

# Water Transmission Line Routing Options

North Texas Municipal Water District  
&  
City of McKinney

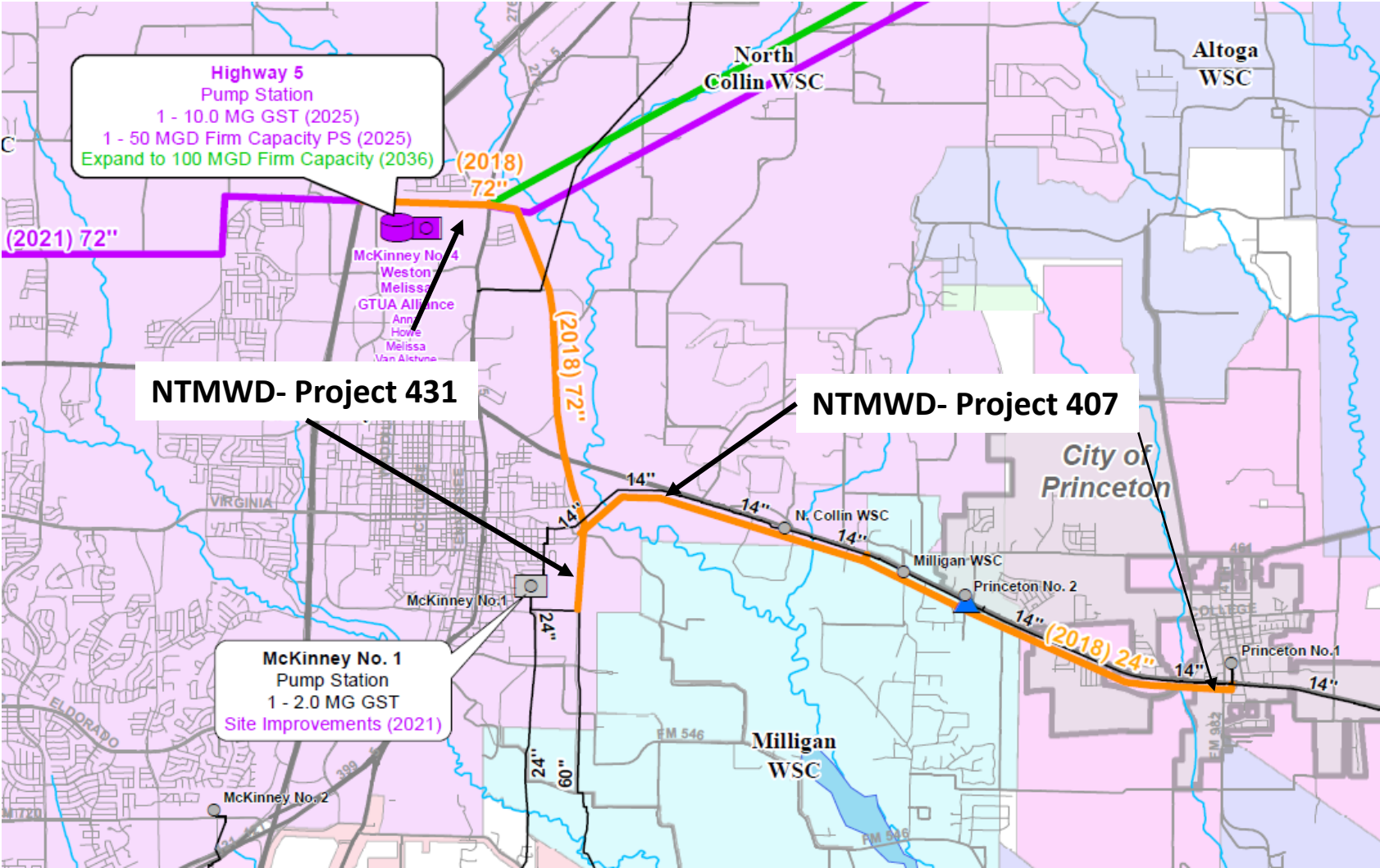
May 2017



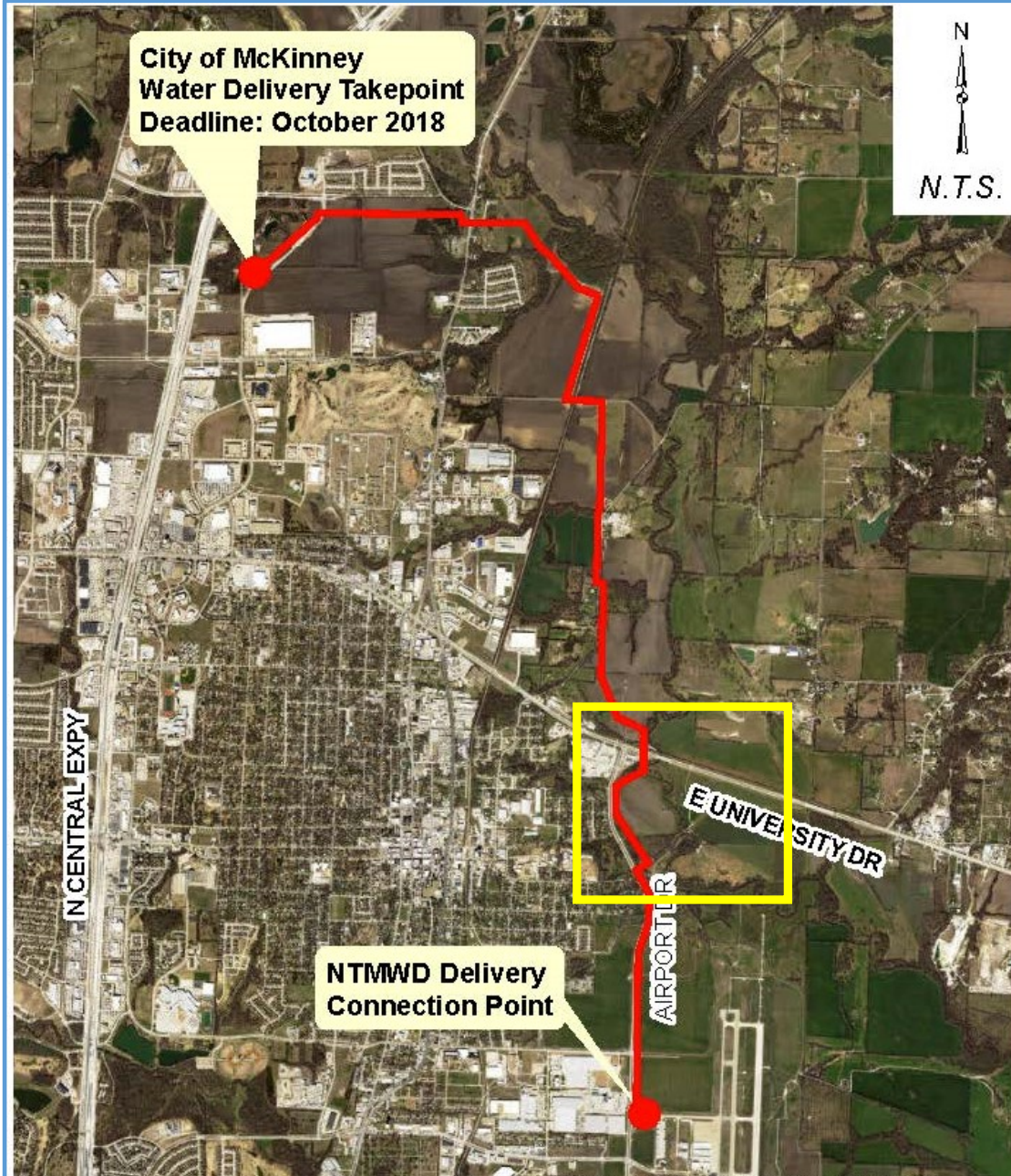
## Goals & Objectives:

- To Install NTMWD treated water transmission lines to meet the growing demands for City McKinney and Princeton (May 2018)
- To explain the options and routing alternatives for water lines
- To gain approval for the recommended optimal alternative routing in order to meet the demands for City of McKinney and City of Princeton (and keep the project on schedule)

## Projects Summary



- **NTMWD Proj 431**
  - Provides water to McKinney (Oct 18) and Princeton
  - 72" proposed pipe
  - Under design
  - 40 foot permanent easement
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- **NTWMD Proj 407**
  - Provides water to Princeton (May 18)
  - 24" Proposed pipe
  - Under Design
  - 30 foot permanent easement

