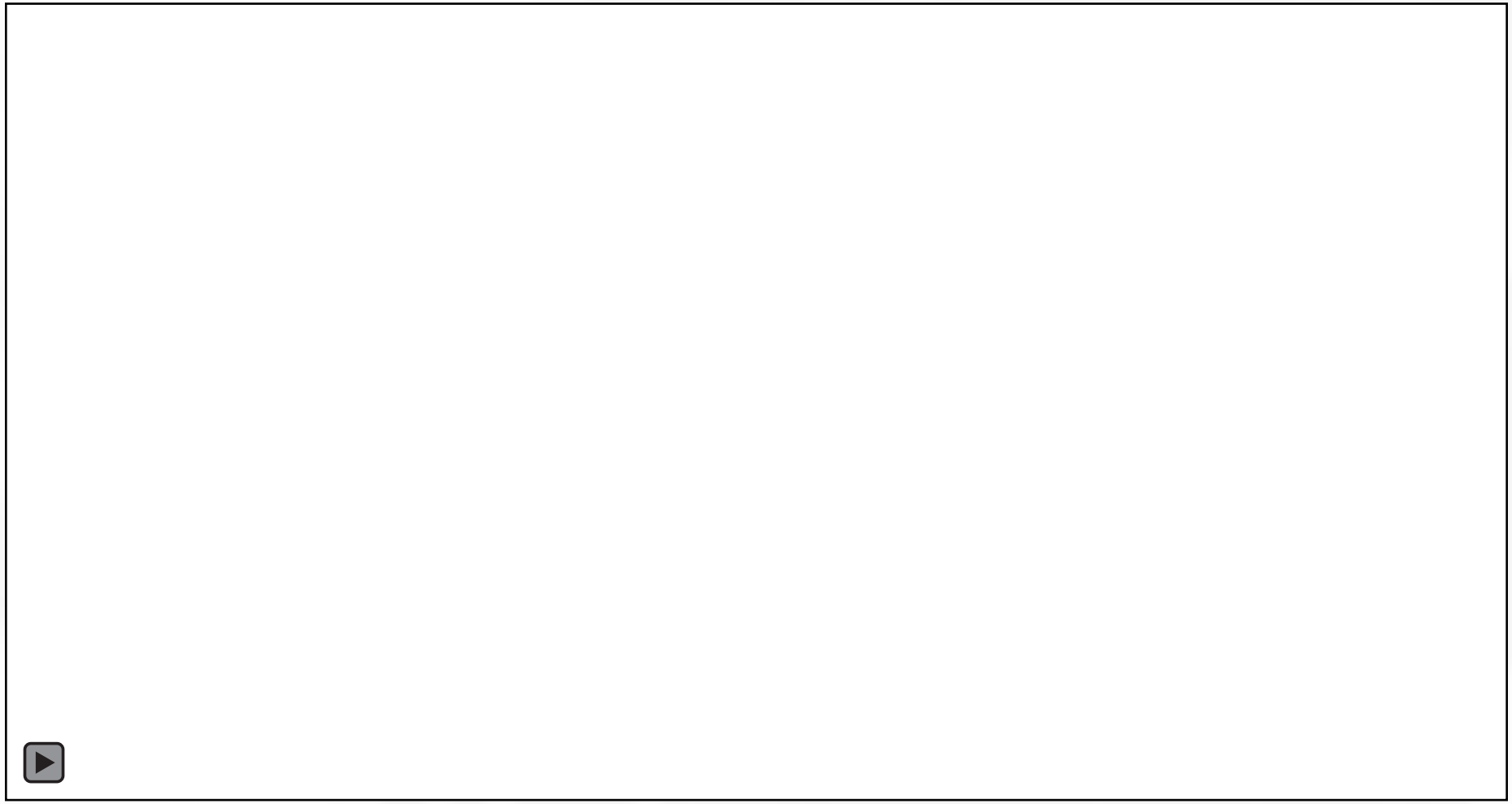
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Existing Conditions Modeling



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Proposed Conditions Modeling





Drone View of Upstream Channel



Drone View of Downstream Channel

Standpipe and Box Culverts at Existing Roadway Elevation



Modifications	
Roadway Elevation	No rise, install box culverts
Upstream Channel	Standpipe removed and replaced
Downstream Channel	Widened, maintain flowline

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Standpipe and Box Culverts at Existing Roadway Elevation



Goal	Met?
Overtopping	X
Regulatory	✓
Water Level	✓
Floodplain	X
Dam Hazard Classification	X

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Standpipe and Box Culverts, Roadway Raised 4’



Modifications	
Roadway Elevation	Raise 4’, install box culverts
Upstream Channel	Standpipe removed and replaced
Downstream Channel	Widened, maintain flowline

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Standpipe and Box Culverts, Roadway Raised 4’



Goal	Met?
Overtopping	✓
Regulatory	✓
Water Level	✓
Floodplain	✓
Dam Hazard Classification	X

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418’ Weir and Bridge at Existing Roadway Elevation



Modifications	
Roadway Elevation	No rise, construct bridge
Upstream Channel	Standpipe removed, construct weir
Downstream Channel	Widened, maintain flowline

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418’ Weir and Bridge at Existing Roadway Elevation



Goal	Met?
Overtopping	X
Regulatory	✓
Water Level	✓
Floodplain	✓
Dam Hazard Classification	X

