



Boulder Avenue North of 2nd Street, Tulsa 5/24/2022

## Safe Streets For All - Road Diets

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Transportation Division  
INCOG

Presented to:  
Oklahoma Department of Transportation  
Everyday Counts 3 Webinar

**Safety is a Journey - Not a Destination**





U.S. Department of Transportation  
Federal Highway Administration

OFFICE OF SAFETY

# Proven Safety Countermeasures



## Safety Benefits:

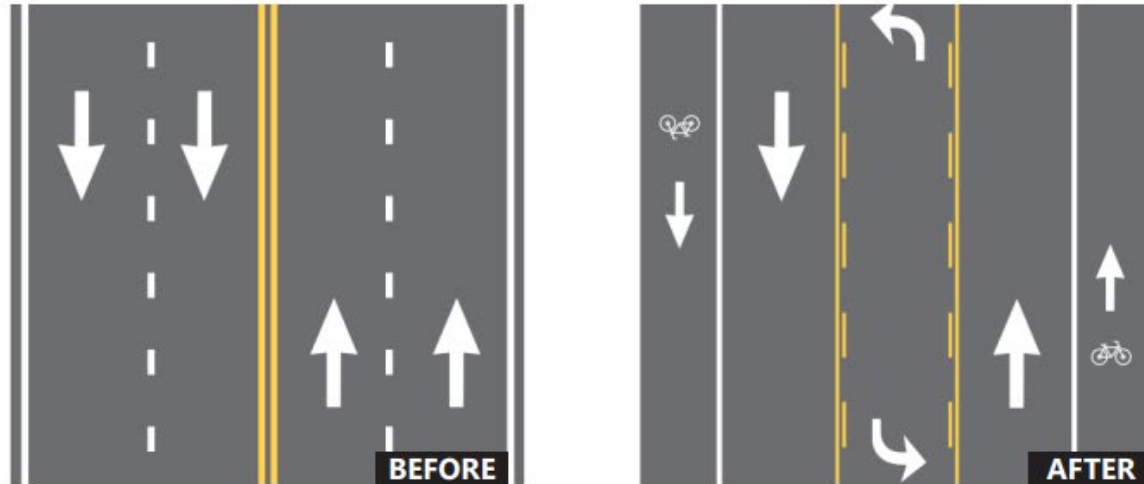
4-Lane to 3-Lane  
Road Diet Conversions

**19-47%**

reduction in total crashes.<sup>1</sup>

## Road Diets (Roadway Reconfiguration)

A Road Diet, or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life. A Road Diet typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL).



# FHWA GUIDANCE ON PROVEN SAFETY COUNTER (PSC) MEASURES 2008 – 2021

## 2021

1. Rectangular Rapid Flashing Beacon (RRFB)
2. Crosswalk Visibility Enhancements
3. Bicycle Lanes
4. Lighting (Intersections and Segments)
5. Pavement Friction Management (High Friction Surface Treatments and Continuous Pavement Friction Measurement)
6. Wider Edge Lines
7. Variable Speed Limits
8. Speed Safety Cameras
9. Appropriate Speed Limits for All Road Users

## 2017

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6. USLIMITS2 (a tool to aid practitioners in determining appropriate speed limit recommendations).

## 2012

1. Safety Edge
2. Roundabouts
3. Corridor Access Management
4. Backplates with Retroreflective Borders
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6. Enhanced Delineation and Friction for Horizontal Curves
7. Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
8. Pedestrian Hybrid Beacon
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## 2008

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9. [Walkways](#)

Source: <https://safety.fhwa.dot.gov/provencountermeasures/>

**What type of area is the roadway located?**

- Urban
- Suburban
- Rural

**Which focus area is being addressed?**

- Roadway Departure
- Intersection
- Pedestrian
- Bicyclist
- Speed Management

**What problem is being addressed?**




- Inadequate Visibility, Conspicuity, or Sight Distance
- Excessive Vehicular Conflicts
- Congestion
- Excessive Speeds
- Non-Compliance (yielding right-of-way)
- No Separation of Users
- Vulnerable Users not Considered
- Driver Inattention (distracted/drowsy)
- Driver Impairment (alcohol/drugs)

