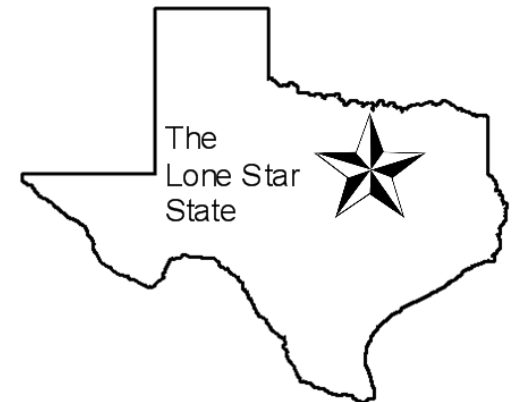




# Case Study: The McAllister Freeway in San Antonio

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September 13, 2022



# Introduction

- INCOSE Vision 2035
- Why this case study?
- Case Study
- Discussion

# INCOSE Vision 2035



# INCOSE Vision 2035

**SYSTEMS ENGINEERING AIMS TO ENSURE THE PIECES WORK TOGETHER TO  
ACHIEVE THE OBJECTIVES OF THE WHOLE.**

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- ARCHITECT BALANCED SOLUTIONS THAT SATISFY DIVERSE STAKEHOLDER NEEDS FOR CAPABILITY, DEPENDABILITY, SUSTAINABILITY, SOCIAL ACCEPTABILITY, AND EASE OF USE
- ADAPT TO EVOLVING TECHNOLOGY AND REQUIREMENTS
- MANAGE COMPLEXITY AND RISK

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# Why This Case Study?



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[https://dmn-dallas-news-prod.cdn.arcpublishing.com/resizer/Zq4HKye0OPZhsWI3p5oBFTSoSfc=/1660x0/smart/filters:no\\_upscale\(\)/cloudfront-us-east-1.images.arcpublishing.com/dmn/5JRXFA6UPZEKPLZPZZR6LZP56I.jpg](https://dmn-dallas-news-prod.cdn.arcpublishing.com/resizer/Zq4HKye0OPZhsWI3p5oBFTSoSfc=/1660x0/smart/filters:no_upscale()/cloudfront-us-east-1.images.arcpublishing.com/dmn/5JRXFA6UPZEKPLZPZZR6LZP56I.jpg)

# Why This Case Study?

Programs and projects are increasing in complexity.

- Diverse stakeholder needs
- Capability & Dependability of road network
- Sustainability of environment
- Social acceptability to neighborhoods
- Risk with cost, schedule, politics, etc.