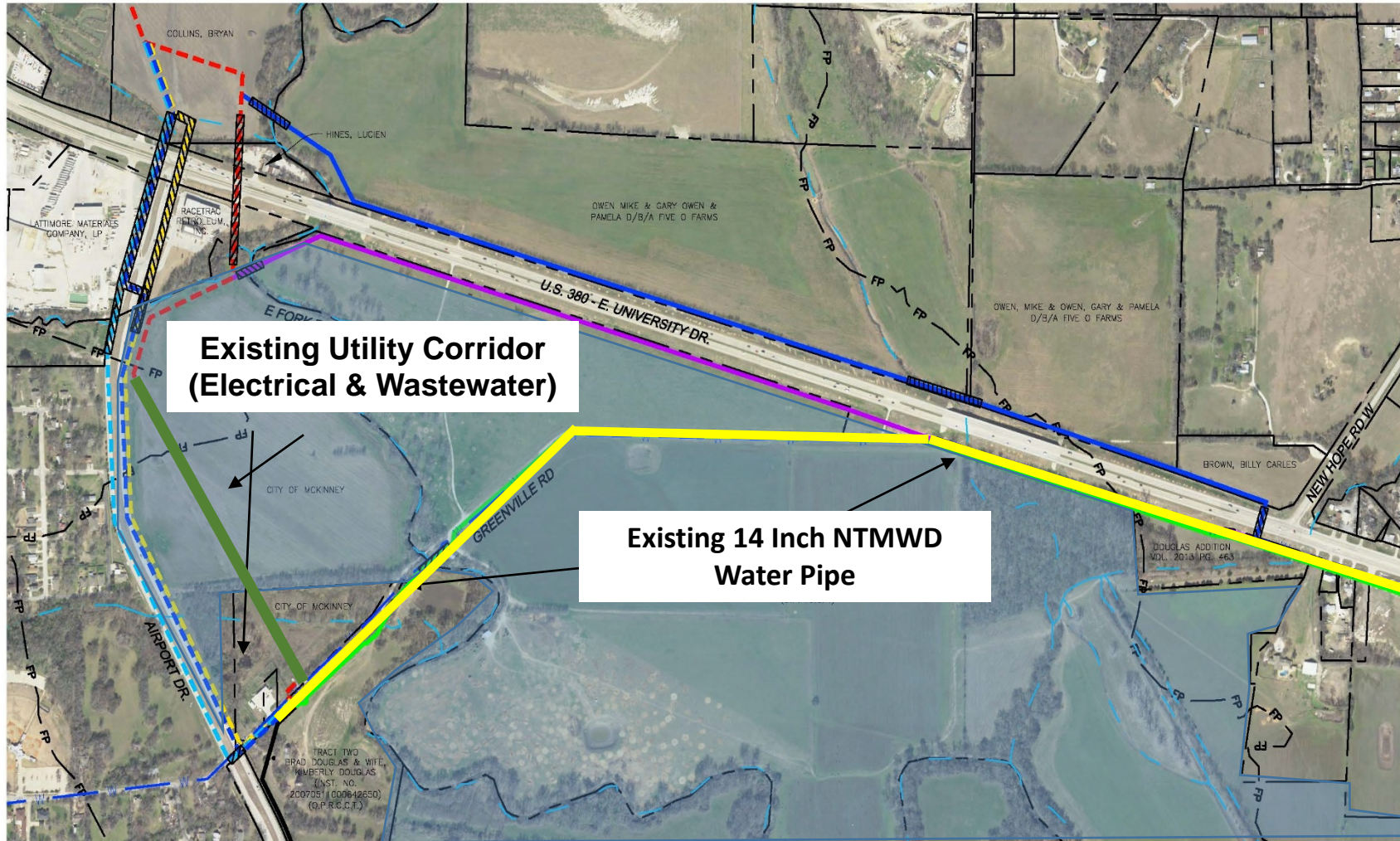


## Location Map:

- Proposed Pipeline provides water to McKinney and Princeton
- 4.6 Miles of 72" Pipe ■
- Under Design by HDR
- Estimated Cost-\$19.9 Million
- Estimated time to construct: 1 year
- Completion Deadline: October 2018

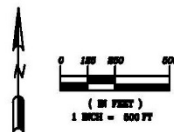
Area of Focus for routing options





### EXISTING CONDITIONS:

- McKinney Park Land
- Purchased-2004-2013
- Existing 14" NTWMD water pipe built in 1950s
- Existing overhead electrical in corridor
- Existing wastewater lines in corridor
- Existing McKinney Park Land

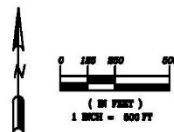
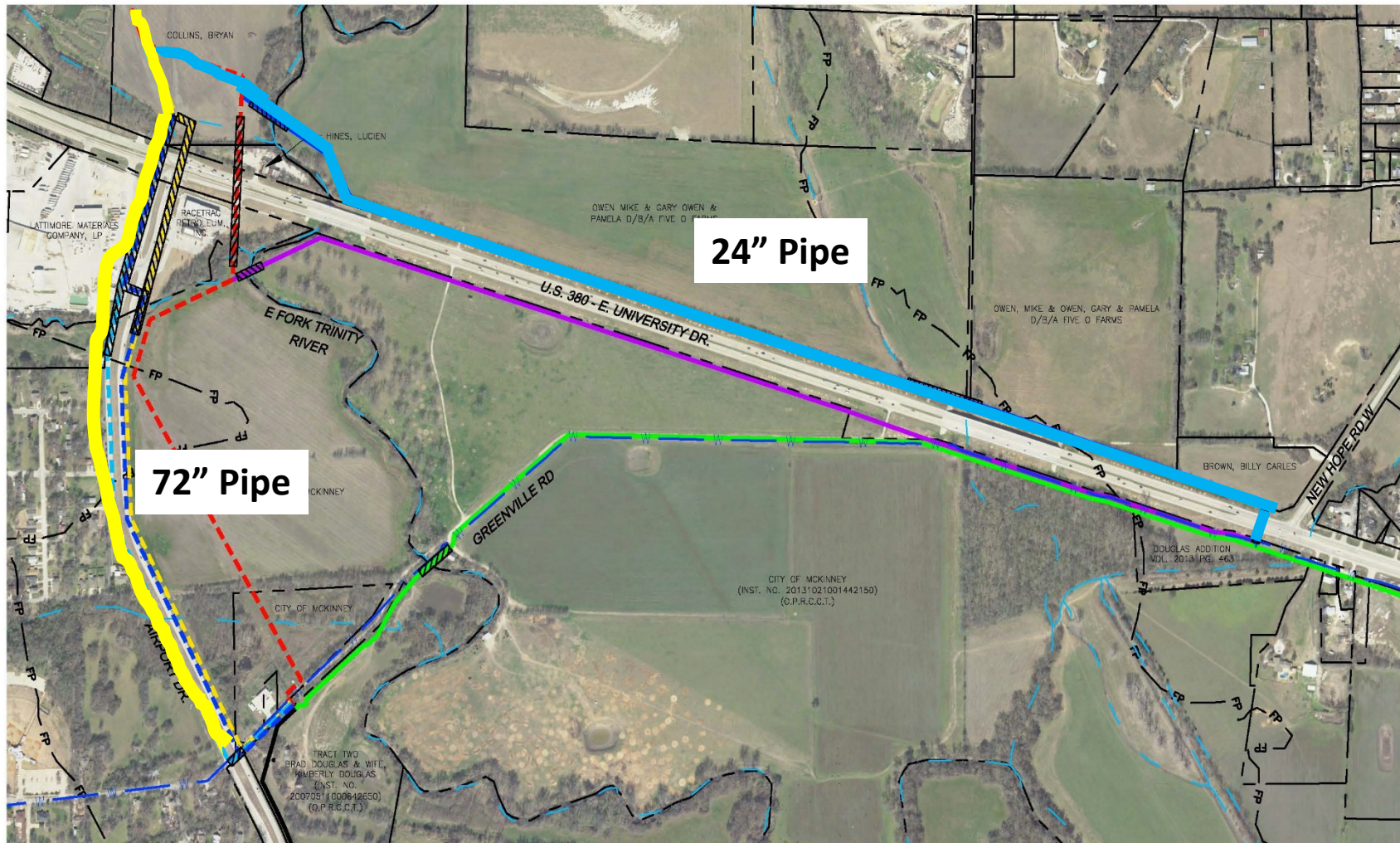