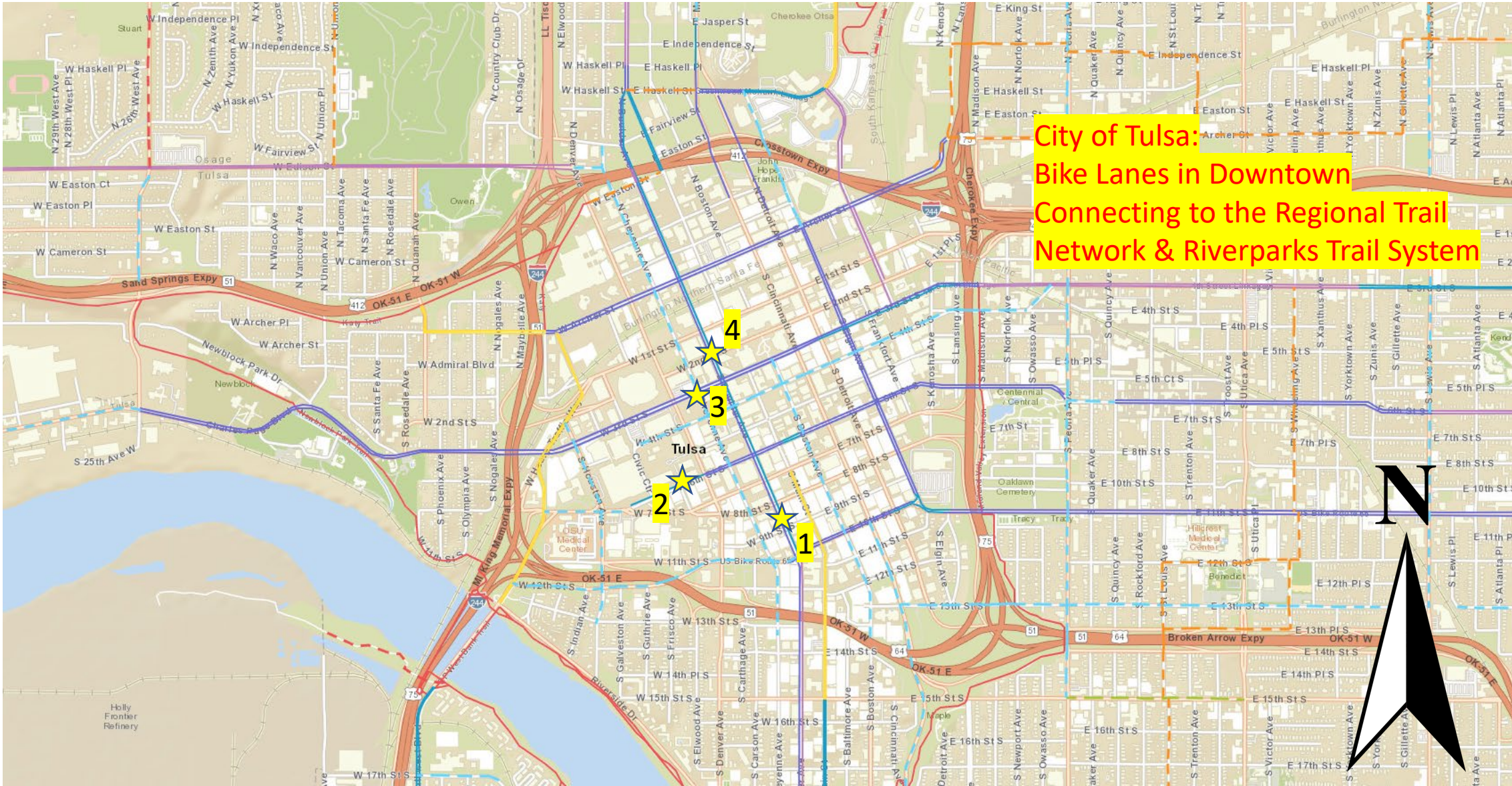
# PFC Screening Tool

Source:

<https://safety.fhwa.dot.gov/provencountermeasures/>

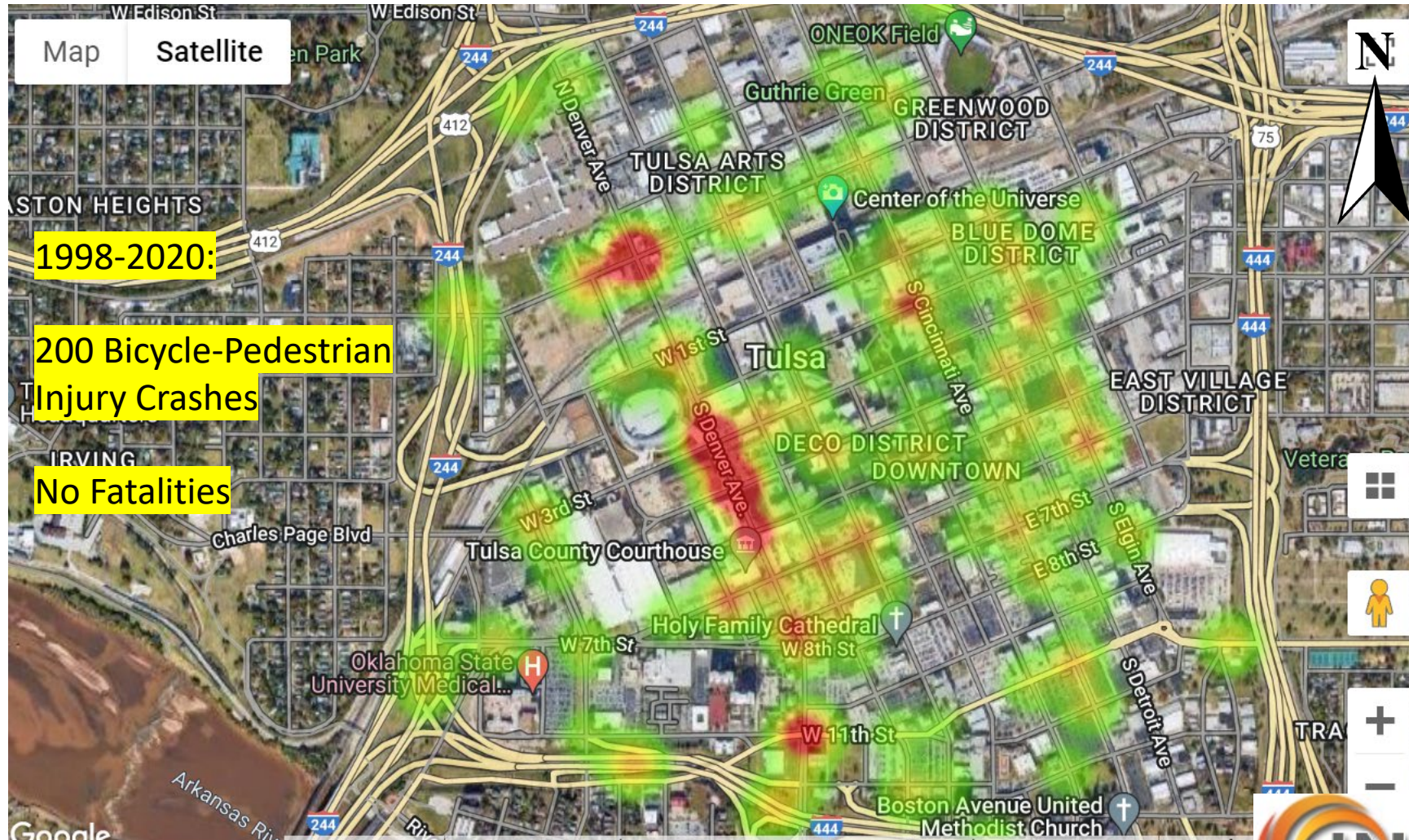
3 results:

	Local Road Safety Plans
	Road Diets (Roadway Reconfiguration)
	Road Safety Audit

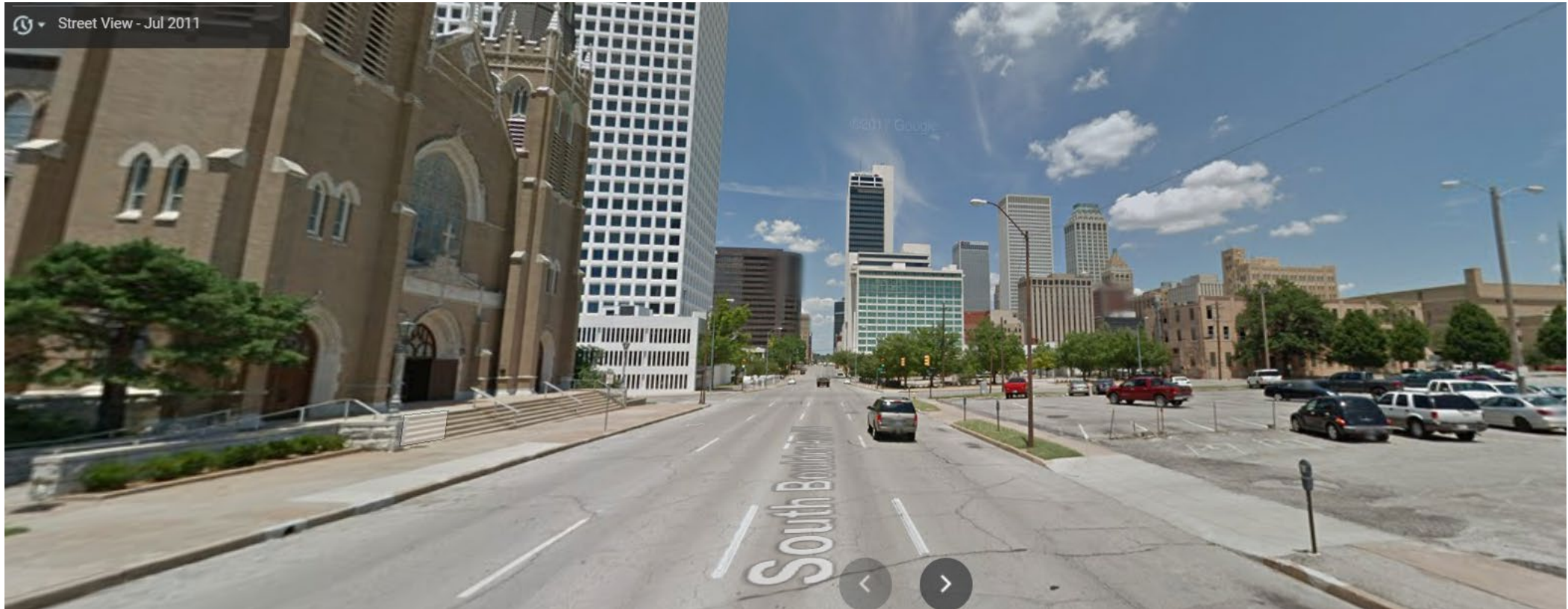


City of Tulsa:  
Bike Lanes in Downtown  
Connecting to the Regional Trail  
Network & Riverparks Trail System

