# FM 546/CR 400 Corridor Study

Request for Approval of Alignment from Bridgefarmer Road to US 380

**June 2021**

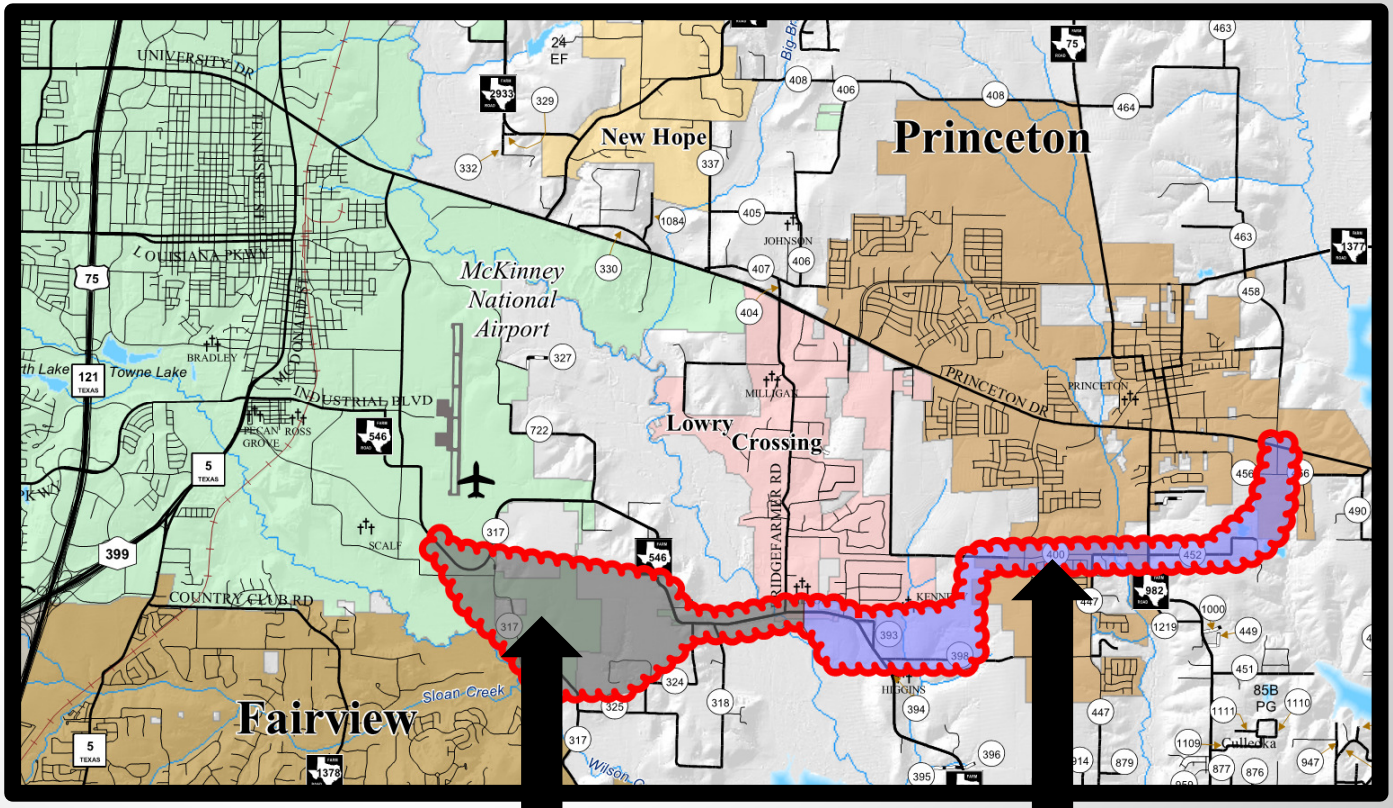
COLLIN COUNTY

# Project Overview

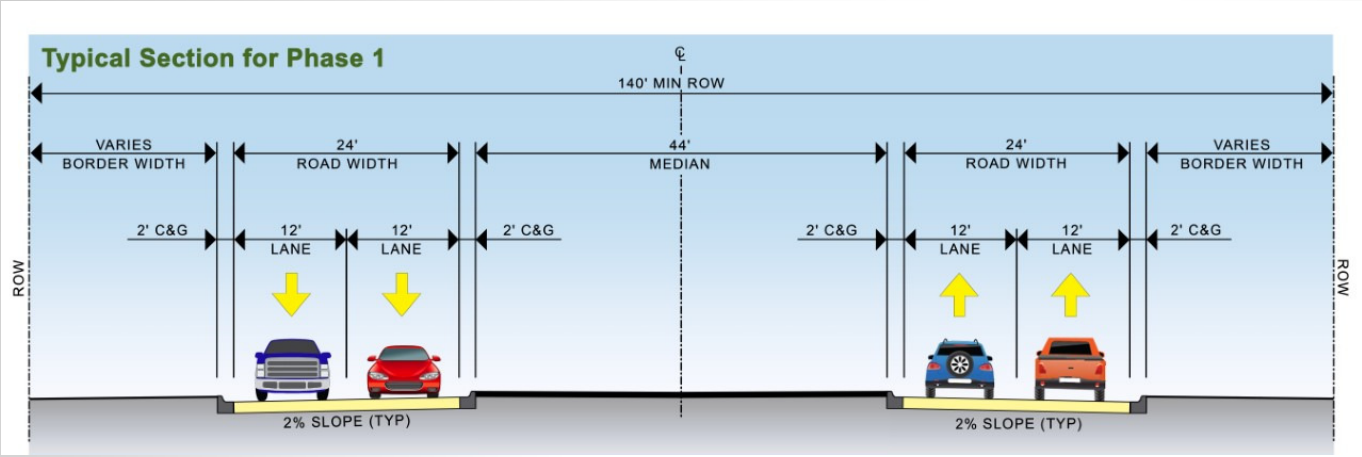
## Overall Study Split into 2 Phases

**CURRENT STUDY**
**Phase I – Purple**
Limits:
From east of Bridgefarmer Road
to US 380

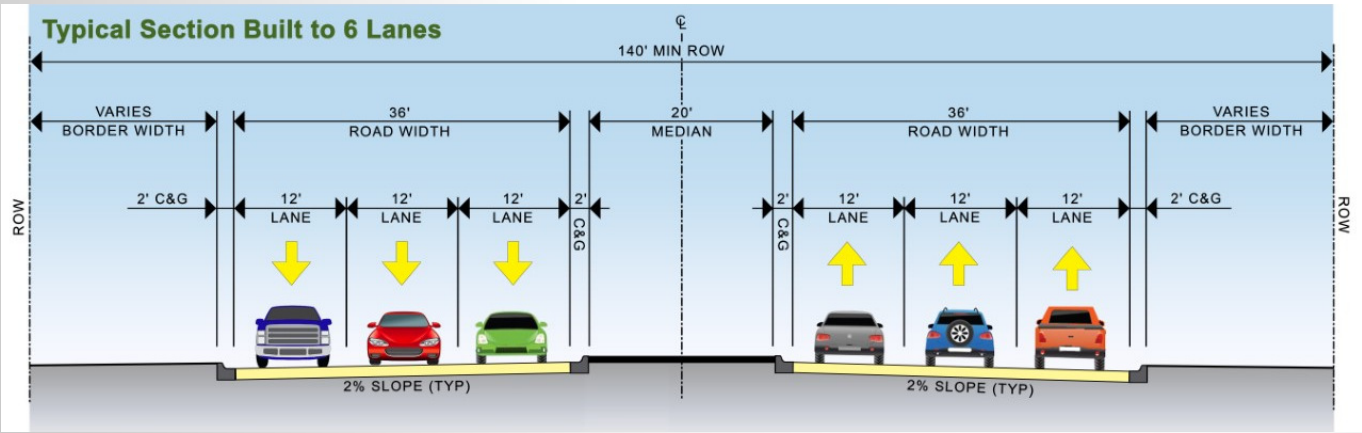
**Phase II – Gray**
**In Progress**
Limits:
From south of McKinney National Airport
to east of Bridgefarmer Road