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PARK LAND ALIGNMENT EVALUATION



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### **OPTION: 1**

- Install both Lines outside of Park

### **Pipeline:**

-  24"-Route 2
-  72"-Route 4

### **Benefits**

- No impact to Park Land

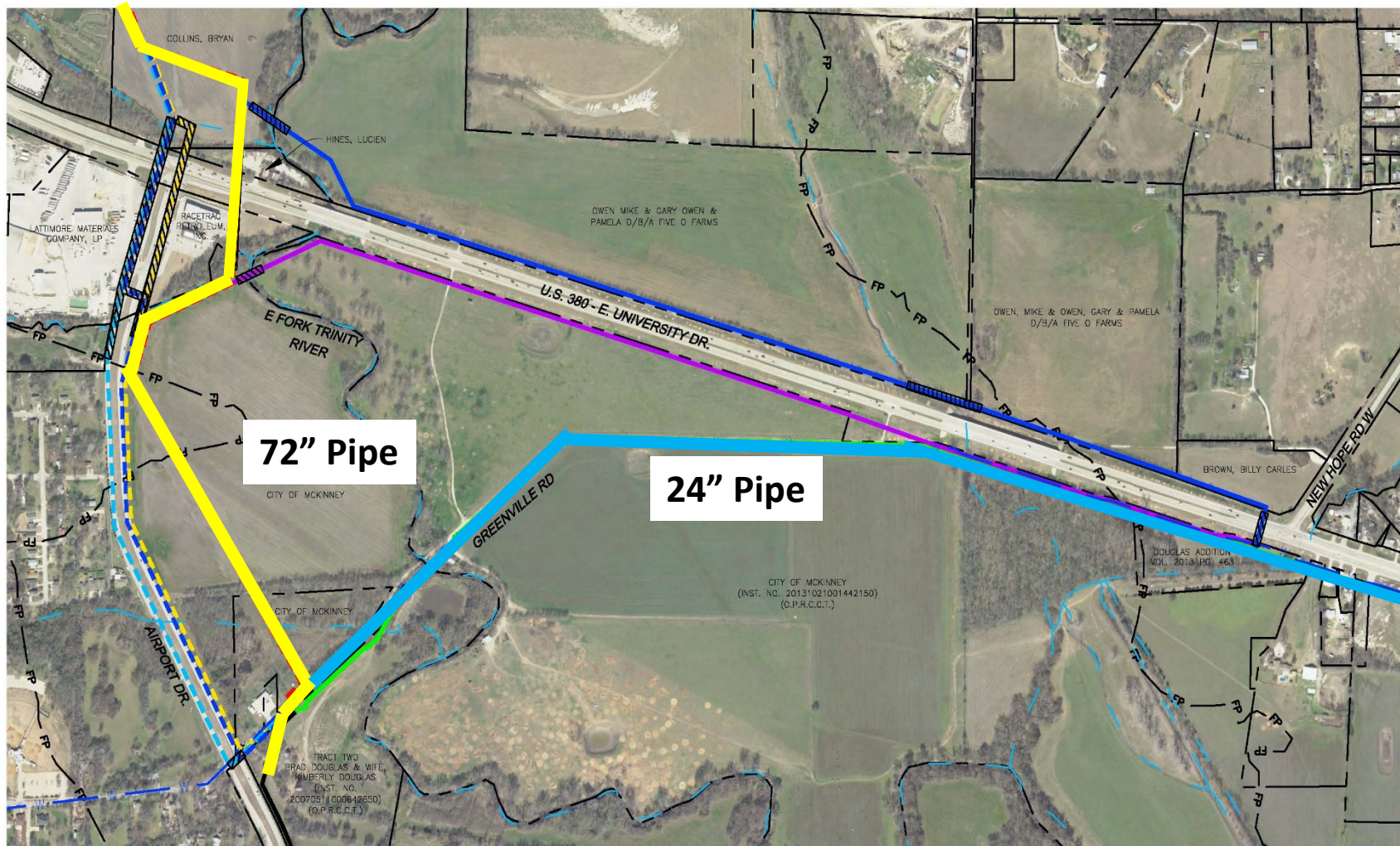
### **Disadvantages**

- NTWMD cannot abandon existing 14" water pipe
- Added Constructability issues
- Delays project 6 months
- TXDOT impact on future relocation
- Impact to developable land

### **Estimated Costs (NTMWD)**

- \$9.7 M





## **OPTION: 2**

- Install 24" Lines through Park and 72" near existing utility corridor