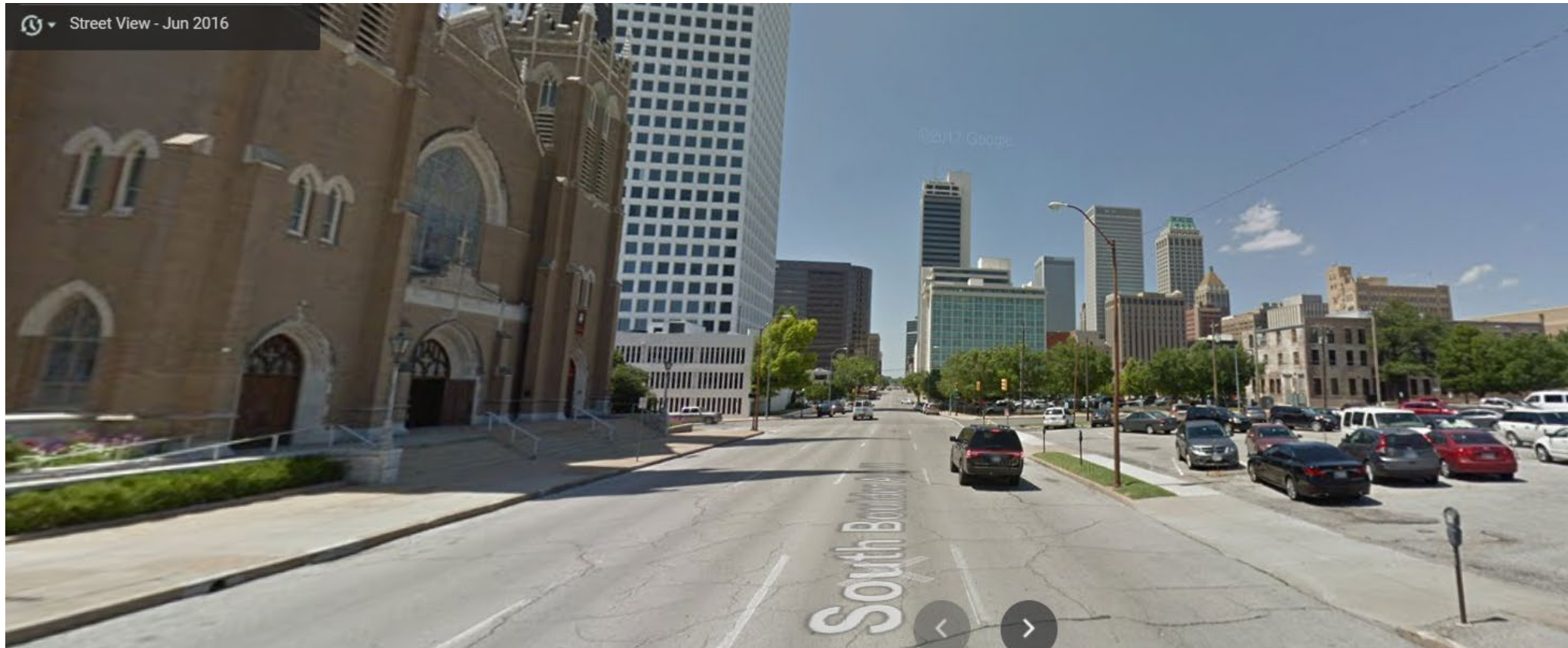




2011 – (1) Boulder Ave Between 8<sup>th</sup> Street & 9<sup>th</sup> Street – Holy Family Cathedral



2016 – (1) Boulder Ave Between 8<sup>th</sup> Street & 9<sup>th</sup> Street





2017 – (1) Boulder Ave Between 8<sup>th</sup> Street & 9<sup>th</sup> Street



2018 – (1) Boulder Ave Between 8<sup>th</sup> Street & 9<sup>th</sup> Street



Boulder Avenue Conversion  
One-way to two-way plans - Feb 2019  
Walkability Study - Dec 2019  
Striping Plans - 2019-2020  
Revised in 12/2019