# Proposed Typical Section




Interim Typical Section




Ultimate Typical Section

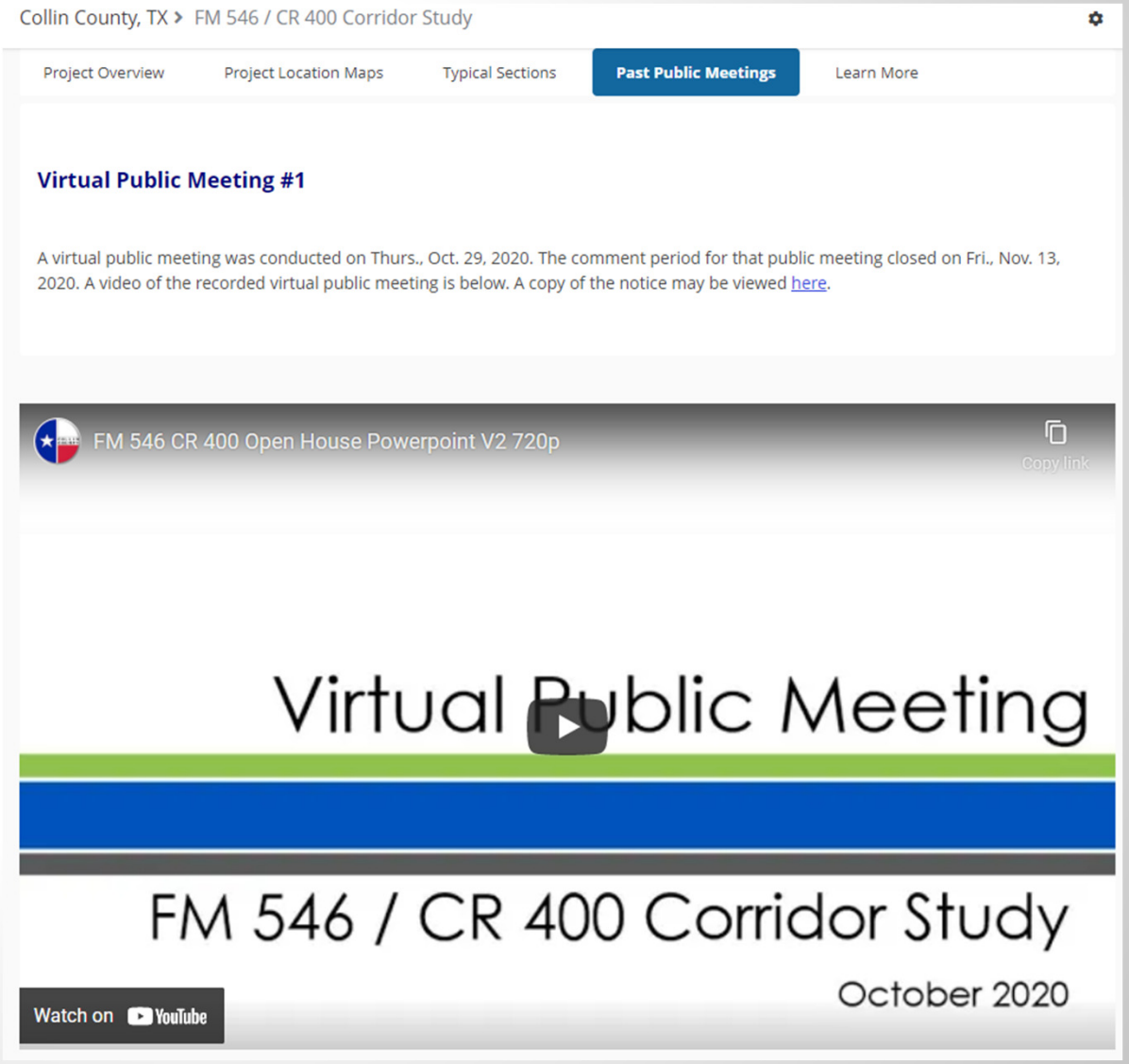
## Typical Section

- Construct four 12-foot lanes (Interim)
- Access controlled by left turn lanes and opening in medians
- Median will allow for future expansion to six lanes (Ultimate)