### **Pipeline:**

24"-Route 1

72"-Route 1

### **Benefits**

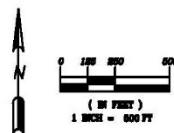
- NTMWD Pays for easements
- Design complete
- Reduce TXDOT future impact

### **Disadvantages**

- NTWMD cannot abandon existing 14" pipe
- Impact for park development
- No schedule delay

### **Estimated Costs (NTMWD)**

- \$6.5 M

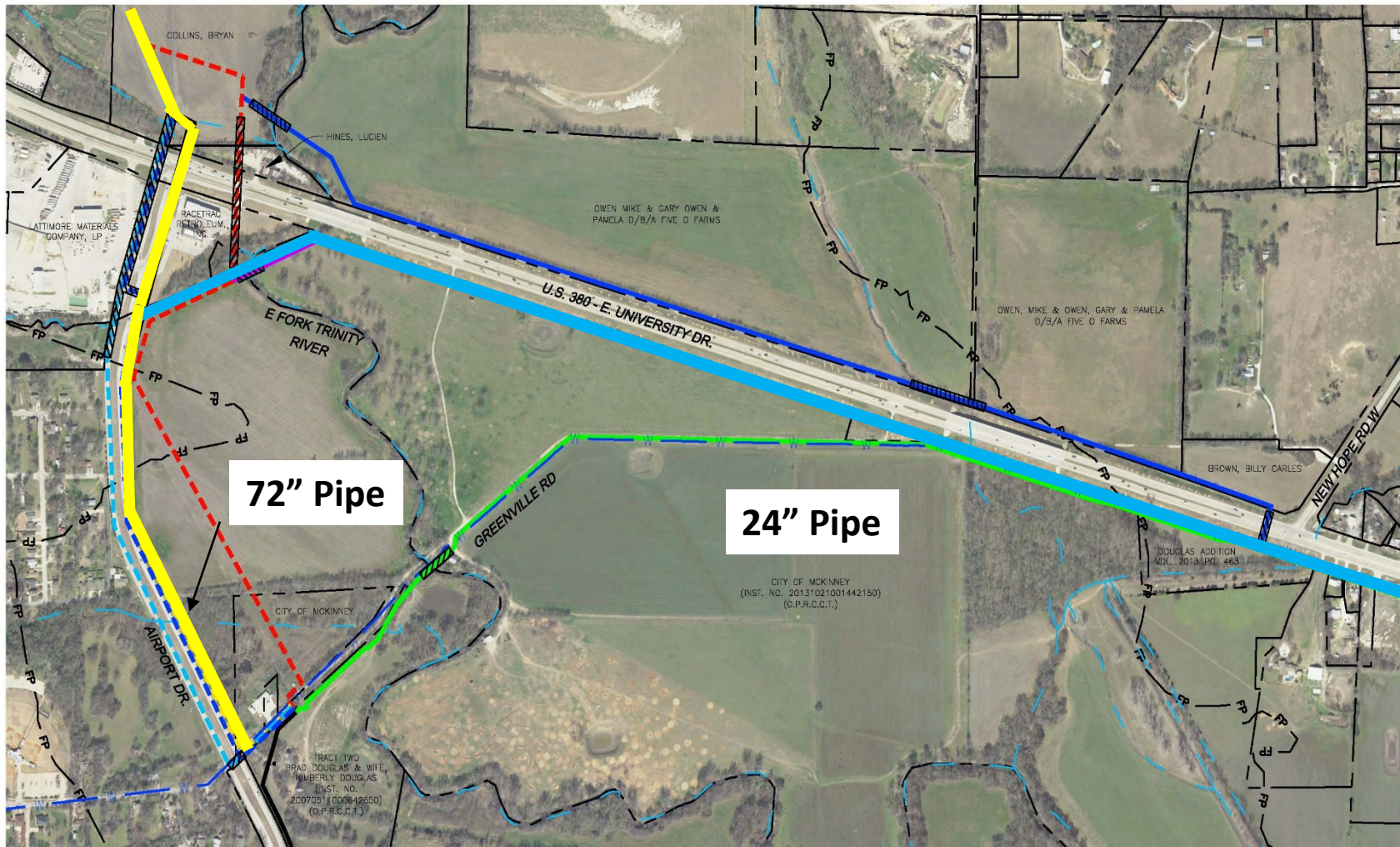


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### **OPTION: 3**

- Install Lines on Perimeter of Park

### **Pipeline:**

- 24"-Route 3
- 72"-Route 2

### **Benefits**

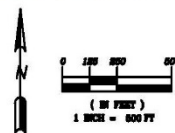
- NTMWD Pays for easements
- Minimal impact to Park development