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143’ Weir and Bridge with Lowered Downstream Flowline



Modifications	
Roadway Elevation	No rise, construct bridge
Upstream Channel	Standpipe removed, construct weir
Downstream Channel	Widened, lower flowline

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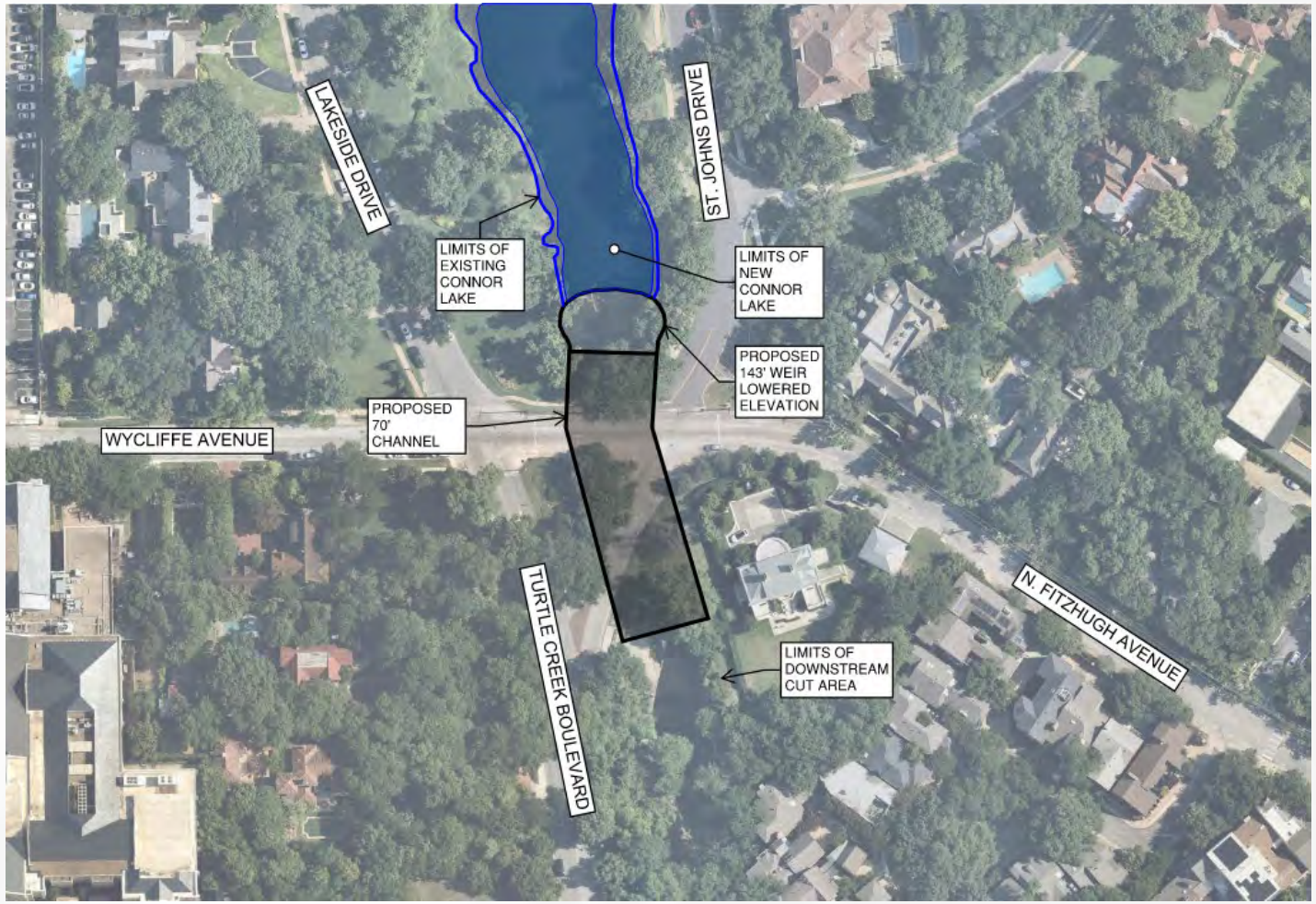
143’ Weir and Bridge with Lowered Downstream Flowline



Goal	Met?
Overtopping	X
Regulatory	✓
Water Level	✓
Floodplain	X
Dam Hazard Classification	✓