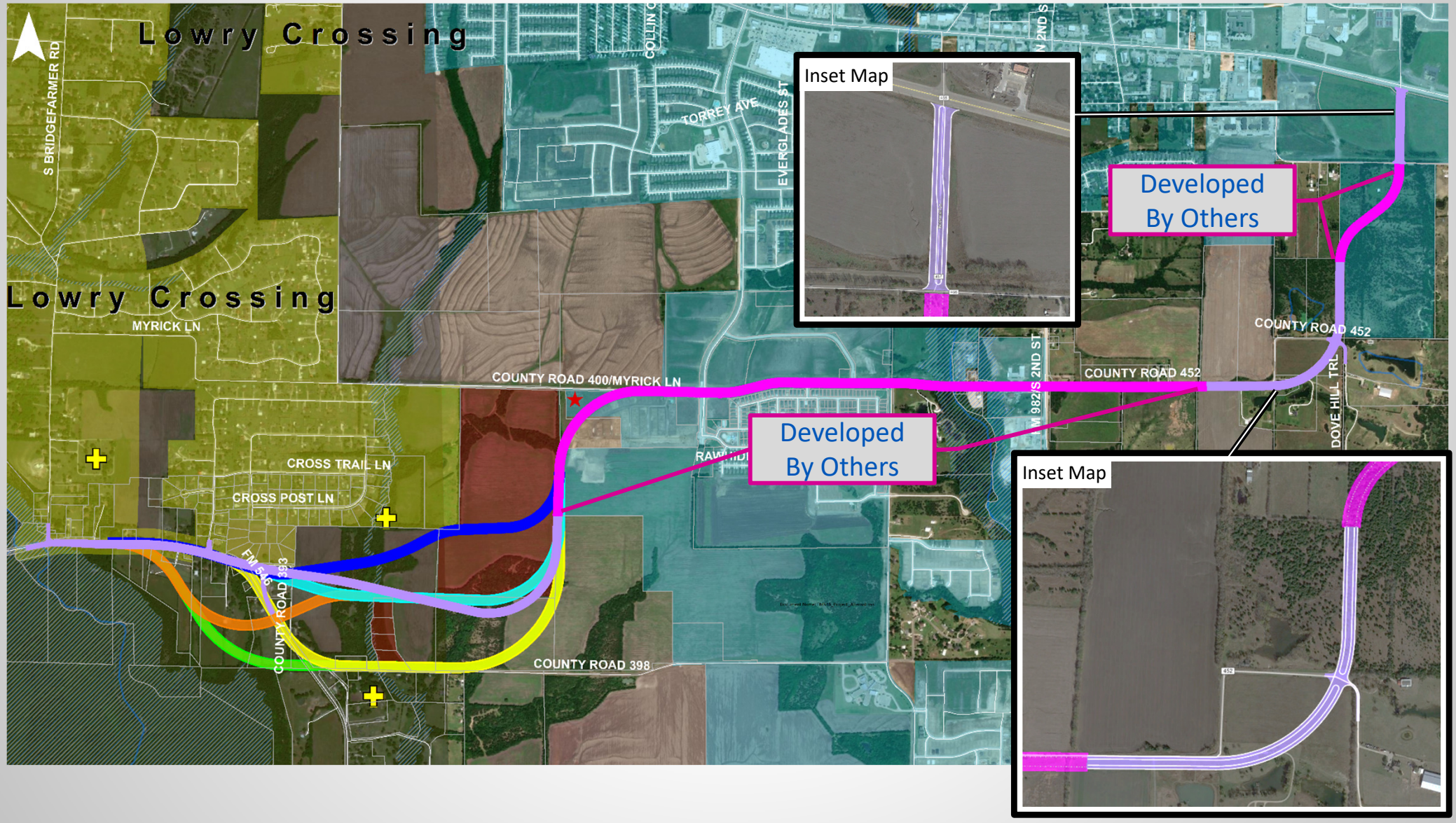
# Public Outreach Summary

- 2 – Lowry Crossing Focus Group
- 1 – Lowry Crossing EDC Presentation
- 2 – City of Princeton
- 8 – Property Owner Meetings
- 1 – Group Property Owner Meeting with Commissioner Hale & Project Team
- 2 – Mass Public Notice Mailings
- 6 – Newspaper Postings/Facebook
- 2 – News Releases (PIO)
- 6 – Mass E-mail Announcements
- 2 – Public Meetings (Virtual & In-Person)

## Public Meeting Website

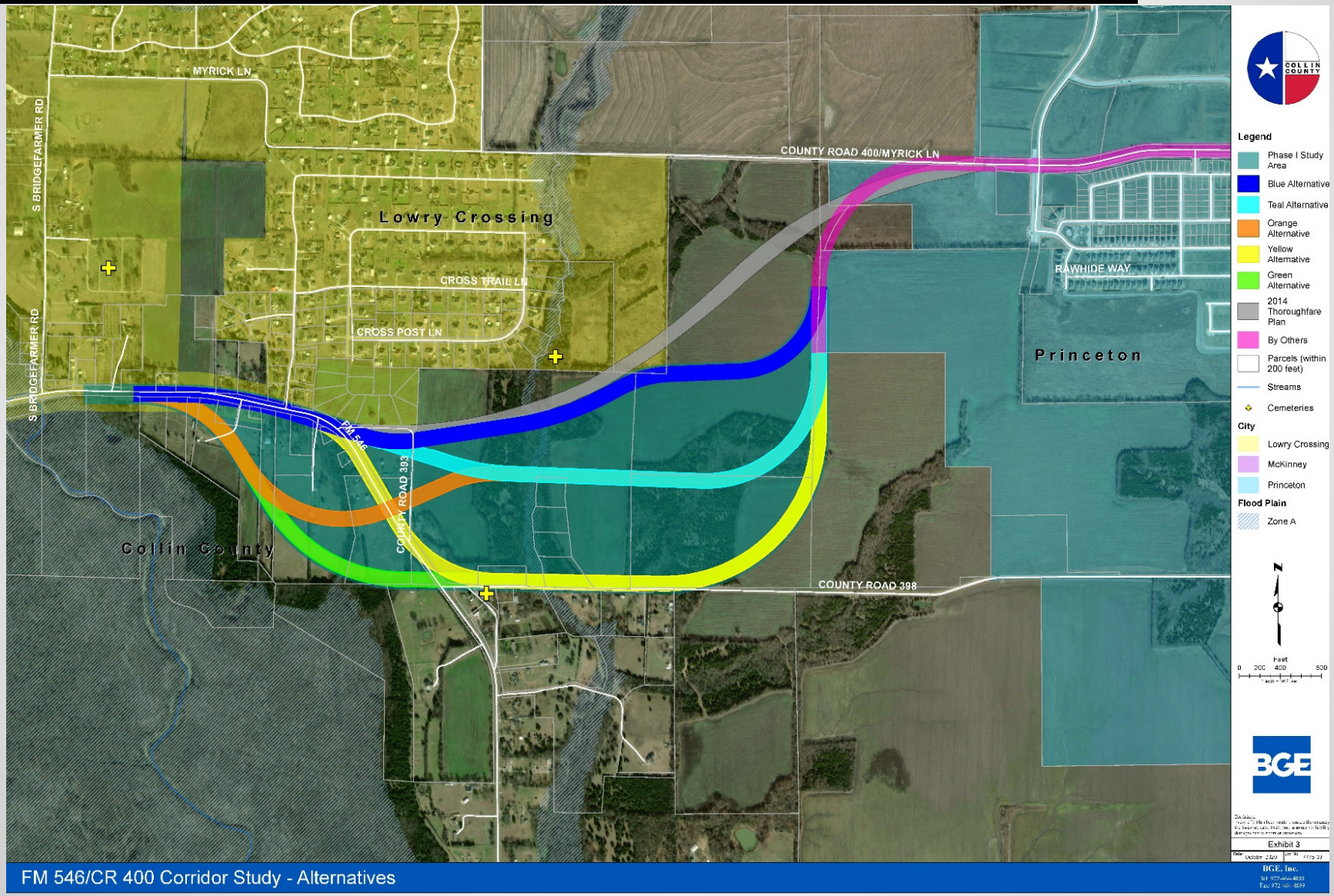


# Proposed Alternatives



# Proposed Alternatives Cont'd

## Alternatives shown at Public Meeting # 1 – Oct. 29, 2020



# Public Meeting #1 Summary (10/29/20)

- 73 Total Comments Received
- Top Concerns
  - Residential & Property Impacts
  - Safety
  - Increased Traffic

## Public Preferences

| | ALT1 | ALT2 | ALT3 | ALT4 | ALT5 |
|---|---|---|---|---|---|
| Preferred | 43% | 17% | 21% | 11% | 26% |
| Disliked | 13% | 13% | 47% | 21% | 38% |
| Not Mentioned | 43% | 70% | 32% | 68% | 36% |
| Ranking | 1 | 2 | 5 | 3 | 4 |

# Alternatives Comparison Matrix Analysis

**Evaluation Criteria Categories**

- Environmental
- Engineering and Constructability
- Public/Stakeholder Input
- Utilities and ROW
- Construction Cost

# Alternatives Comparison Matrix Analysis Cont'd

## Scoring System

- Scored on a scale from 1 to 5, based on severity of impact with 5 having the most impact.
- The scores for each category were added together to obtain total score of each alternative.
- The **least impactful** alternatives (**lowest score**) are **shaded green**.
- The **most impactful** alternatives (**highest score**) are **shaded red**.
- Alternatives with moderate impacts are **shaded yellow**.

NOTE: Process utilized follows guidelines set forth by the National Environmental Policy Act of 1969 known as NEPA

# Environmental

## Sub-Categories Utilized for Comparison

- Number of Parcels Impacted
- Number of Displacements
- Acres of Land Impacted
- Acres of Farmland Impacted
- Noise Impacts
- Potential Cemetery Impact
- Indirect Impacts

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Environmental** | | | | | | |
| Parcels Affected | N/A | 4 | 4 | 5 | 3 | 4 |
| Displacements | N/A | 1 | 3 | 5 | 3 | 3 |
| Acres of Prime Farmland Impacted | N/A | 5 | 4 | 3 | 3 | 4 |
| Structures Affected by increase in Noise (100 feet) | N/A | 3 | 3 | 5 | 2 | 3 |
| Potential Cemetery Impact | N/A | N | N | Y | N | Y |
| Indirect Impacts | N/A | 3 | 4 | 5 | 3 | 5 |
| **Sub-Total** | **N/A** | **16** | **18** | **24** | **14** | **20** |

# Engineering and Constructability

## Sub-Categories Utilized for Comparison

- Intersections
- Design Speed
- Driveway Access
- Construction Sequencing
- Drainage