### **Disadvantages**

- NTMWD cannot abandon existing 14" line
- Constructability issues
- Delays 72" line 3 months
- Higher Costs

### **Estimated Costs (NTMWD)**

- \$7.7 M

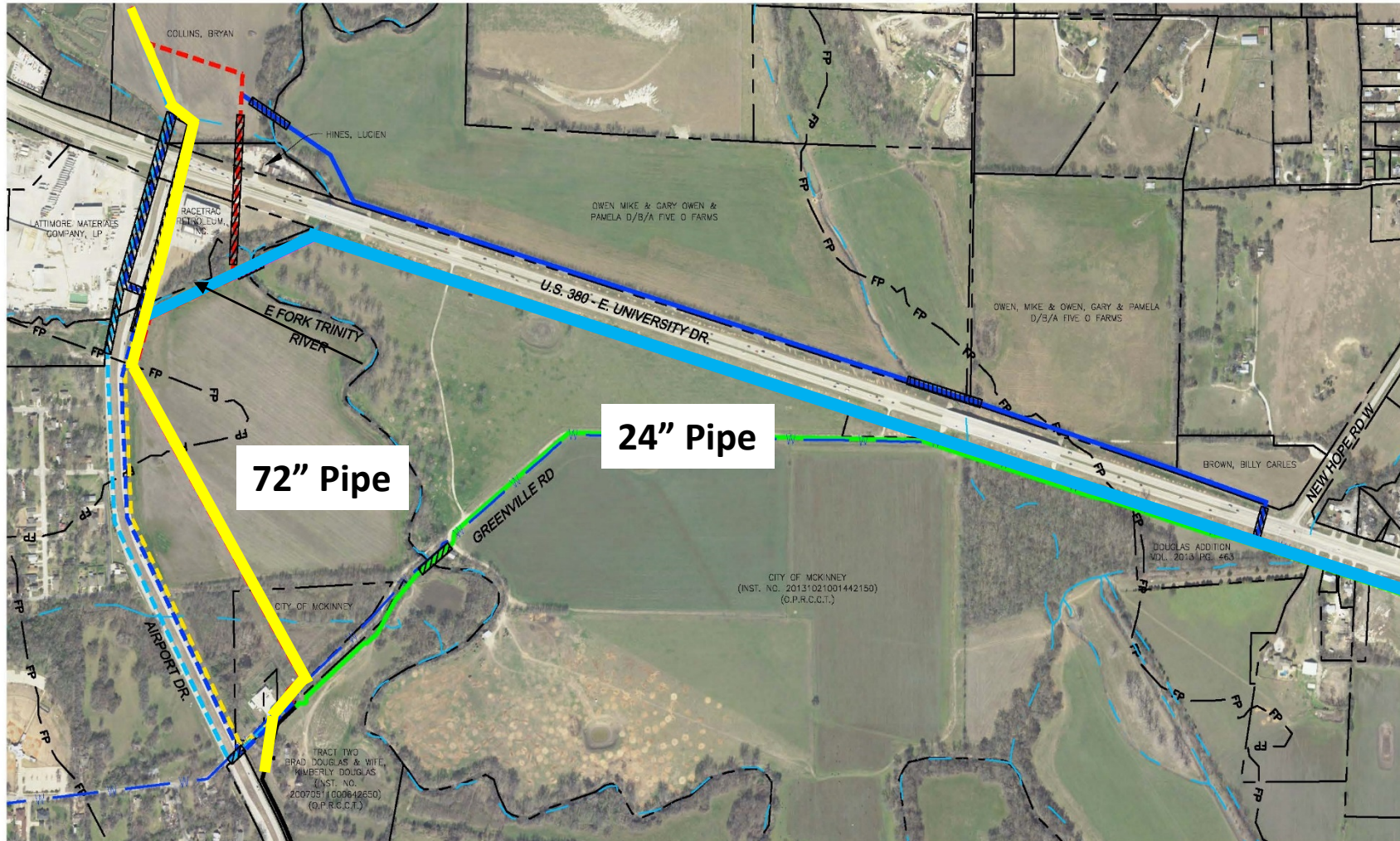


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#### **OPTION: 4**

- Install 24" Line on Perimeter and 72" near existing utility corridor

#### **Pipeline:**

- 24"-Route 3
- 72"-Route 1

#### **Benefits**

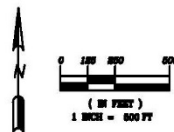
- NTMWD Pays for easements
- Minor disturbance to park
- Avoids Constructability issues
- Reduce TXDOT future impact