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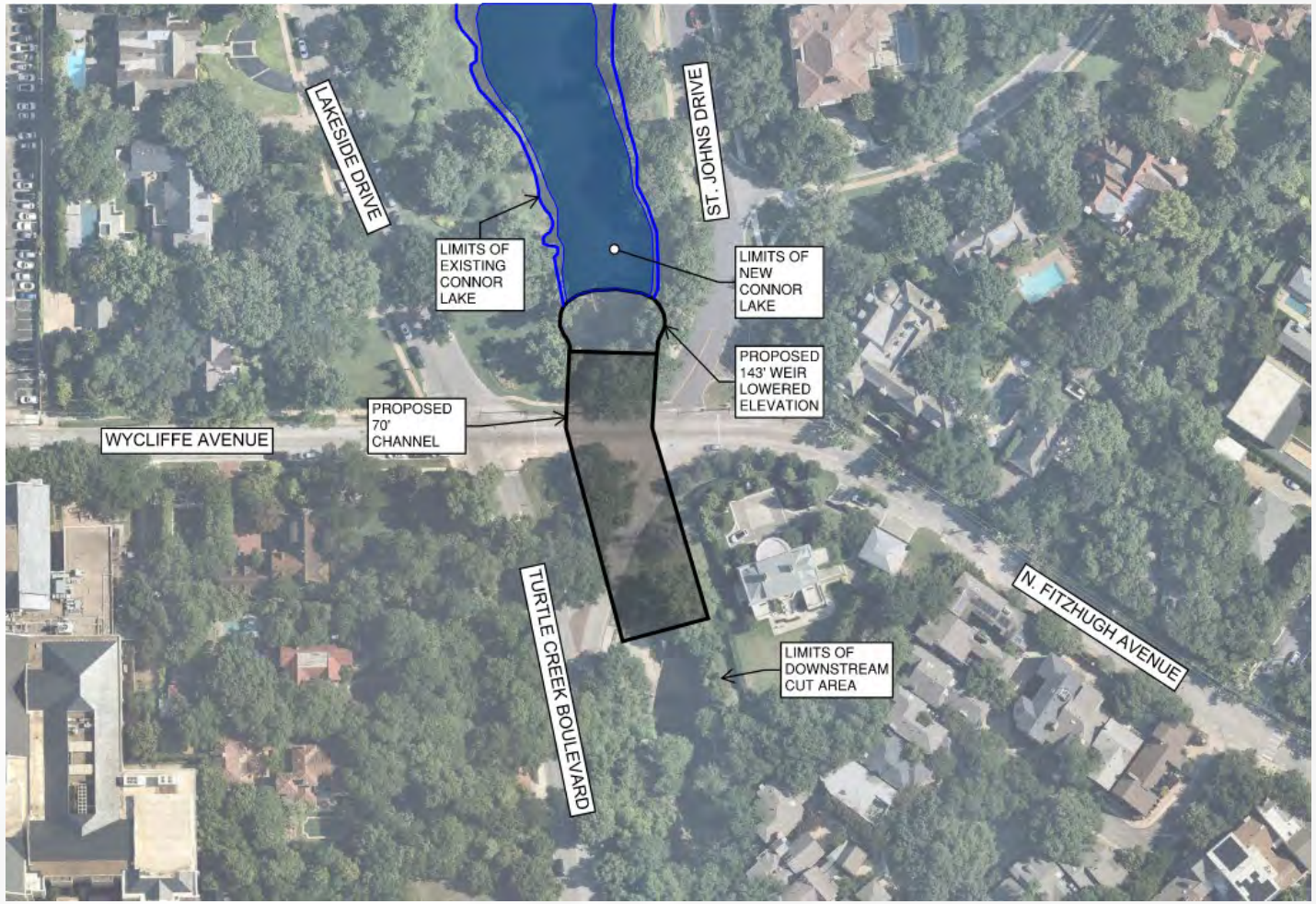
143’ Weir and Bridge with Lowered Lake Elevation



Modifications	
Roadway Elevation	No rise, construct bridge
Upstream Channel	Standpipe removed, construct weir, lower upstream water level
Downstream Channel	Widened, maintain flowline

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143’ Weir and Bridge with Lowered Lake Elevation



Goal	Met?
Overtopping	✓
Regulatory	X
Water Level	X
Floodplain	✓
Dam Hazard Classification	✓