# Case Study

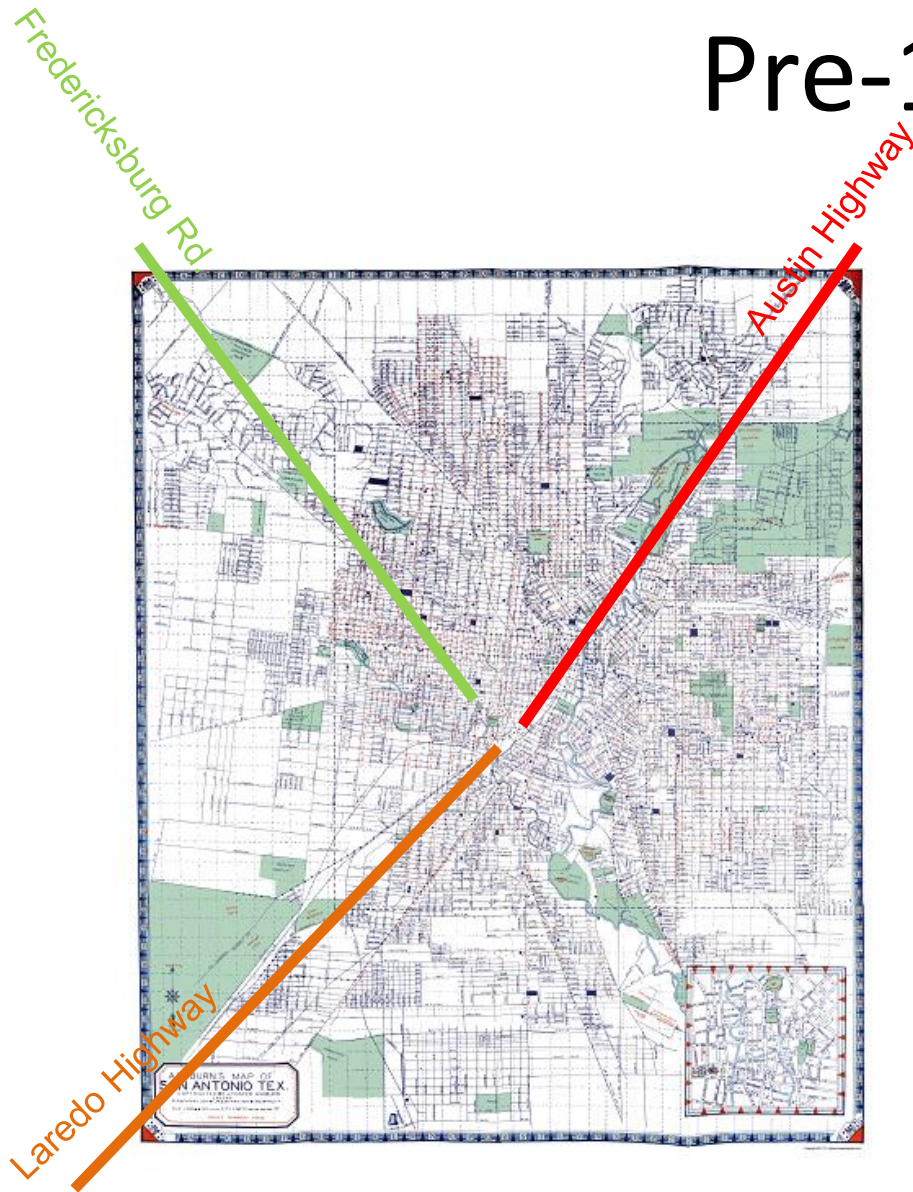


U.S. 281 Freeway – “McAllister Freeway”