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Engineering and Constructibility** | | | | | | |
| Skewed Intersections (based on severity) | N/A | 2 | 2 | 3 | 2 | 5 |
| Speed Given Curve Radii | N/A | 5 | 1 | 5 | 4 | 1 |
| Speed Given Superelevation | N/A | 5 | 2 | 5 | 5 | 1 |
| Driveway Challenges (Percentage) | N/A | 2 | 2 | 3 | 4 | 3 |
| Number of Driveways Impacted | N/A | 4 | 3 | 5 | 2 | 3 |
| Construction Sequencing Challenges | N/A | 1 | 1 | 3 | 1 | 2 |
| Drainage Impacts | N/A | 3 | 3 | 4 | 2 | 2 |
| Impacts Recent Myrick Lane Construction | N/A | 5 | 2 | 1 | 2 | 1 |
| **Sub-Total** | **N/A** | **27** | **16** | **29** | **22** | **18** |

# Public / Stakeholder Input

## Sub-Categories Utilized for Comparison

- Public Preferences per Alternative
- Property Bifurcation Impacts (Farmland, Remainders)
- Impacts to Proposed/Planned Developments
- Local Government Input

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Public/Stakeholder Input** | | | | | | |
| Public Preferences for Alternative | N/A | 1 | 2 | 5 | 4 | 3 |
| Property Bifurcation Impacts (Farmland; Remainders) | N/A | 4 | 2 | 3 | 5 | 5 |
| Impacts to Proposed Developments | N/A | 5 | 3 | 1 | 3 | 1 |
| Local Government Input | N/A | 5 | 3 | 1 | 2 | 1 |
| **Sub-Total** | **N/A** | **15** | **10** | **10** | **14** | **10** |

# Utilities and Right-of-Way/Cost Analysis

## Sub-Categories Utilized for Comparison

- Utility Impacts
- ROW Impacts

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Utilities and ROW** | | | | | | |
| Utilities Impacted | N/A | 3 | 3 | 4 | 2 | 3 |
| Proposed ROW Needed | N/A | 3 | 4 | 4 | 5 | 5 |
| **Sub-Total** | **N/A** | **6** | **7** | **8** | **7** | **8** |

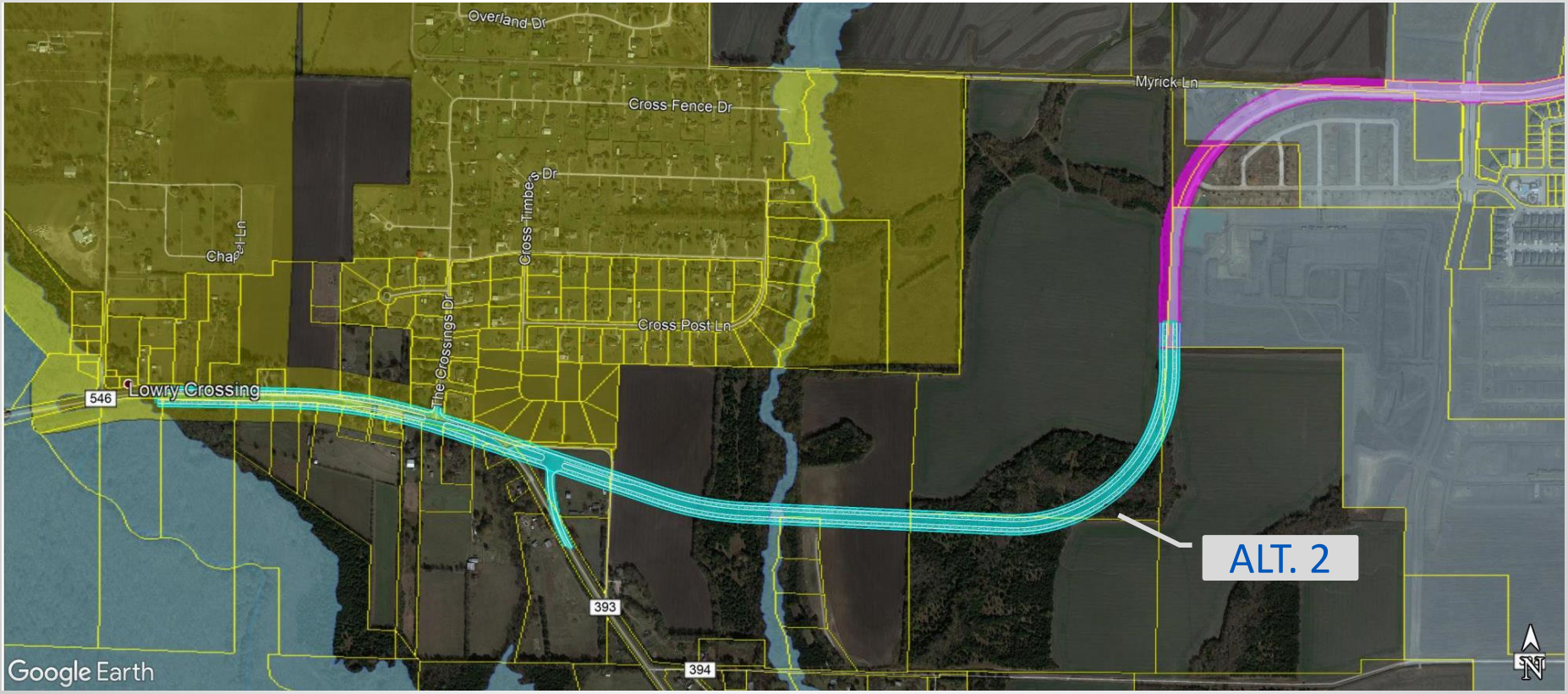
- Cost Analysis: A conceptual construction cost estimate was developed for each alternative for comparison.

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Cost** | | | | | | |
| Cost Analysis | N/A | 1 | 1 | 5 | 3 | 5 |