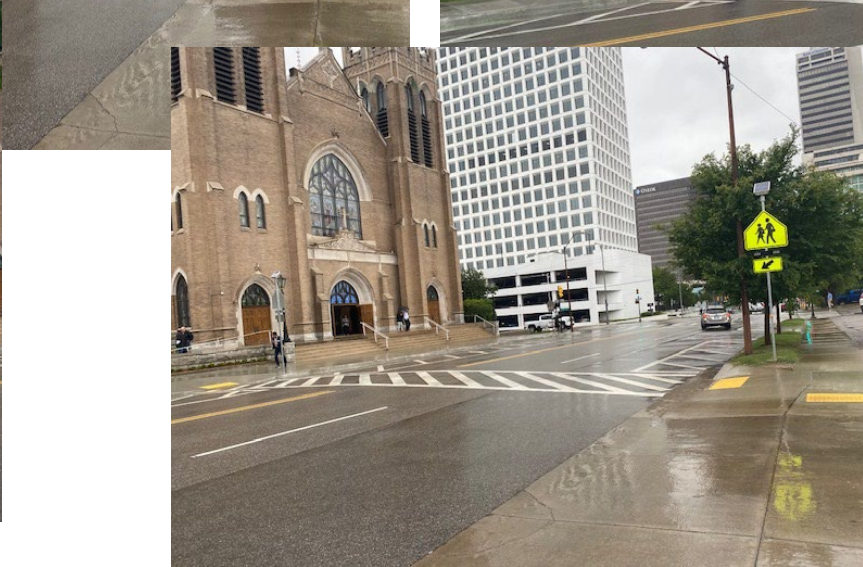
2021 – (1) Boulder Ave Between 8<sup>th</sup> Street & 9<sup>th</sup> Street