San Antonio, Texas

1955 - 2010

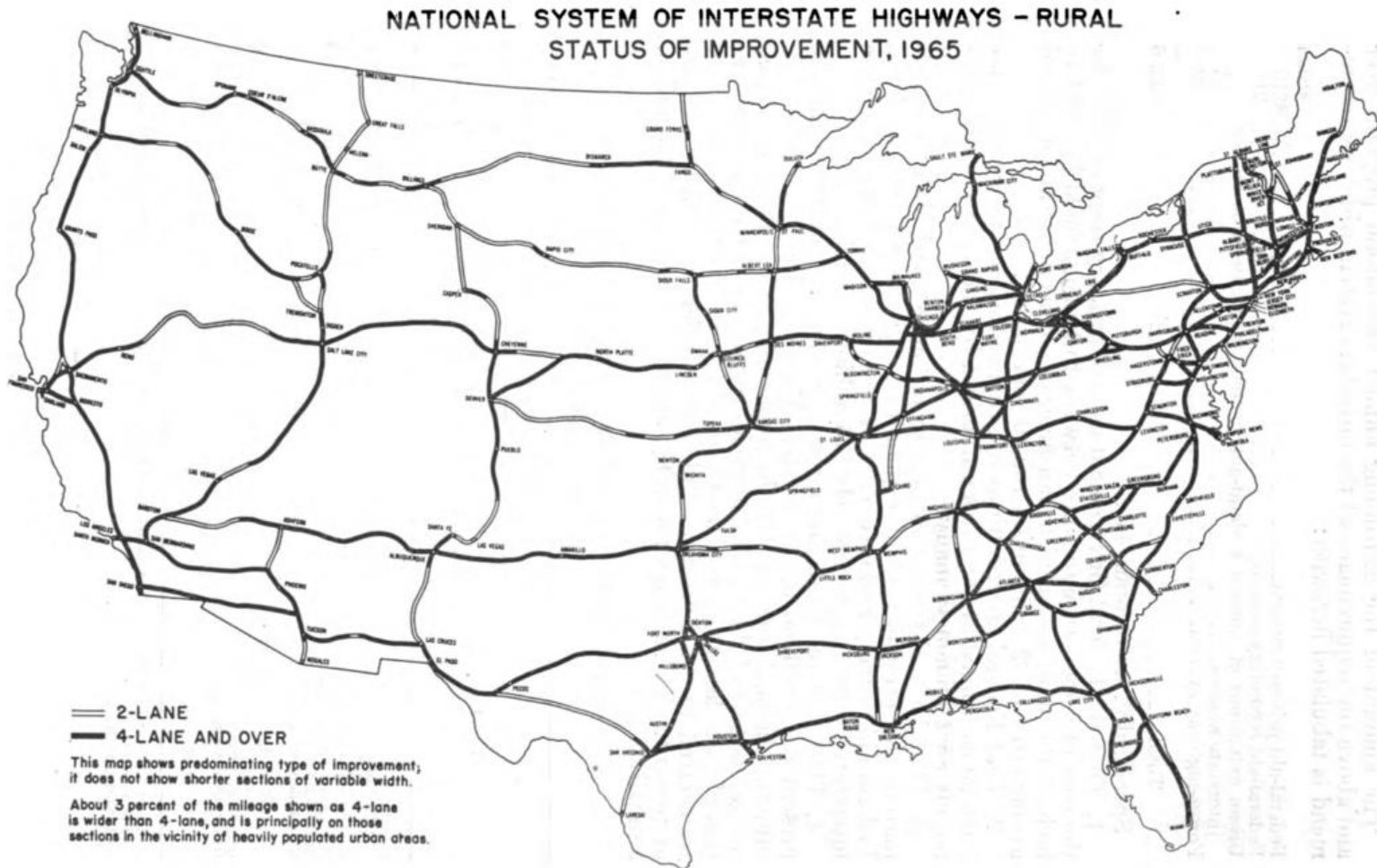
# Pre-1950s



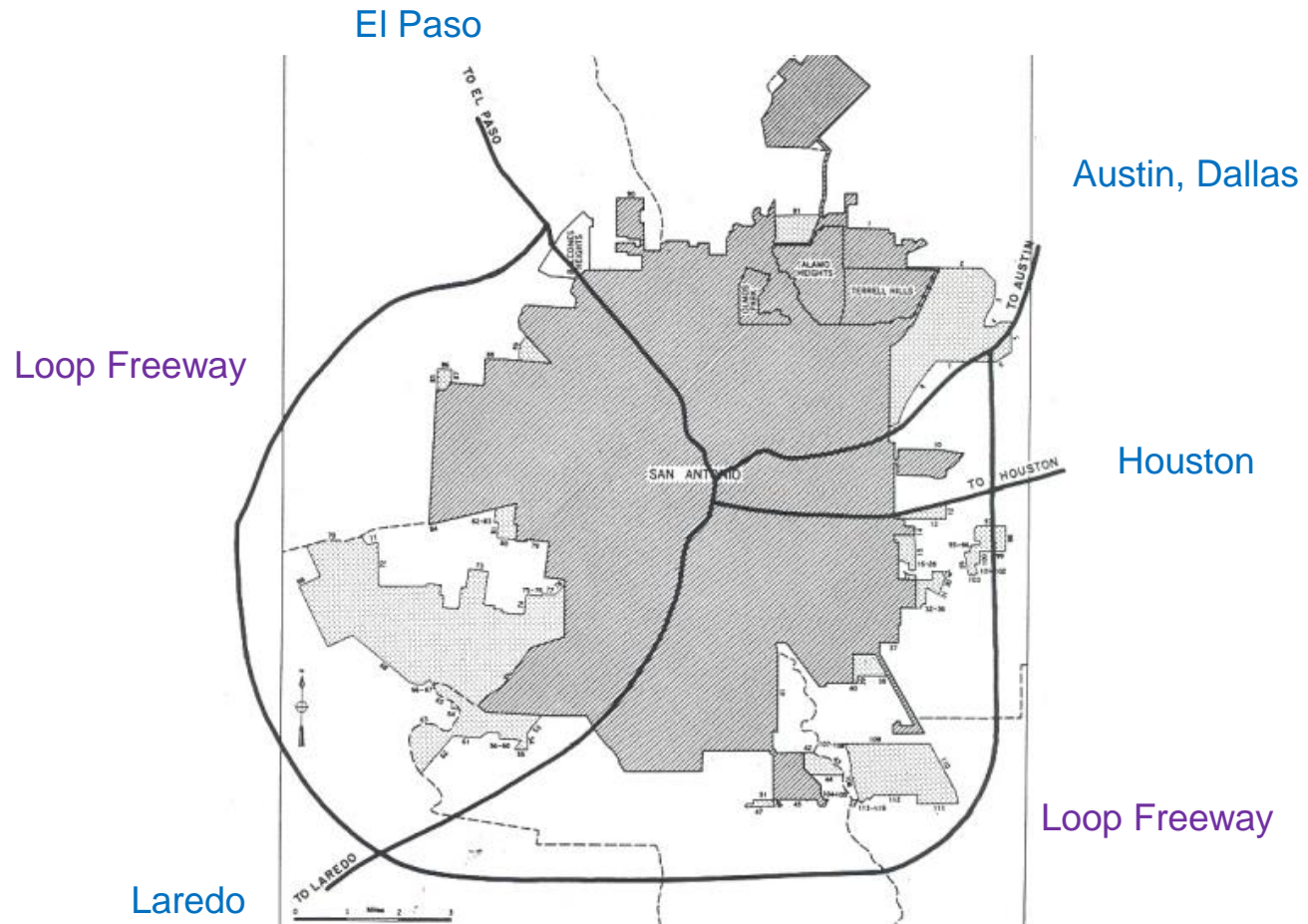
- First trails were laid by Spanish. Roads built over these.
  - Austin Highway
  - Laredo Highway
  - Fredericksburg Road
- 1930s – Interregional Highways?
- World War II delayed progress.
- 1946 – Civic and business leaders discussed development of interregional highways