# Results

## Combined Scores

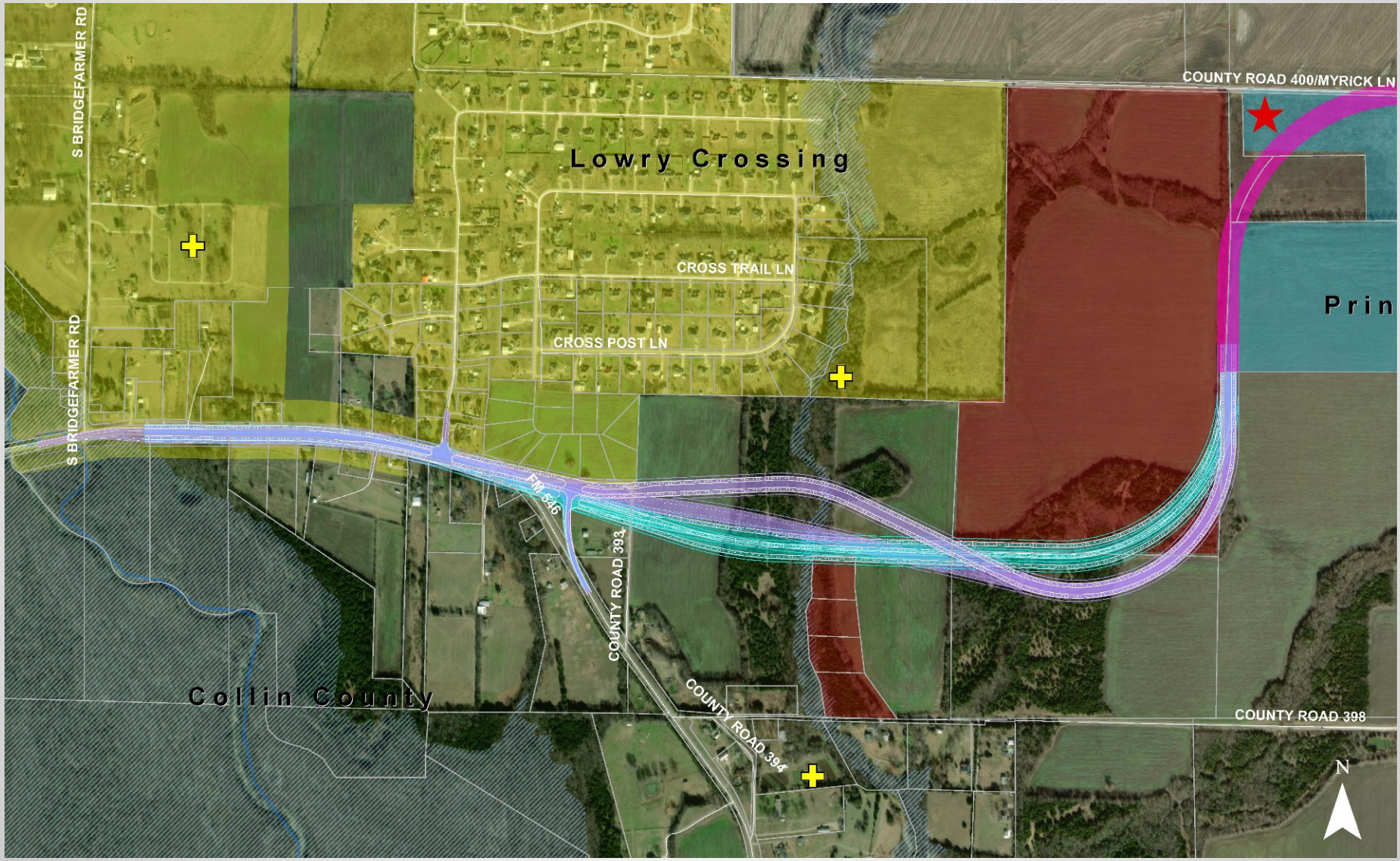
| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 |
|---|---|---|---|---|---|---|
| **Combined Rankings** | | | | | | |
| Overall Total (LOW SCORE BEST): | N/A | 65 | 52 | 76 | 60 | 61 |
| Note: No Build does not meet purpose and need of the project and is not scored. | | | | | | |