#### **Disadvantages**

- NTMWD cannot abandon existing 14" Line
- Higher Costs

#### **Estimated Costs (NTMWD)**

- \$6.6 M

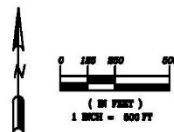
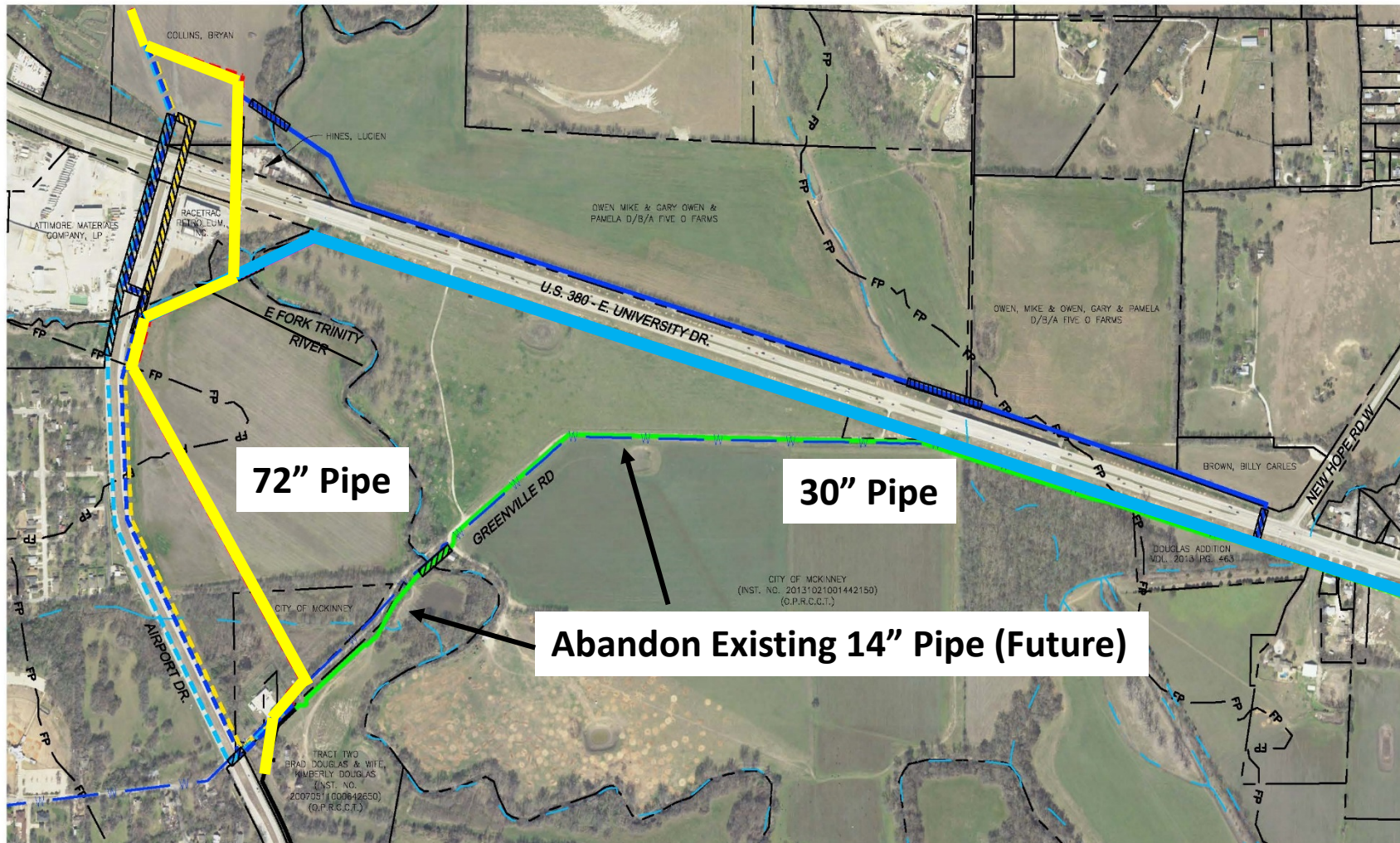


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### **OPTION: 5**

- Install 30" Line on Park Perimeter and 72" near utility corridor

### **Pipeline:**

-  30"-Route 4
-  72"-Route 1

### **Benefits**

- NTMWD Pays for easements
- Minor disturbance to park
- Avoids Constructability issues
- Abandon existing 14" Line (future)