# Federal-aid Highway Act

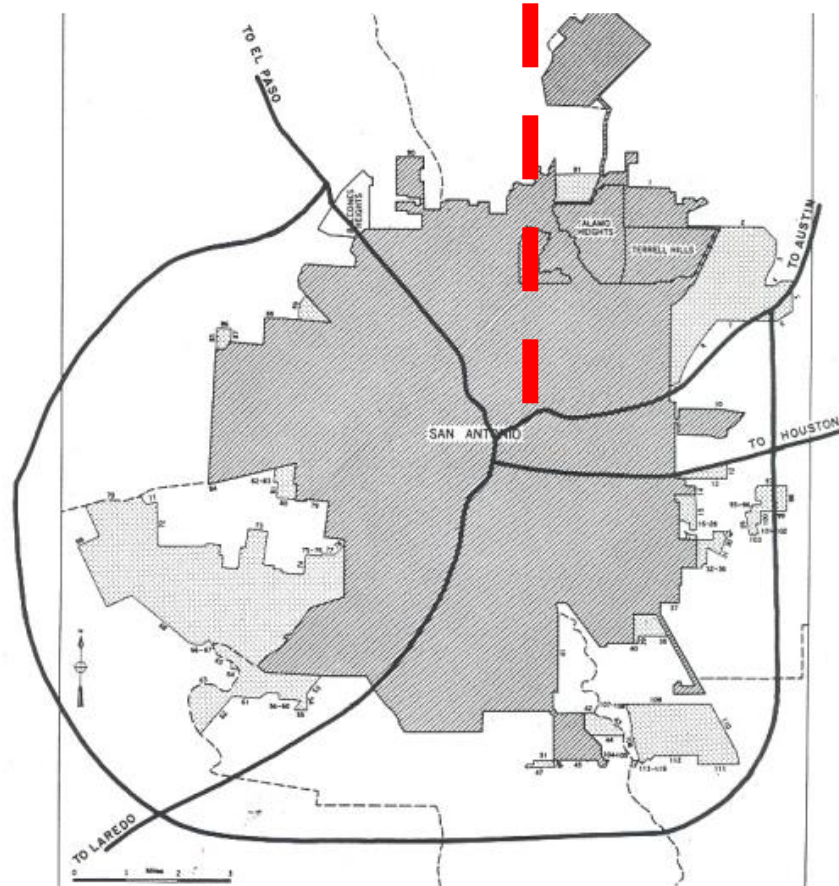
1956: Federal-aid Highway Act (Signed by President Eisenhower)