# Additional Alternatives

## Additional Alternatives Analyzed After Public Meeting #1

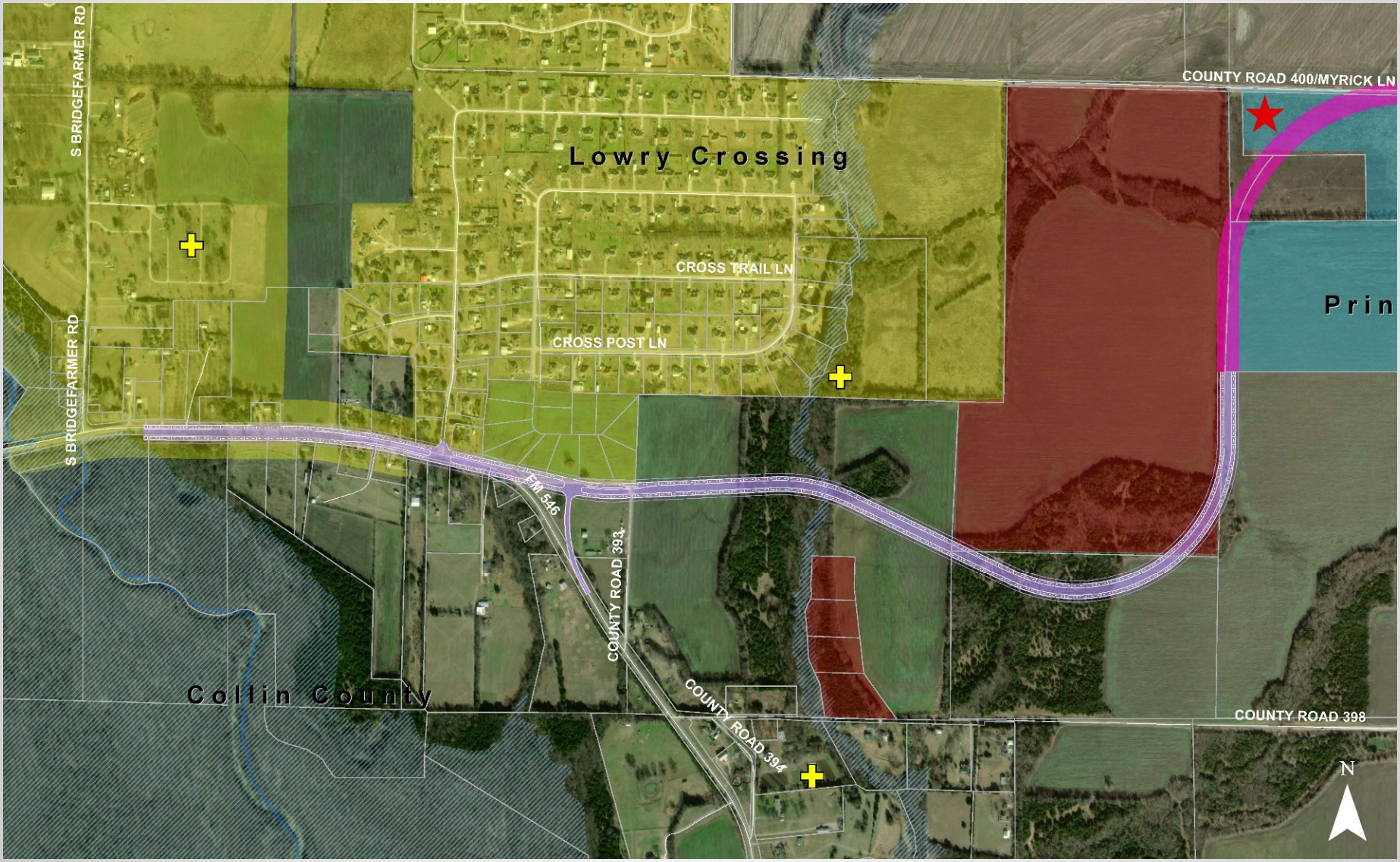
ADDITIONAL ALTERNATIVES ANALYZED



# Additional Alternatives Cont'd

## Additional Alternatives Analyzed After Public Meeting #1

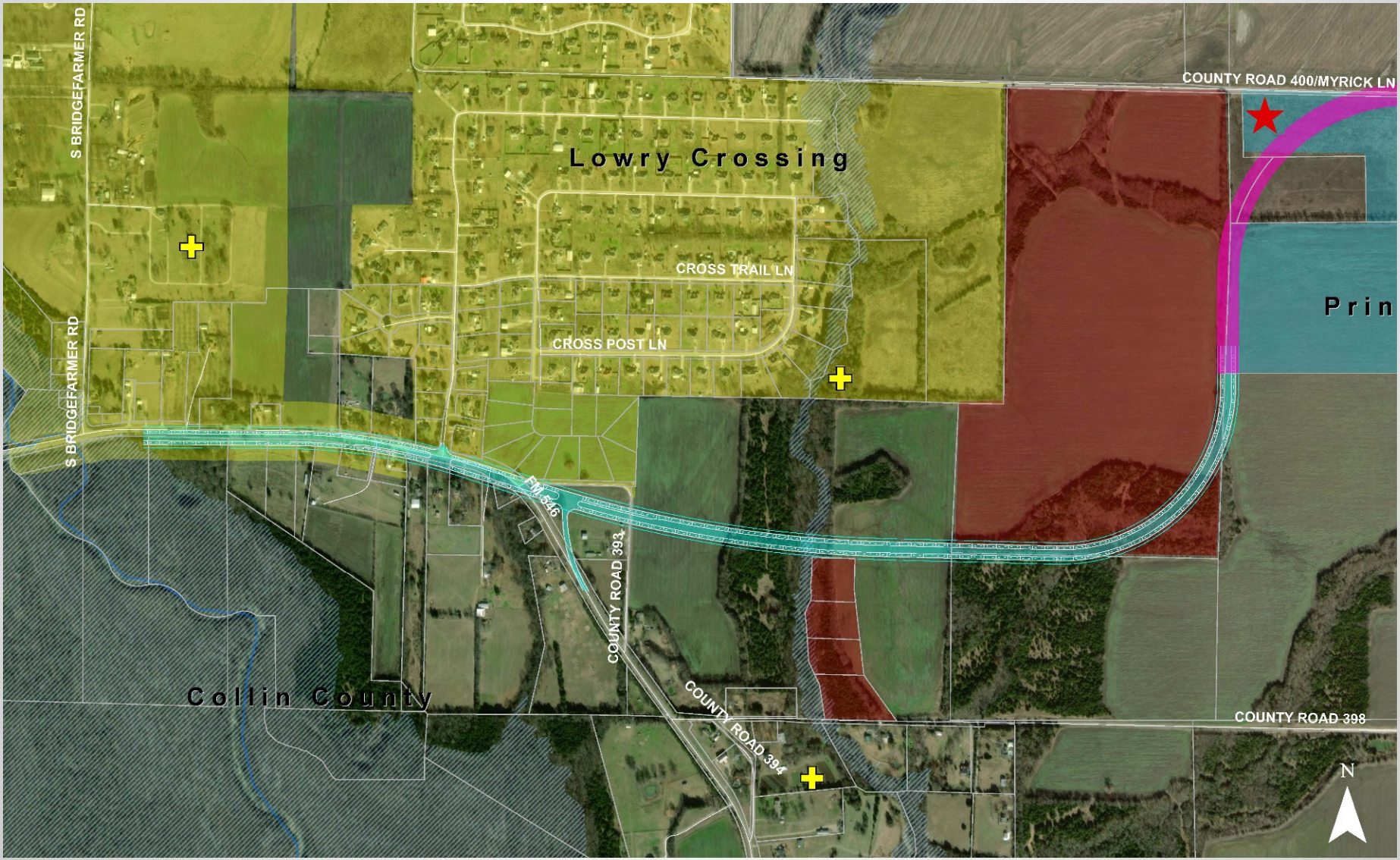
ALTERNATIVE 6



# Additional Alternatives Cont'd

## Additional Alternatives Analyzed After Public Meeting #1

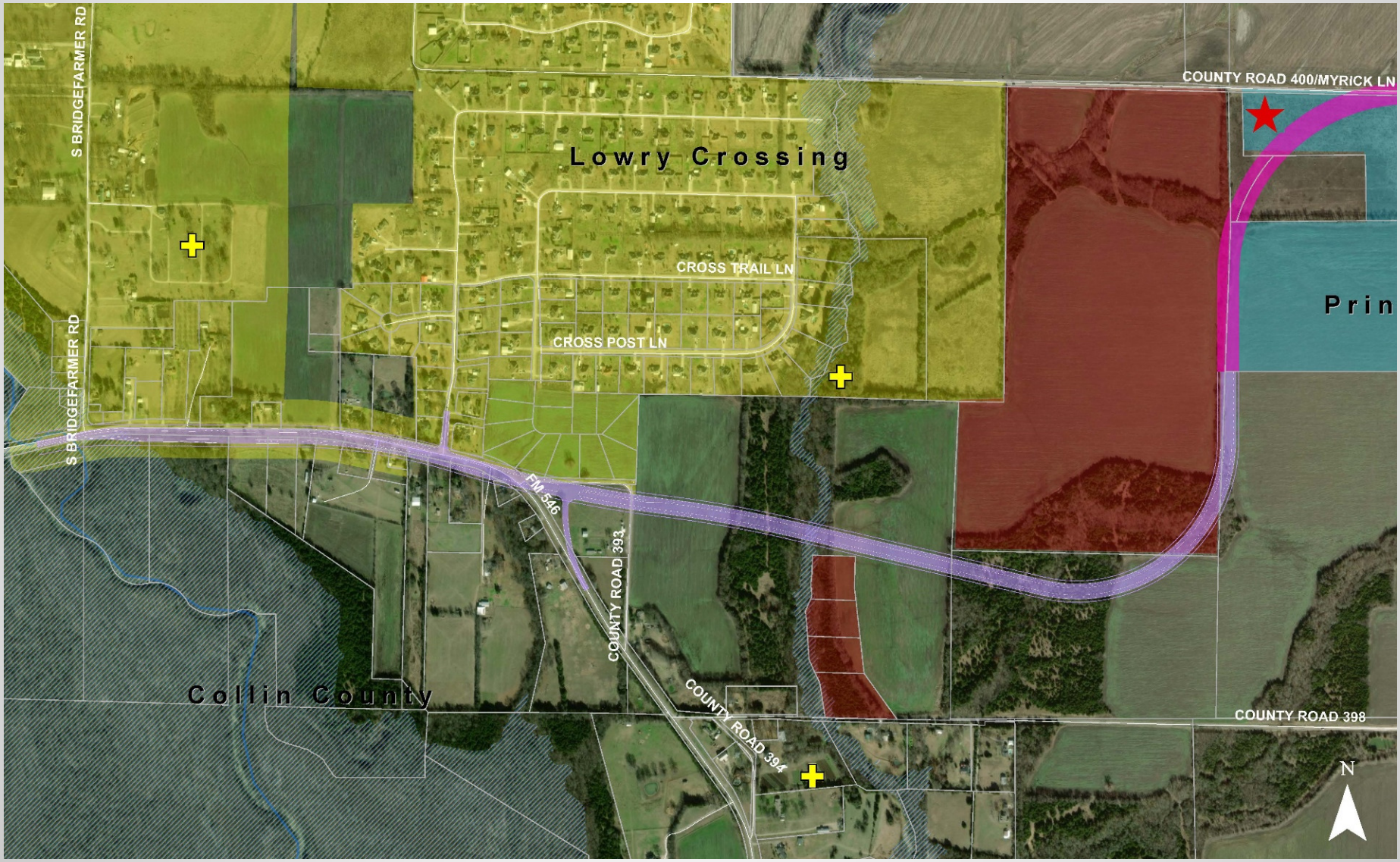
ALTERNATIVE 2-1



# Additional Alternatives Cont'd

## Additional Alternatives Analyzed After Public Meeting #1

ALTERNATIVE 6-1



# Updated Matrix – ALL Alternatives

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Environmental** | | | | | | | | | |
| Parcels Affected | N/A | 4 | 4 | 5 | 3 | 4 | 5 | 4 | 4 |
| Displacements | N/A | 1 | 3 | 5 | 3 | 3 | 1 | 3 | 1 |
| Acres of Prime Farmland Impacted | N/A | 5 | 4 | 3 | 3 | 4 | 4 | 4 | 4 |
| Structures Affected by increase in Noise (100 feet) | N/A | 3 | 3 | 5 | 2 | 3 | 3 | 3 | 3 |
| Potential Cemetery Impact | N/A | N | N | Y | N | Y | N | N | N |
| Indirect Impacts | N/A | 3 | 4 | 5 | 3 | 5 | 4 | 4 | 4 |
| **Sub-Total** | **N/A** | **16** | **18** | **24** | **14** | **20** | **17** | **18** | **16** |