### **Disadvantages**

- Higher Costs
- Loss of redundancy

### **Estimated Costs (NTMWD)**

- \$7.1 M



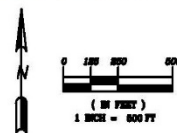
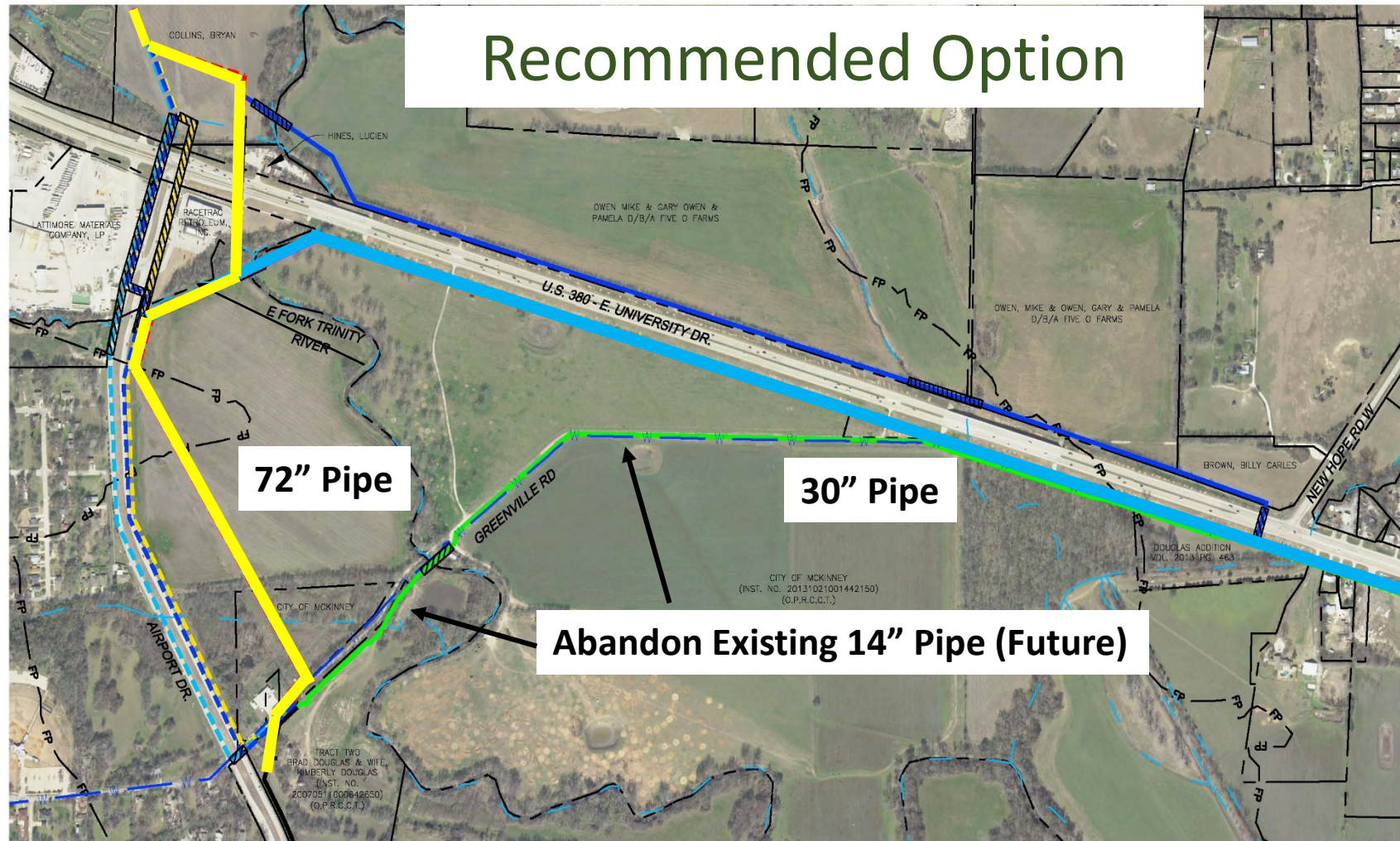
## Options Summary:

Option	Description	Impacts McKinney Land?	Schedule Impact	Est Total Costs to NTMWD*	Note
1	Install both pipes outside of Park	None	Yes, 6 Month delay	\$9.7 M	New easements & Design
2	Install 24" Pipe through Park and 72" near existing utility corridor	Yes	None	\$6.5 M	
3	Install both pipes on Park Perimeter	Yes	Yes, 3 month delay	\$7.7 M	New easements and design
4	Install 24" Pipe on Park Perimeter and 72" near existing utility corridor	Yes	None	\$6.6 M	Existing 14" water pipe will not be abandoned
5	Install 30" Pipe on Park Perimeter and 72" near existing utility corridor	Yes	None	\$7.1 M	Facilitates abandoning existing 14" water line in future**

### Recommend Option 5

\*\* Trigger is when NTWMD line from Leonard Water Treatment Plant to Princeton built

# Recommended Option



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## OPTION: 5

- Install 30" Line on Park Perimeter and 72" near utility corridor

## Pipeline:

- 30"-Route 4
- 72"-Route 1

## Benefits

- NTMWD Pays for easements
- Minor disturbance to park
- Avoids Constructability issues
- Abandon existing 14" Line (future)

## Disadvantages

- Higher Costs
- Loss of redundancy

## Estimated Costs (NTMWD)

- \$7.1 M



## Recommendation:

Option 5 is the optimal alternative for both McKinney and NTMWD

- Allows for NTMWD to abandon existing 14" Line in the future
- Less impact on park land development
- Minimizes impact to existing park
- NTMWD provides funds to McKinney for easements
- Keeps Projects on schedule for City of McKinney and Princeton to meet growing demands

# Water Transmission Line Routing Options

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City of McKinney

May 2017