# 1950s

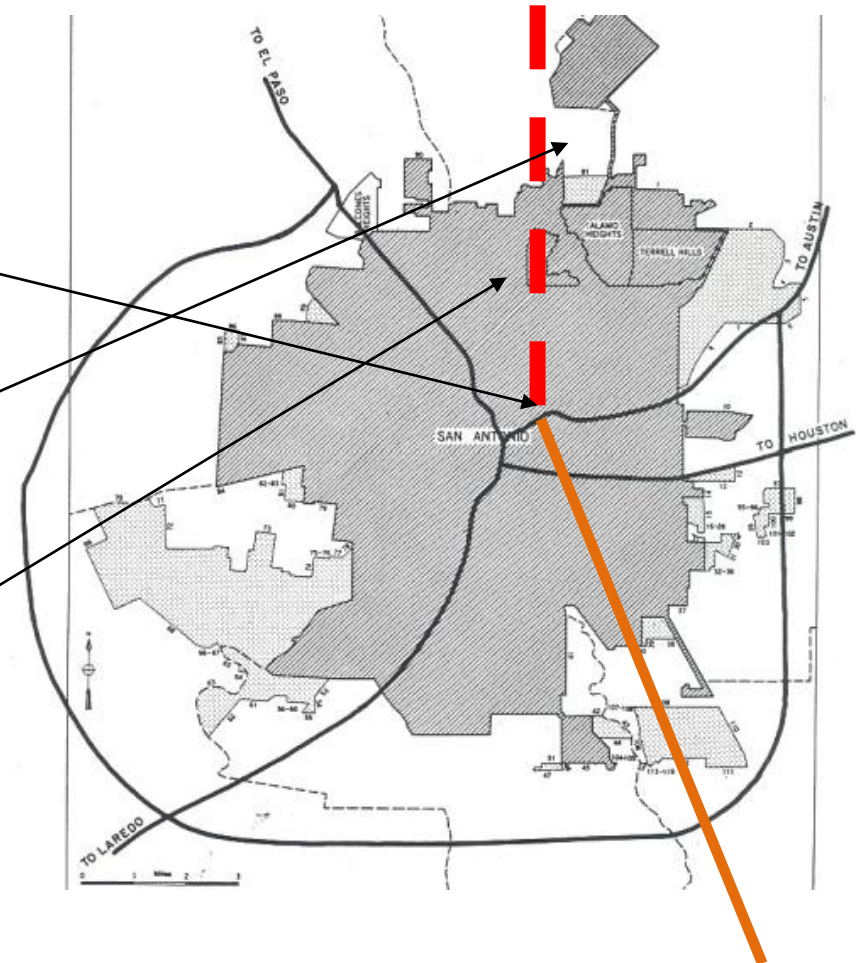


# Mid-1950s: North Central Freeway?



# Early Design Considerations

1. Must start at I-35 & I-37 interchange in Downtown San Antonio.
2. Must provide connection with San Antonio International Airport.
3. Minimal commercial & residential displacement.



# U.S. 281 Routes Considered in 1955

## Route #1 – San Pedro Ave.

- Original routing of U.S. 281 in San Antonio.
- Rejected because it did not connect with San Antonio Airport.

## Route #2 – McCullough Ave.

- Local street that paralleled San Pedro Ave.
- Rejected due to expensive commercial & residential displacement required.

## Route #3 – Broadway Ave.

- Local street that paralleled San Pedro Ave.
- Rejected due to expensive commercial & residential displacement required, AND lack of connection to San Antonio Airport.



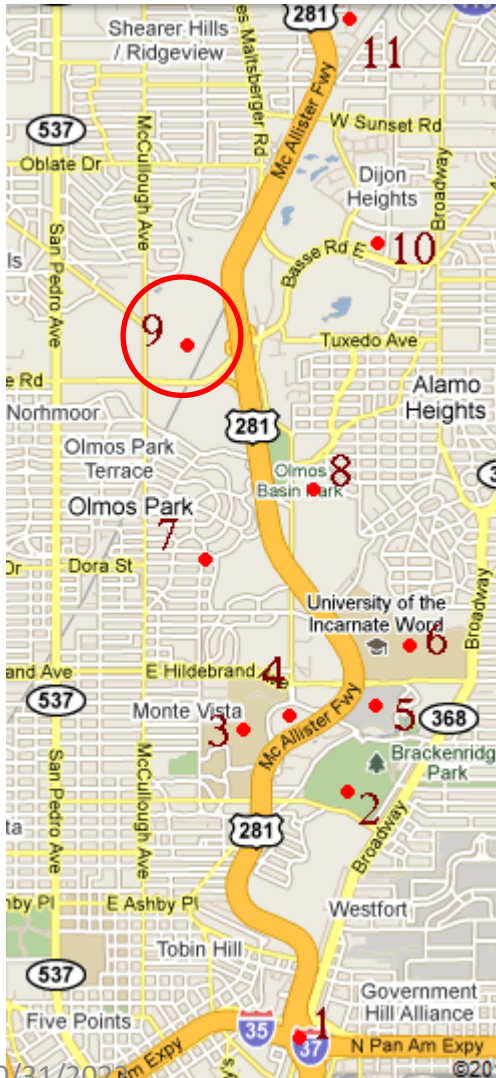
So, to meet original design considerations, a routing between Route #2 and Route #3 was considered.

# U.S. 281 Final Routing in 1961



1. I-35 & I-37 Interchange.
2. Brackenridge Park.
3. Trinity University.
4. Alamo Stadium.
5. Sunken Gardens Amphitheatre.
6. The University of the Incarnate Word.
7. Olmos Park.
8. Olmos Basin Dam.
9. **Olmos Basin Park.**
10. Alamo Heights.
11. San Antonio International Airport.

# Olmos Basin Park



- Jan. 10, 1961 – San Antonio residents approved bond issue to purchase strip of land through Olmos Basin Park.
- Sierra Club & San Antonio Conservation Society protest routing of freeway through the Olmos Basin Park.

# Project Segments

## Northern Segment

## Central Segment

## Southern Segment

- Project broken into three segments: a northern segment, a central segment, & a southern segment.
- 1969 – Construction on northern & southern segments begins.
- Central segment stalled due to debate about routing.
- Environmental groups file lawsuit.