(1) Holy Family  
Cathedral, Tulsa  
5/23/2022

South Boulder  
between 8<sup>th</sup> & 9<sup>th</sup>  
Streets



2011 – (2) 6<sup>th</sup> Street: Civic Center – Elwood



2019 – (2) 6<sup>th</sup> Street: Civic Center – Elwood



2022 – (2) 6<sup>th</sup> Street: Civic Center – Elwood





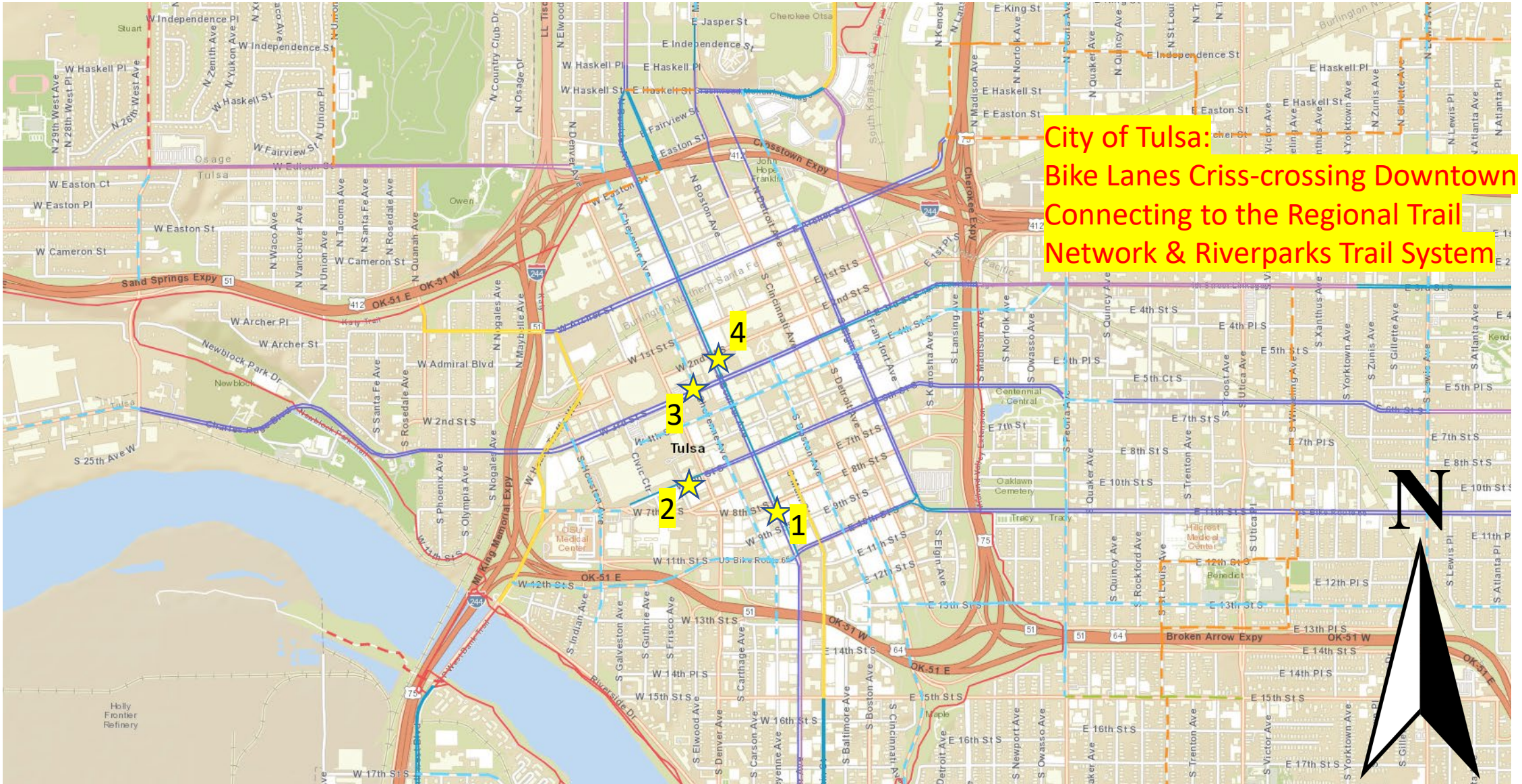


2018 – (3) 3rd Street & Denver Ave



2019 – (3) 3rd Street & Denver Ave





City of Tulsa:  
Bike Lanes Criss-crossing Downtown  
Connecting to the Regional Trail  
Network & Riverparks Trail System



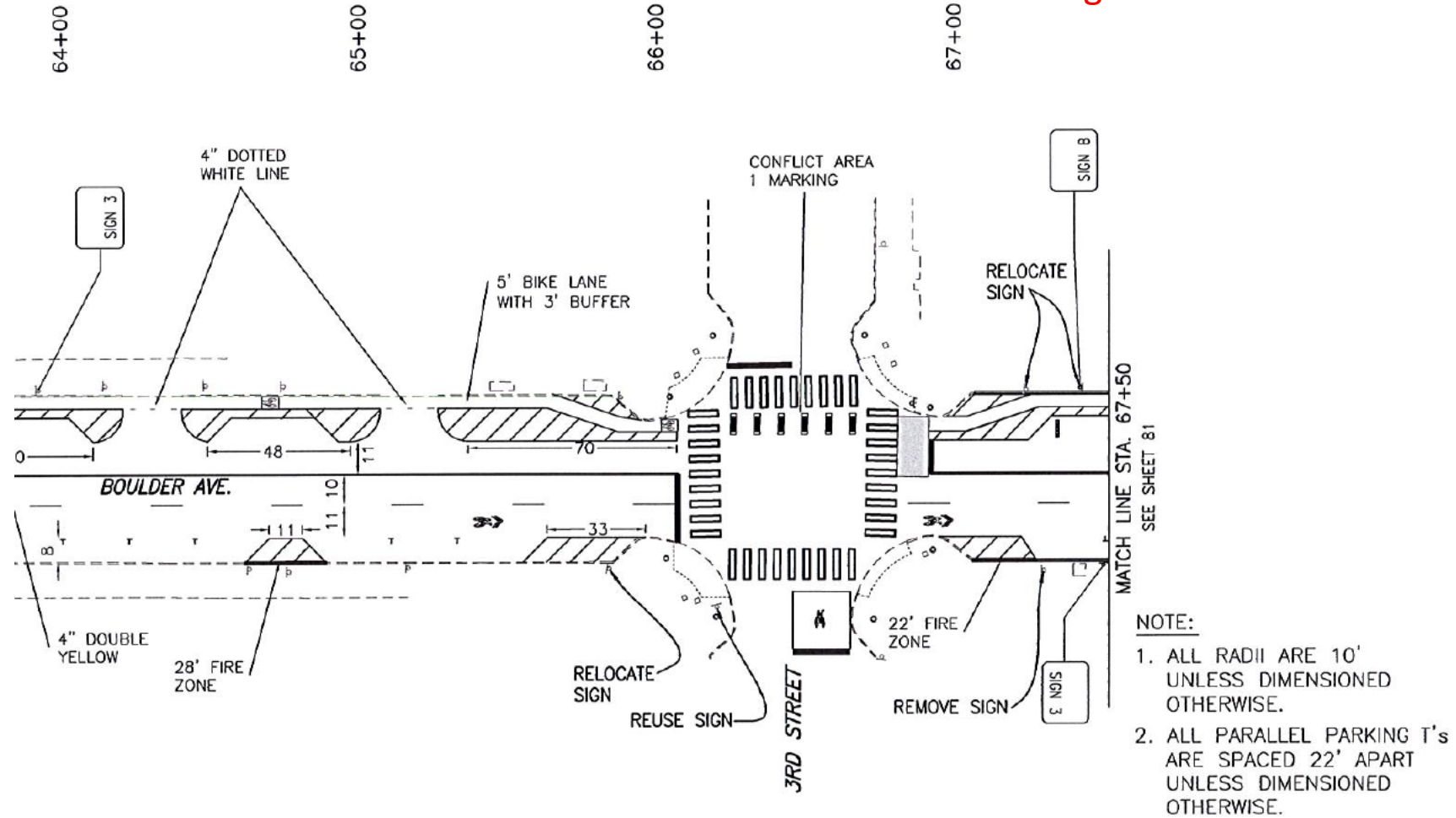
2007: (4) 3<sup>rd</sup> & Boulder Intersection – Federal Building