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Public/Stakeholder Input** | | | | | | | | | |
| Public Preferences for Alternative | N/A | 1 | 2 | 5 | 4 | 3 | 2 | 2 | 2 |
| Property Bifurcation Impacts (Farmland; Remainders) | N/A | 4 | 2 | 3 | 5 | 5 | 3 | 2 | 3 |
| Impacts to Proposed Developments | N/A | 5 | 3 | 1 | 3 | 1 | 5 | 3 | 2 |
| Lowry Crossing Input | N/A | 5 | 3 | 1 | 2 | 1 | 5 | 3 | 3 |
| **Sub-Total** | **N/A** | **15** | **10** | **10** | **14** | **10** | **15** | **10** | **10** |

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Engineering and Constructibility** | | | | | | | | | |
| Skewed Intersections (based on severity) | N/A | 2 | 2 | 3 | 2 | 5 | 2 | 2 | 2 |
| Speed Given Curve Radii | N/A | 5 | 1 | 5 | 4 | 1 | 4 | 1 | 1 |
| Speed Given Superelevation | N/A | 5 | 2 | 5 | 5 | 1 | 1 | 2 | 2 |
| Driveway Challenges (Percentage) | N/A | 2 | 2 | 3 | 4 | 3 | 2 | 1 | 1 |
| Number of Driveways Impacted | N/A | 4 | 3 | 5 | 2 | 3 | 4 | 4 | 4 |
| Construction Sequencing Challenges | N/A | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 1 |
| Drainage Impacts | N/A | 3 | 3 | 4 | 2 | 2 | 3 | 3 | 3 |
| Impacts Recent Myrick Lane Construction | N/A | 5 | 2 | 1 | 2 | 1 | 2 | 2 | 2 |
| **Sub-Total** | **N/A** | **27** | **16** | **29** | **22** | **18** | **19** | **16** | **16** |

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Utilities and ROW** | | | | | | | | | |
| Utilities Impacted | N/A | 3 | 3 | 4 | 2 | 3 | 3 | 3 | 3 |
| Proposed ROW Needed | N/A | 3 | 4 | 4 | 5 | 5 | 4 | 4 | 4 |
| **Sub-Total** | **N/A** | **6** | **7** | **8** | **7** | **8** | **7** | **7** | **7** |

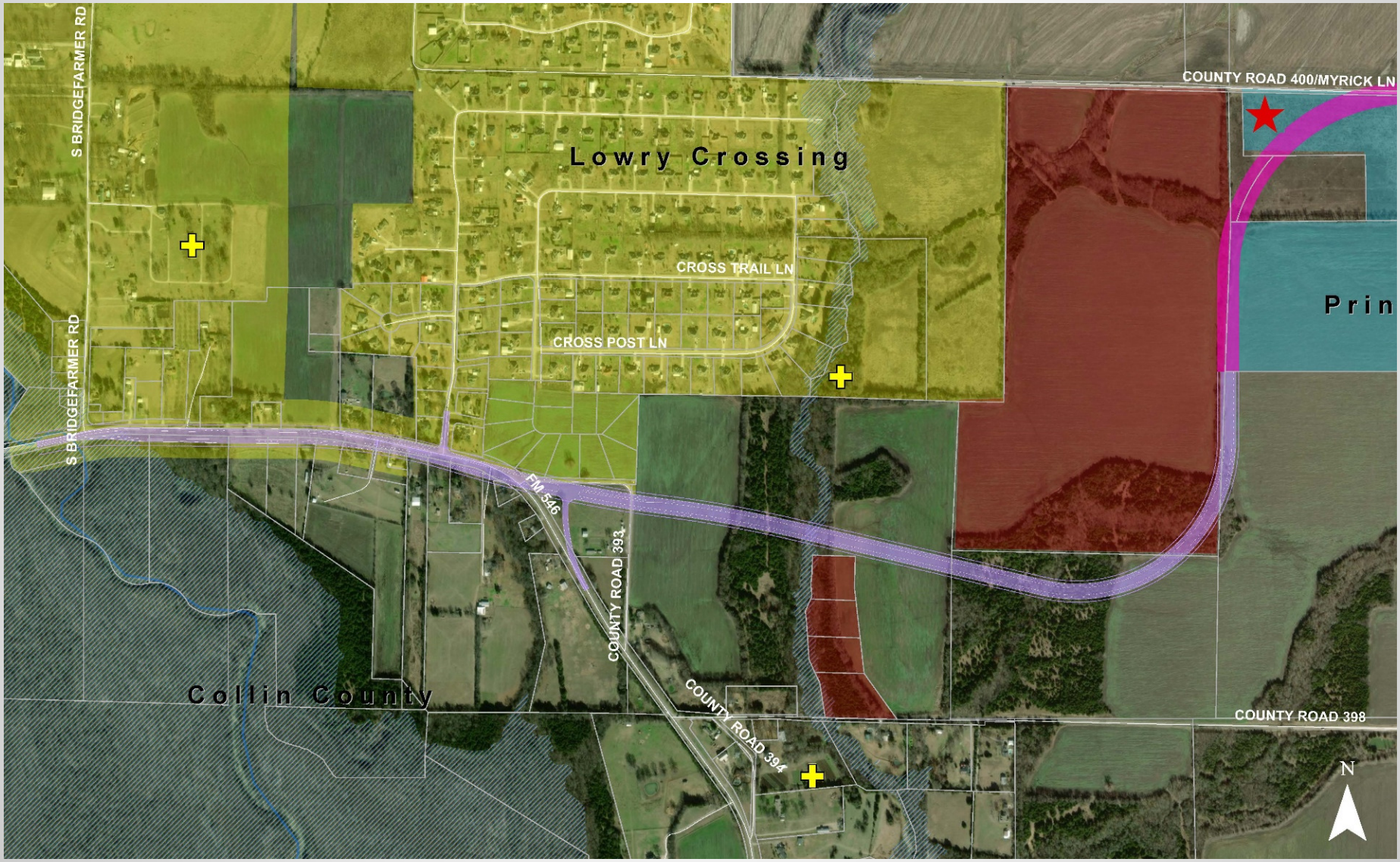
| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Cost** | | | | | | | | | |
| Cost Analysis | N/A | 1 | 1 | 5 | 3 | 5 | 1 | 1 | 1 |

| Evaluation Criteria | NO BUILD | ALT. 1 | ALT. 2 | ALT. 3 | ALT. 4 | ALT. 5 | ALT.6 | ALT.2-1 | ALT.6-1 |
|---|---|---|---|---|---|---|---|---|---|
| **Combined Rankings** | | | | | | | | | |
| **Overall Total (LOW SCORE BEST):** | **N/A** | **65** | **52** | **76** | **60** | **61** | **59** | **52** | **50** |
| **Note: No Build does not meet purpose and need of the project and is not scored.** | | | | | | | | | |