# Environmental Lawsuit

## Northern Segment

## Central Segment

## Southern Segment

- May 1971 – Federal court order halts the entire project.
- 1972 – U.S. Supreme Court upholds rulings from lower courts.
- All Federal funding for U.S. 281 project is revoked.
- Work on entire project is halted.



# Will Construction Resume?

- 1973 – Senators John Tower & Lloyd Bentson, both from Texas, sponsored legislation in U.S. Congress to allow project to be built without Federal funds.
- Dec. 10, 1973 – Legislation passes both houses of Congress. Signed by President.

# Construction Resumes

## Northern Segment

## Central Segment

## Southern Segment

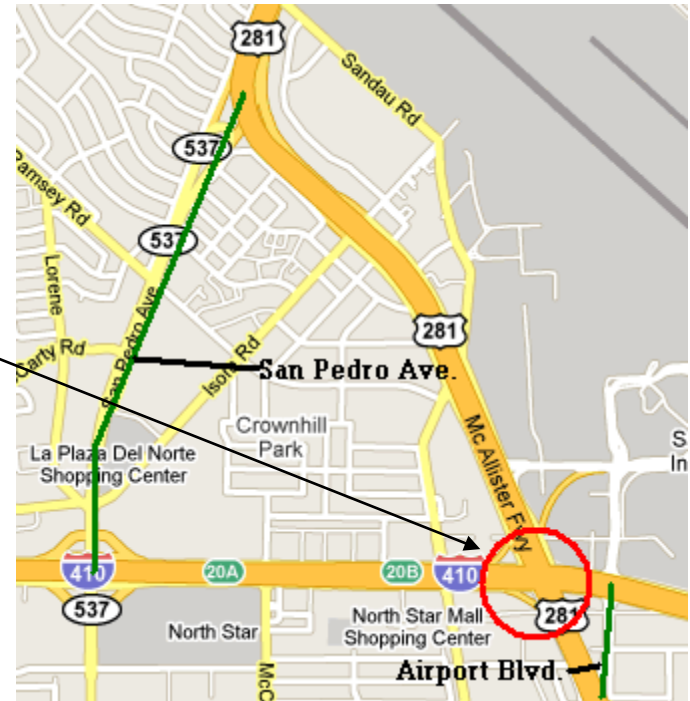
- Construction on U.S. 281 resumes on northern & southern segments.
- 1974 – Environmental groups sue state of Texas to halt the project.
- Entire project suspended again.
- July 1974 – Lawsuit dismissed.
- Nov. 13, 1974 – Work resumes on all segments of U.S. 281.
- Feb. 7, 1978 – U.S. 281 freeway opened to traffic.



The project was incomplete!

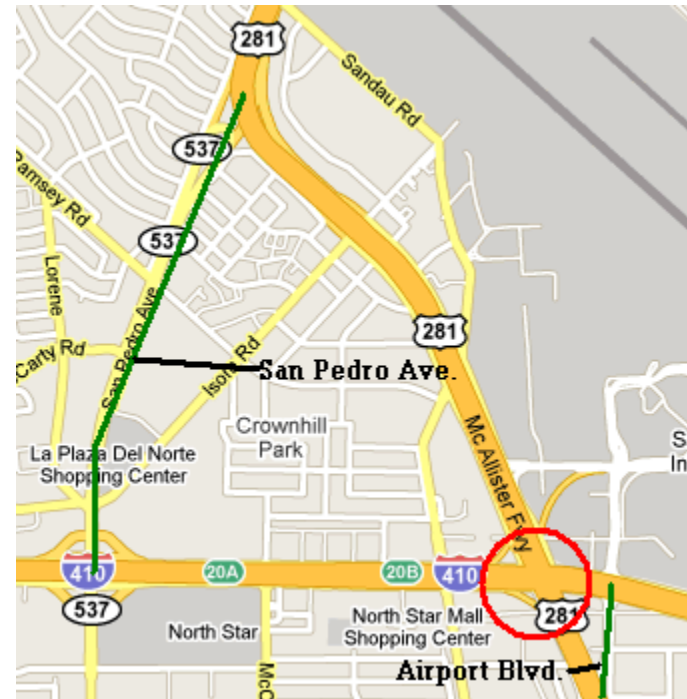
# Interchange Between U.S. 281 & I-410

An interchange was needed between U.S. 281 and I-410 (Loop 410) at the San Antonio International Airport.