2014: (4) 3<sup>rd</sup> & Boulder Intersection – Federal Building



## 3<sup>rd</sup> & Boulder Intersection – Federal Building – Bike Lane Design



2021: (4) 3<sup>rd</sup> & Boulder Intersection – Federal Building

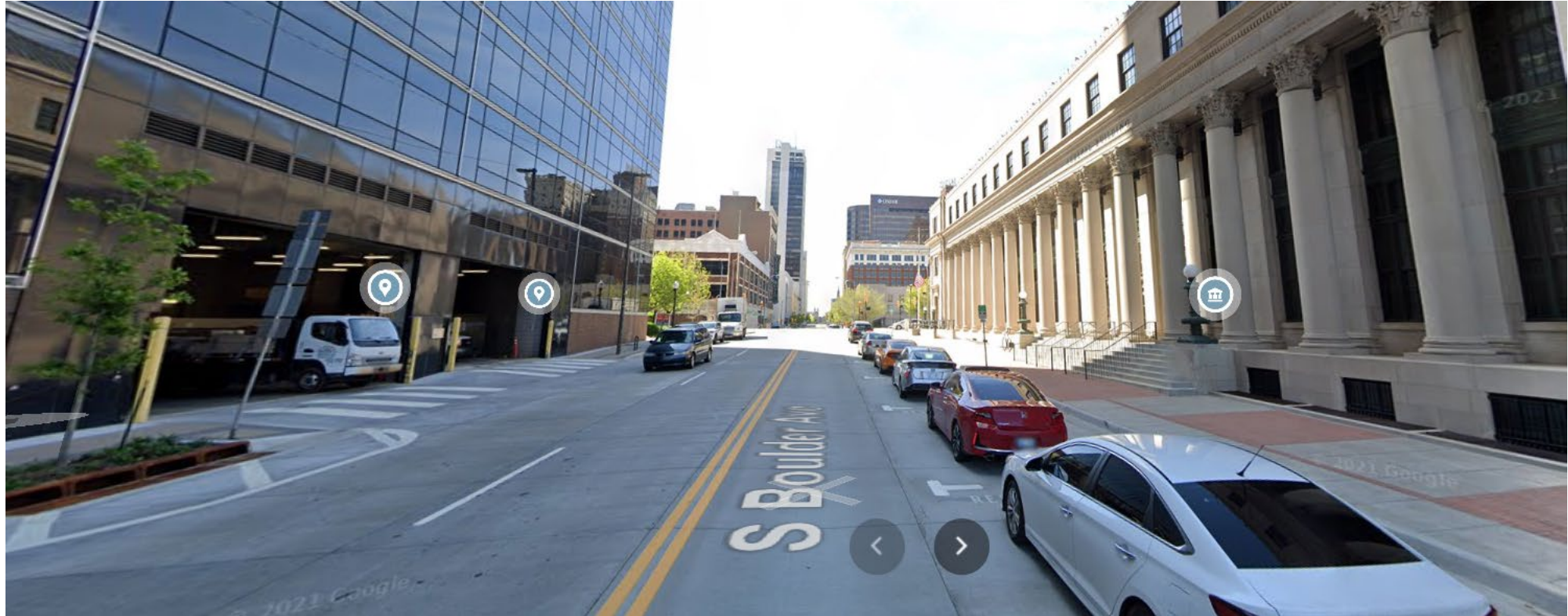


2014: Boulder – Federal Building – 2<sup>nd</sup> – 3<sup>rd</sup> Street  
Before Conversion from 1-way to 2-way