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Optimal Solution Revisited

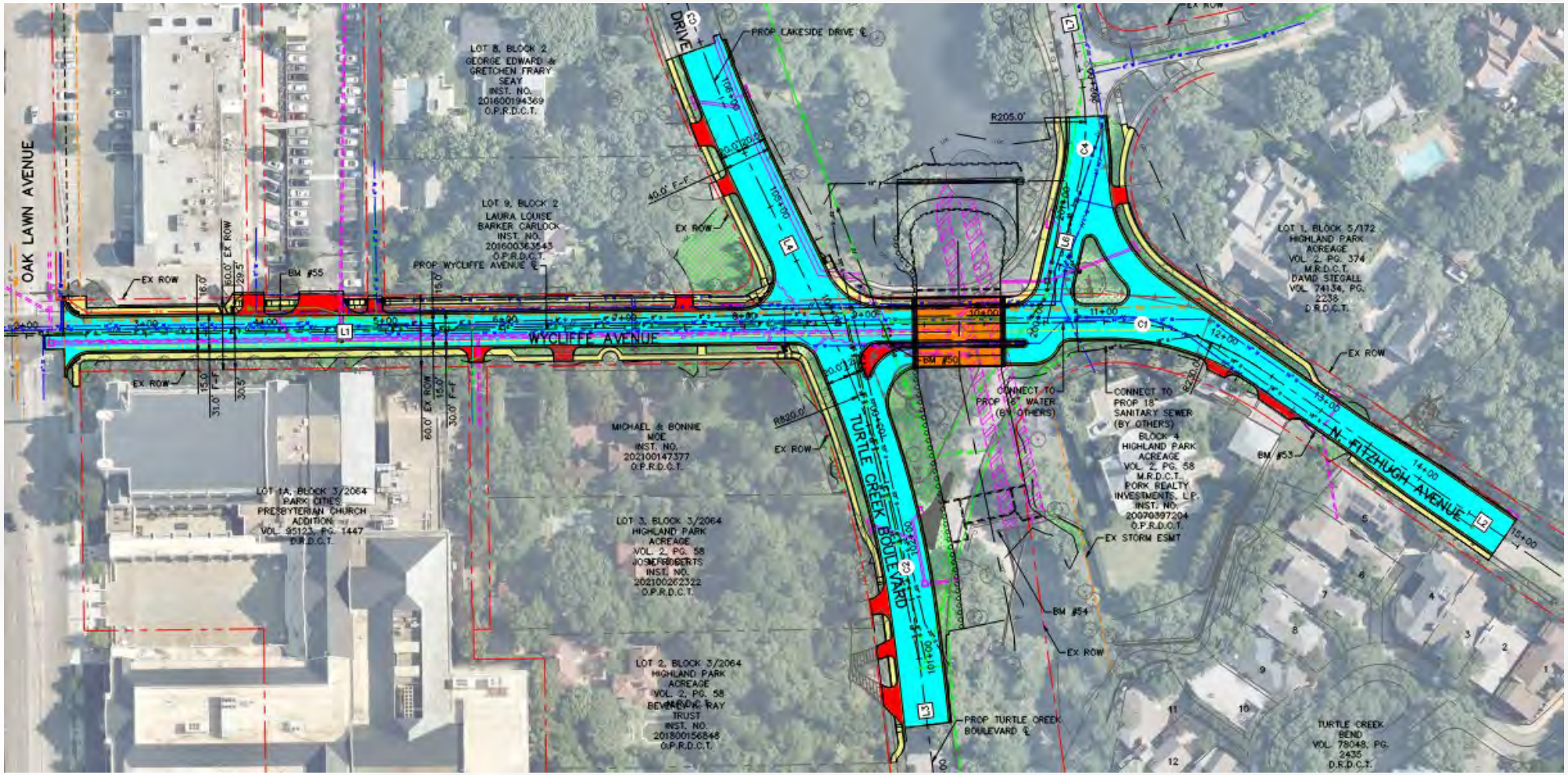
Goal	Met?
Increases public safety	✓
Pass the 100-year storm event without overtopping Wycliffe Avenue	✓
Meet regulatory requirements	✓
Maintain existing water level at Connor Lake	✓
Reduce floodplain limits	✓
Reduce dam hazard classification from high to low hazard	✓

Project Considerations

- Structural aesthetics
- Enhanced landscaping and pedestrian facilities
- Minimize impacts to adjacent properties
- Land constraints
- Roadway Geometry
- Traffic Flow
- Constructability
- Cost