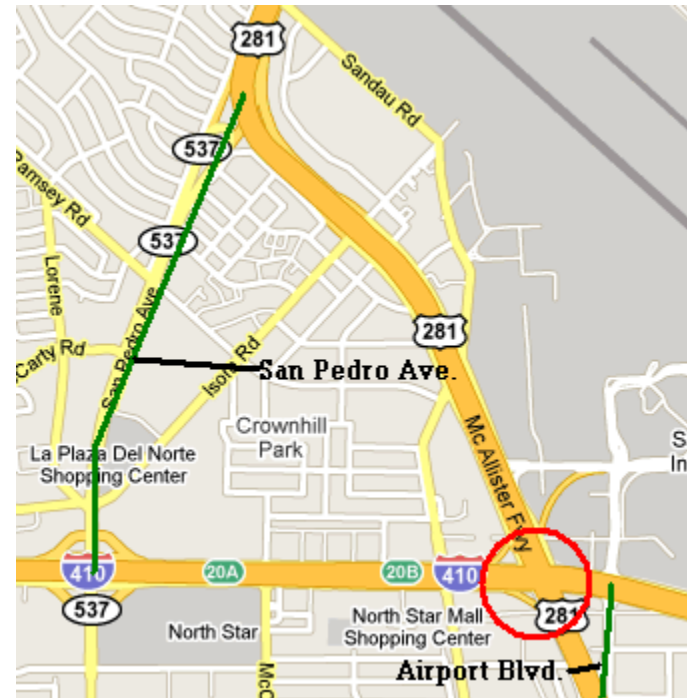
# Interchange Between U.S. 281 & I-410

- 1964 – Interchange was planned between U.S. 281 & I-410.
- Early 1970s – San Antonio condemned land for interchange.



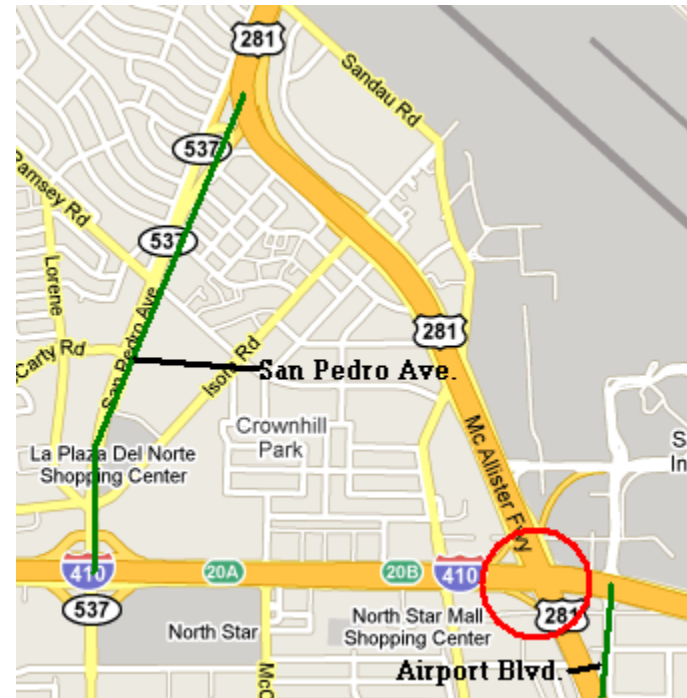
# Interchange Between U.S. 281 & I-410

- Mid 1970s – U.S. 281 project appeared dead.
- Owners of land petition San Antonio.
  - Purchase land.
  - Release it for development.



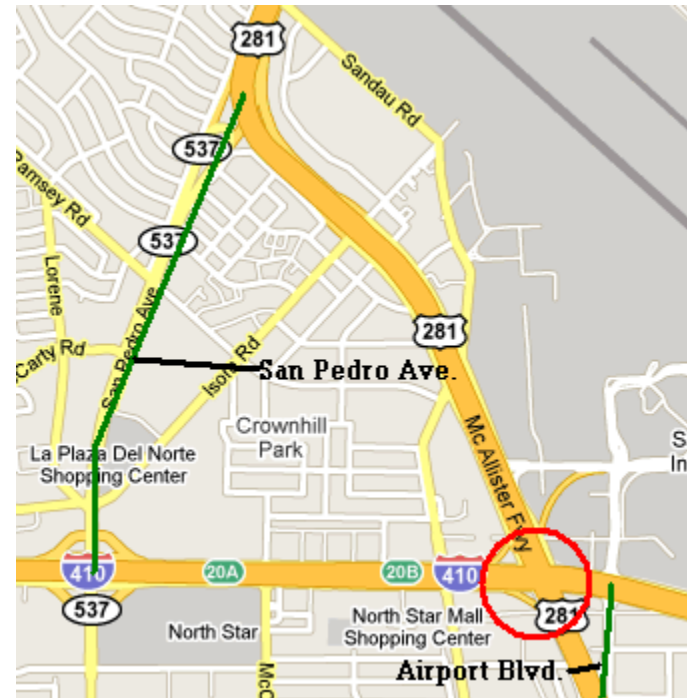
# Interchange Between U.S. 281 & I-410

- San Antonio chose to release the land.
  - Commercial development appears almost overnight.
- Late 1970s – U.S. 281 freeway is completed.
  - Land has risen in value and interchange is scrapped.