# Recommended Alternative – South of LC

## Recommended alternative presented at Public Meeting # 2 – Mar. 25, 2021

ALTERNATIVE 6-1



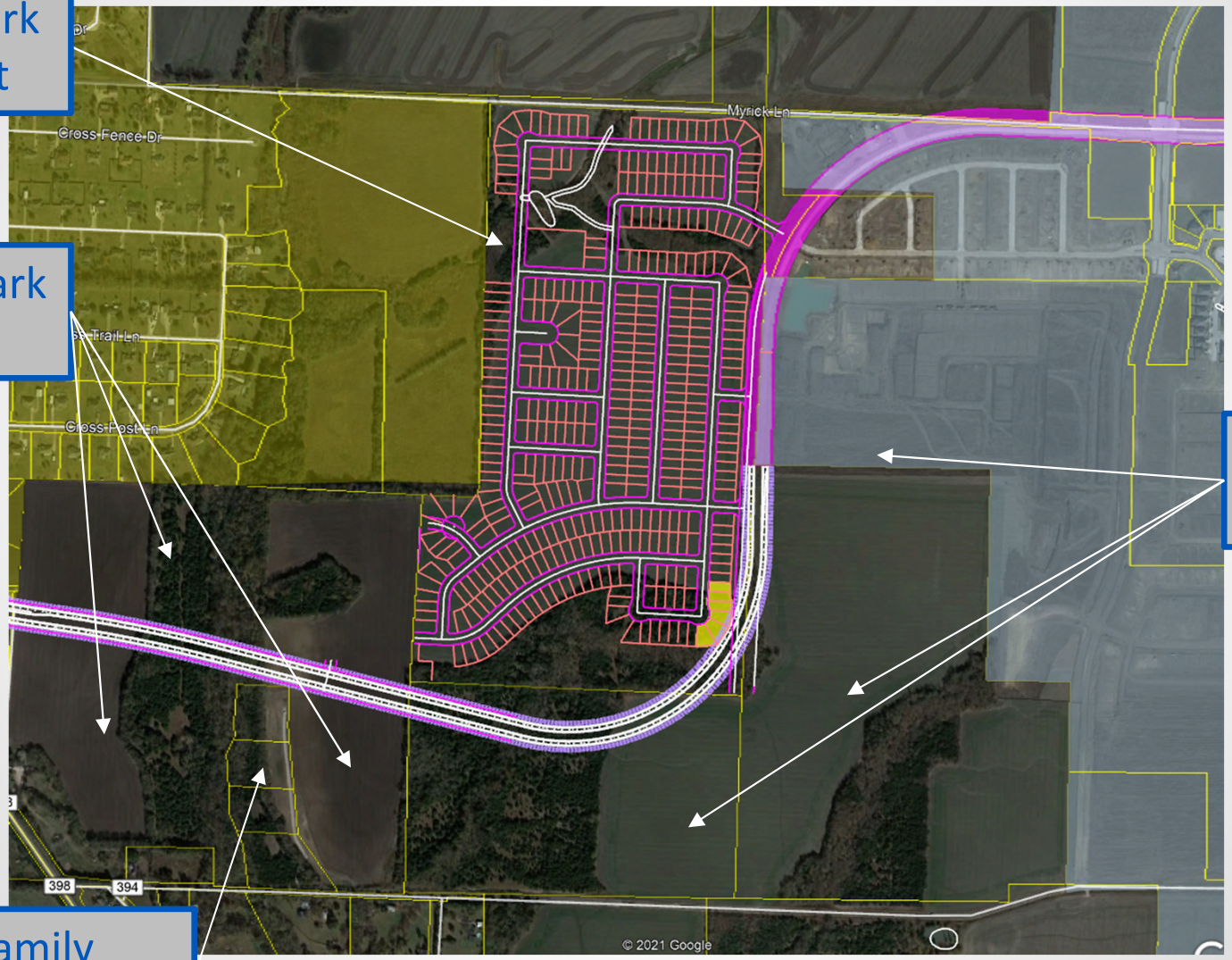
# FM546 / CR 400 Public Meeting #2 Summary

- 20 Total Comments Received
  - 4 Design/Safety Related
  - 5 Not in Support of Recommended Alignment
  - 3 Supporting the Recommended Alignment
  - 1 Question Requesting Clarification
  - 4 Repeat Comments
  - 3 Against Population Growth in the Area

# Additional Property Owner Coordination

New Landmark Development

Future Landmark Expansion

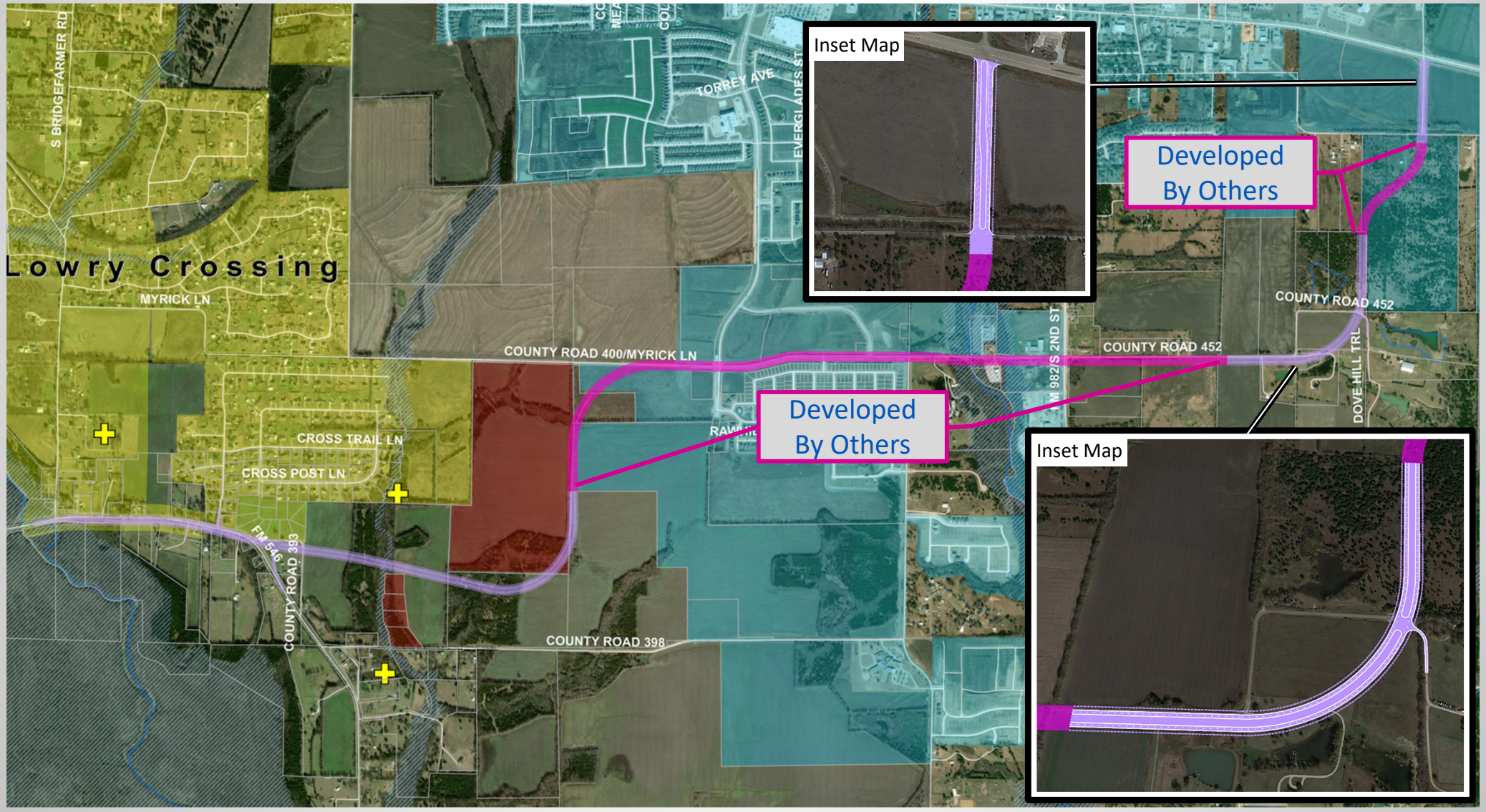



DR Horton Expanding

Shultz Family Development

# Recommended Alignment

## Recommending Alt. 6-1 to Move Forward



# Remaining Schedule – Phase I

## Next Steps

1. Begin Preliminary Design – Summer 2021
2. Begin ROW Acquisition – Est. Fall/Winter 2021
3. Begin Final Design – Est. Winter 2021
4. Construction – Unknown

# Presentation Concluded

**This Concludes Our Presentation for the Recommended Alignment for the FM 546/CR 400 Corridor Study.**