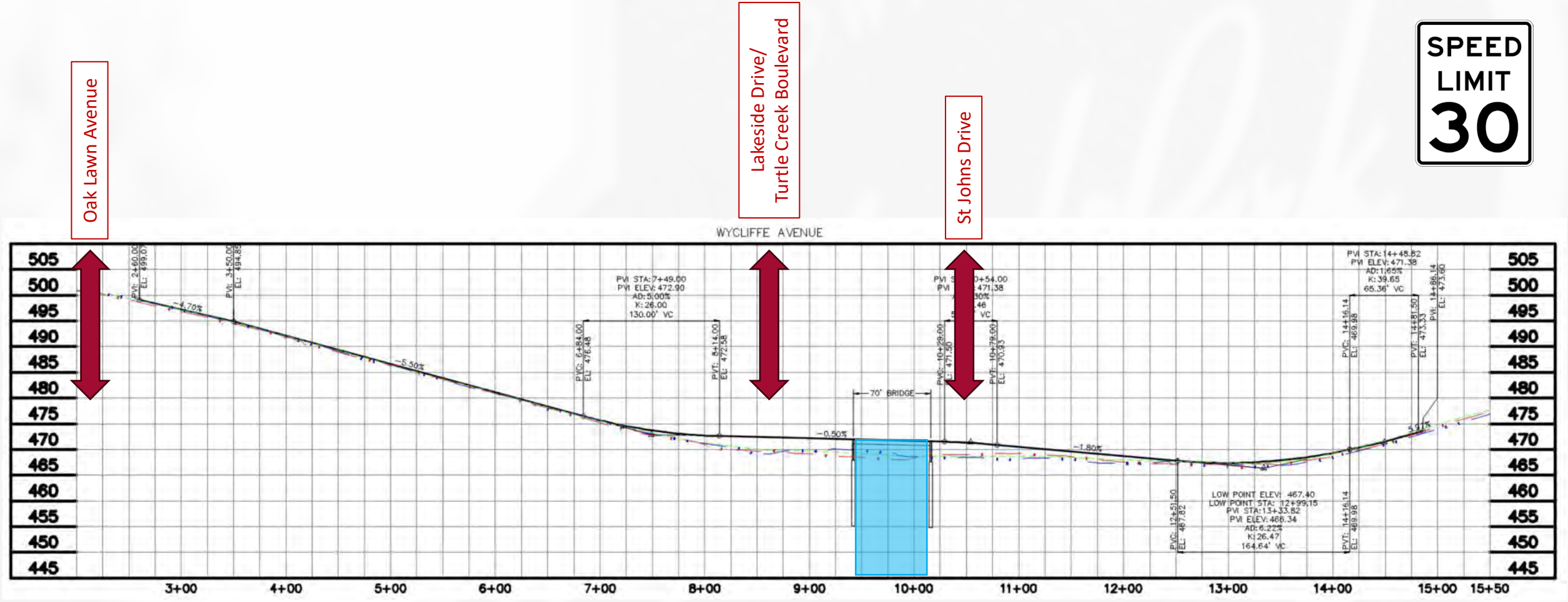
Roadway Geometry





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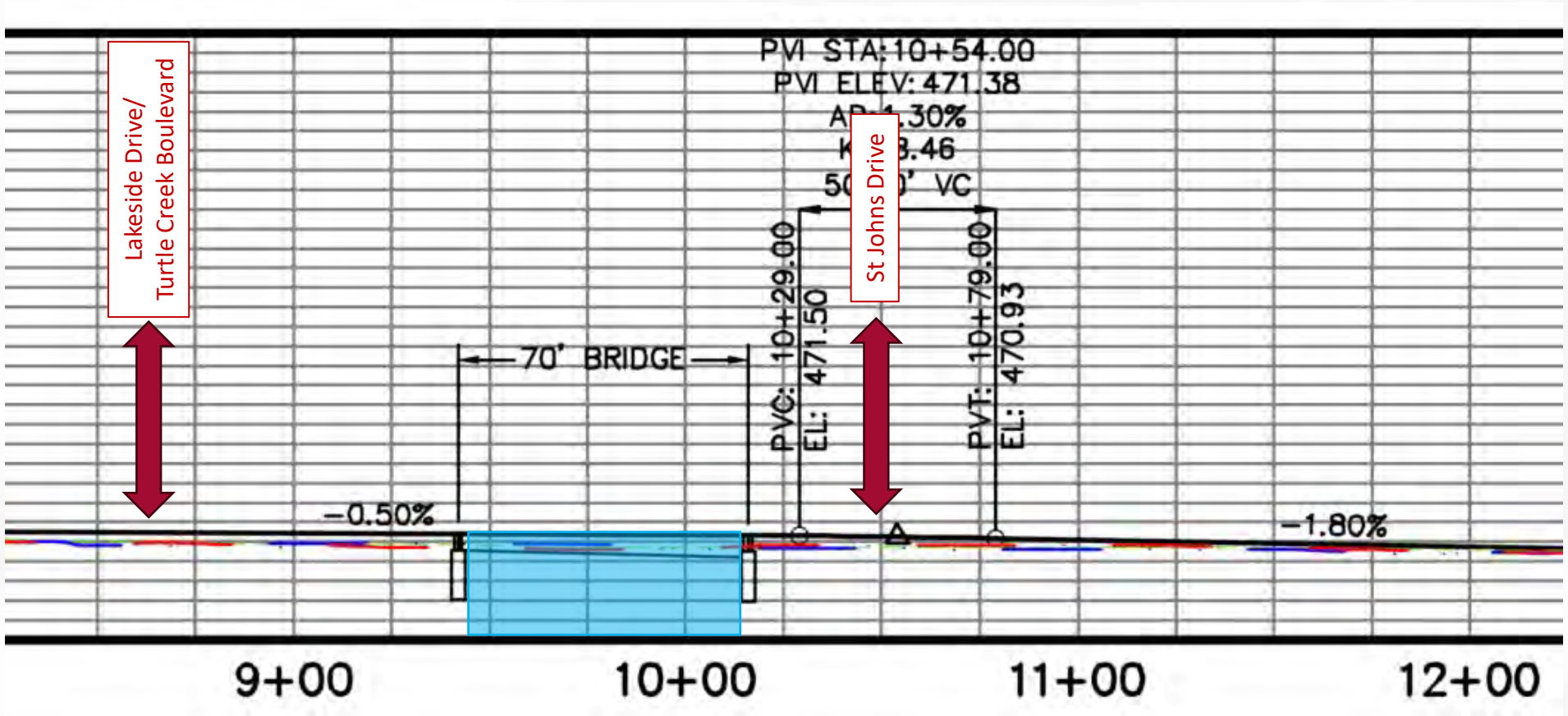
Roadway Geometry