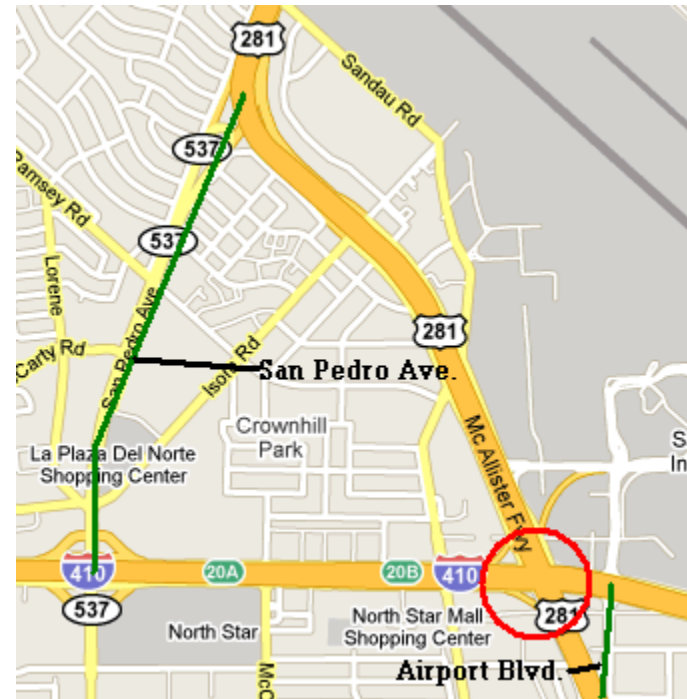
# Interchange Between U.S. 281 & I-410

- 1970s-1980s: Local roads handle traffic between the freeways.
  - U.S. 281 North: San Pedro Ave.
  - U.S. 281 South: Airport Blvd.
- 1990s – Local streets become overburdened with freeway traffic.



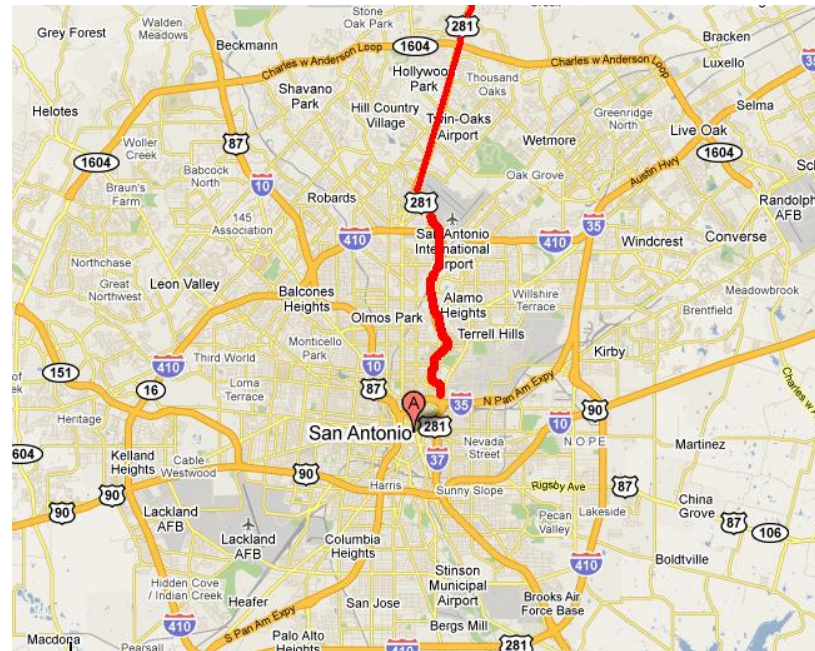
# Interchange Between U.S. 281 & I-410

- 2005 – Construction on interchange begins.
- 2010 – Interchange between U.S. 281 & I-410 completed!





# U.S. 281: Downtown to Loop 1604



<https://www.youtube.com/watch?v=izqWgl1dHYQ>

# Conclusion



# References

- The San Antonio Area Freeway System Website:  
<https://www.texashighwayman.com/sanfwys.shtml>
- Google Maps: <https://www.google.com/maps>