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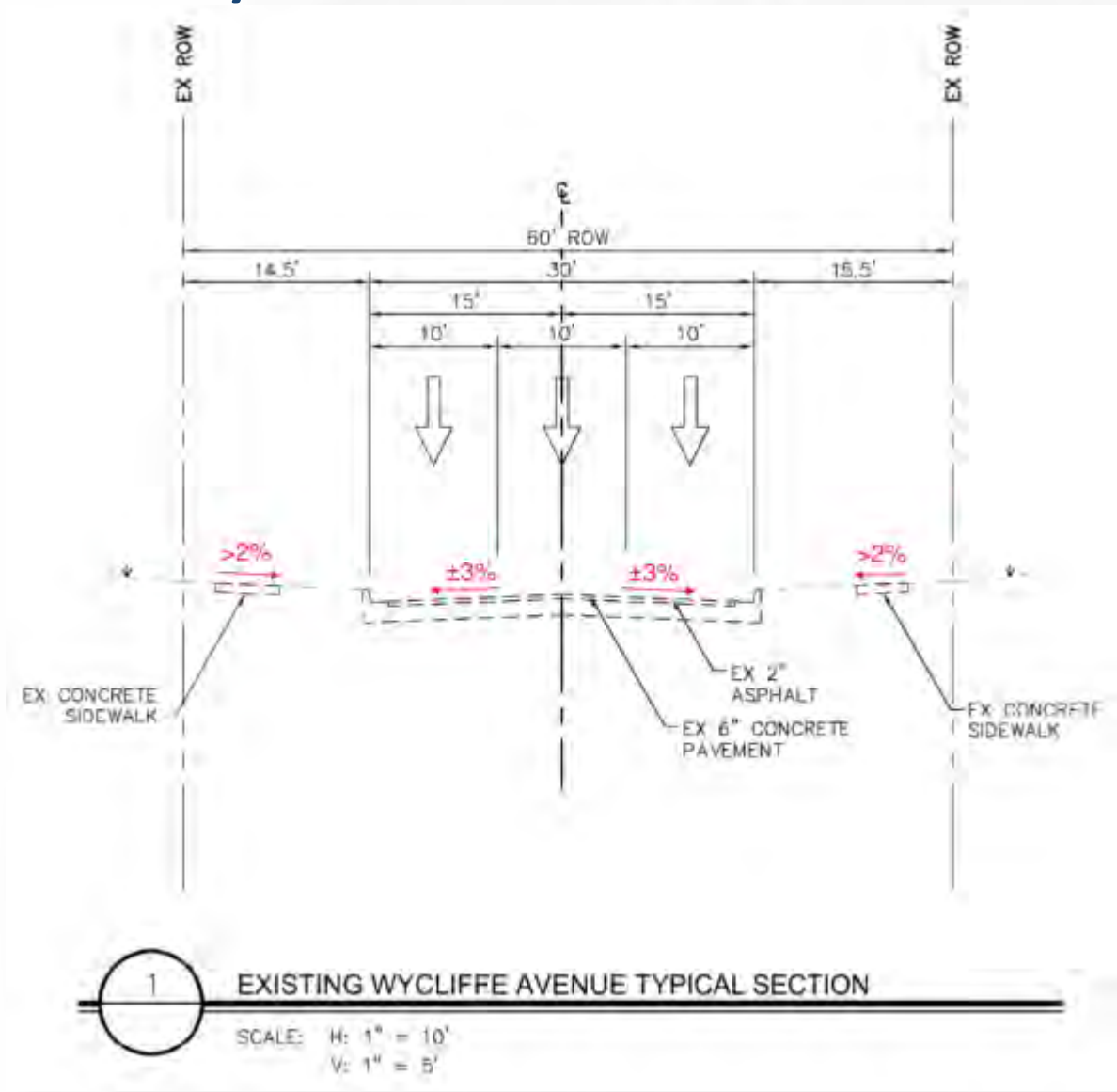
Roadway Geometry





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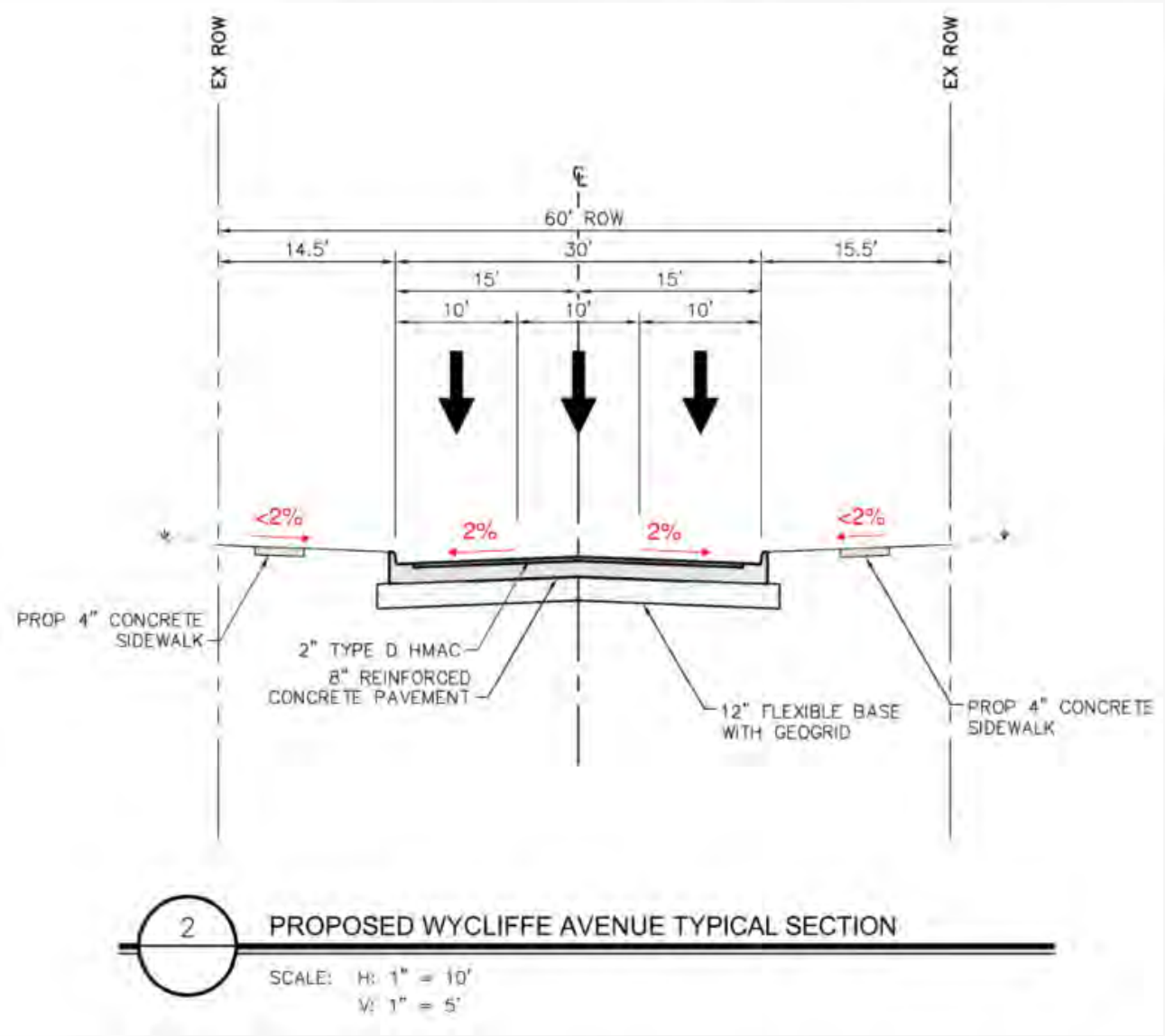
Roadway Geometry





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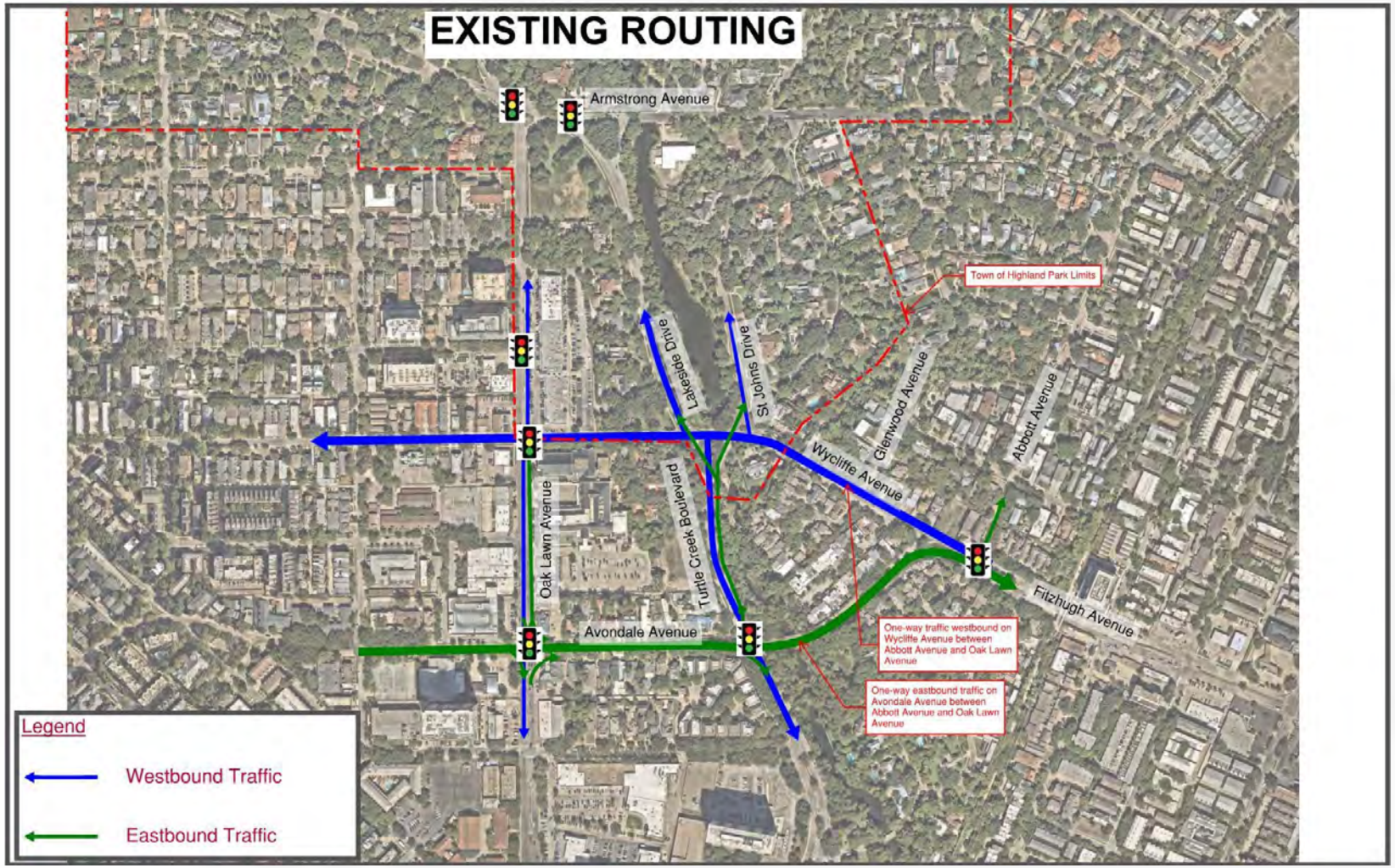
Roadway Geometry





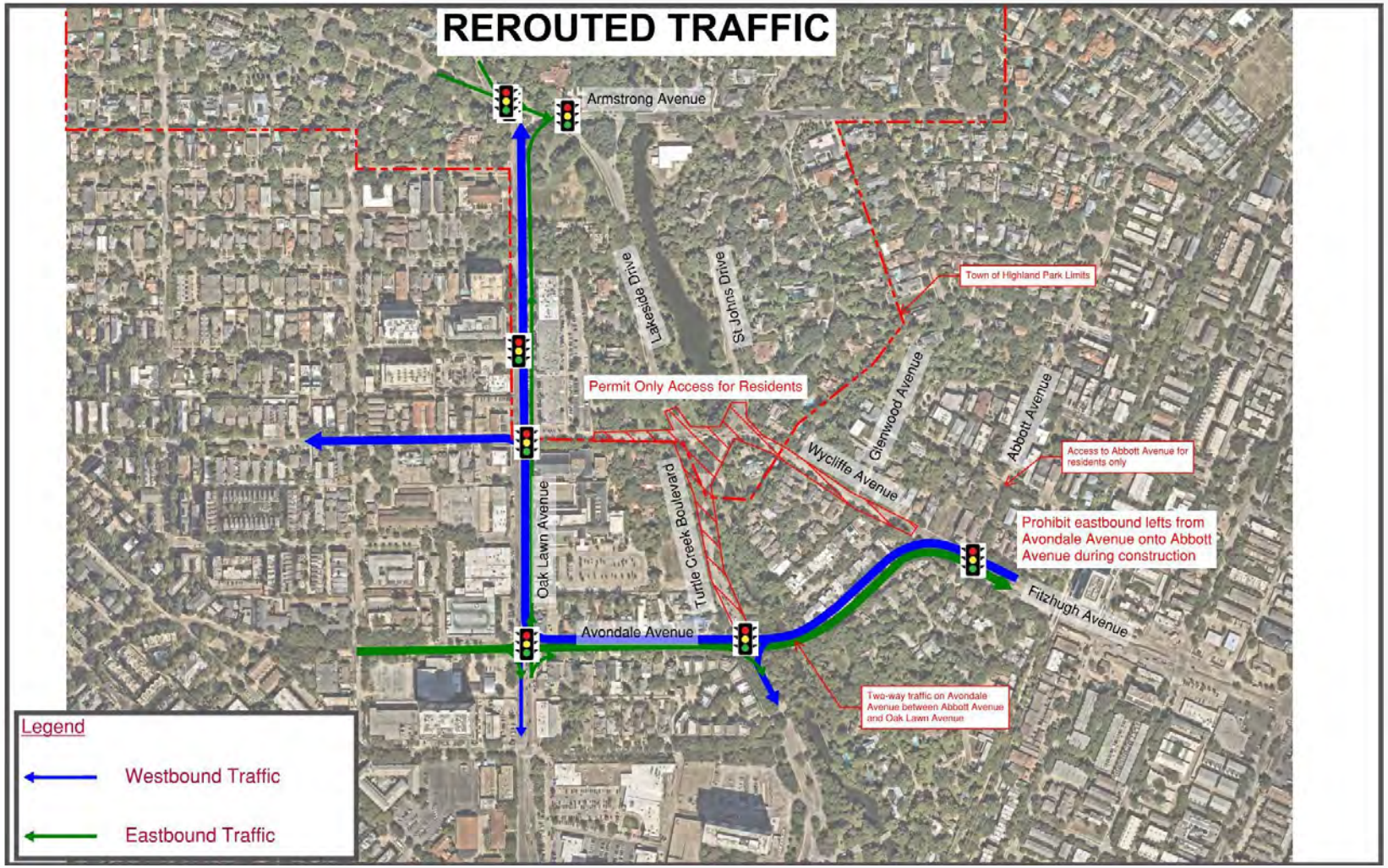
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Traffic Control



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Traffic Control



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Constructability

- Contractor relationship
- Sequencing of work
- Construction time limits
- Maintaining water levels in Connor Lake during construction
- Project organization and cleanup
- Resident coordination and communication
- Regular observation and construction coordination meetings

Cost

Estimated Project Cost Summary	
Total Estimated Construction Cost	$19,990,881.00
Design Cost (to date)	$1,838,956.00
Total Estimated Project Cost	**$21,829,837**
Total Estimated Outside Funding*	**$15,697,462.00**
Total Estimated Cost to Town	**$6,132,375.00**
Town Net Design Cost	$1,377,337.00
Town Net Construction Cost	$4,755,041.00

* Outside funding is based on estimated eligible costs.
** Outside funding participation incudes: TCEQ, TxDOT, City of Dallas, Dallas County, and City of University Park.



Drone View of Upstream Channel



Drone View of Downstream Channel



Facing North on Turtle Creek Boulevard



Facing South on St Johns Drive



Facing South on Lakeside Drive



Facing West on Wycliffe Avenue


Facing South on Lakeside Drive



View from Sidewalk on Lakeside Drive



Facing South on St Johns Drive



View from Sidewalk on St Johns Drive



View from Sidewalk on Bridge

Insert rendering drive-through

Thank you

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