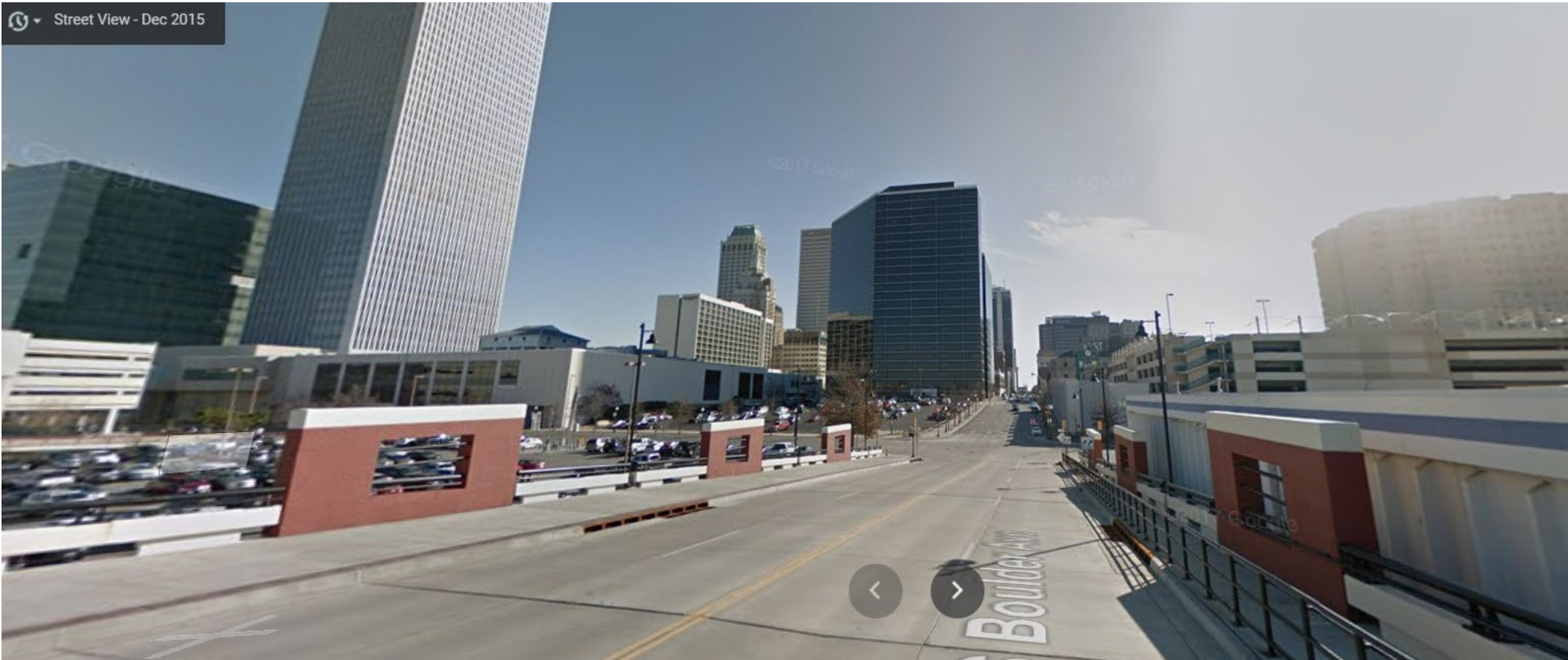




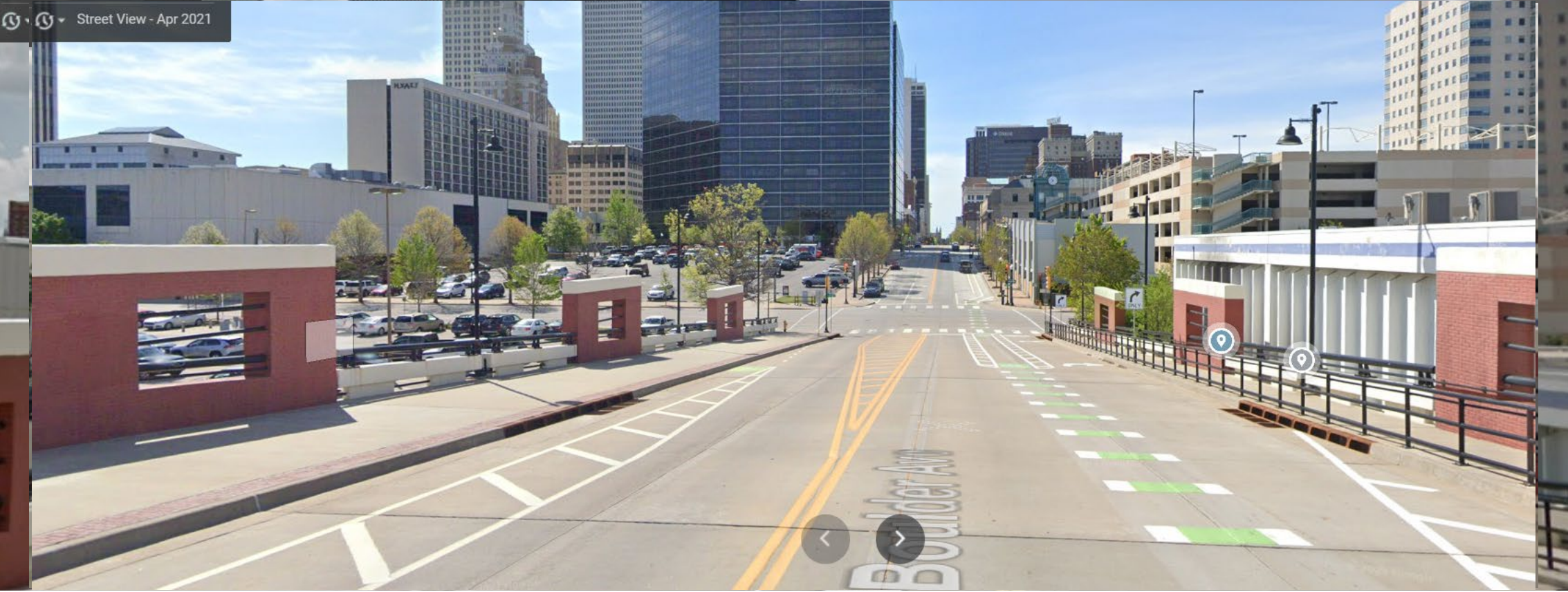
2022: Boulder – Federal Building – 2<sup>nd</sup> Street to 3<sup>rd</sup> Street  
After Conversion – Two-way, bike lanes added, visible striping



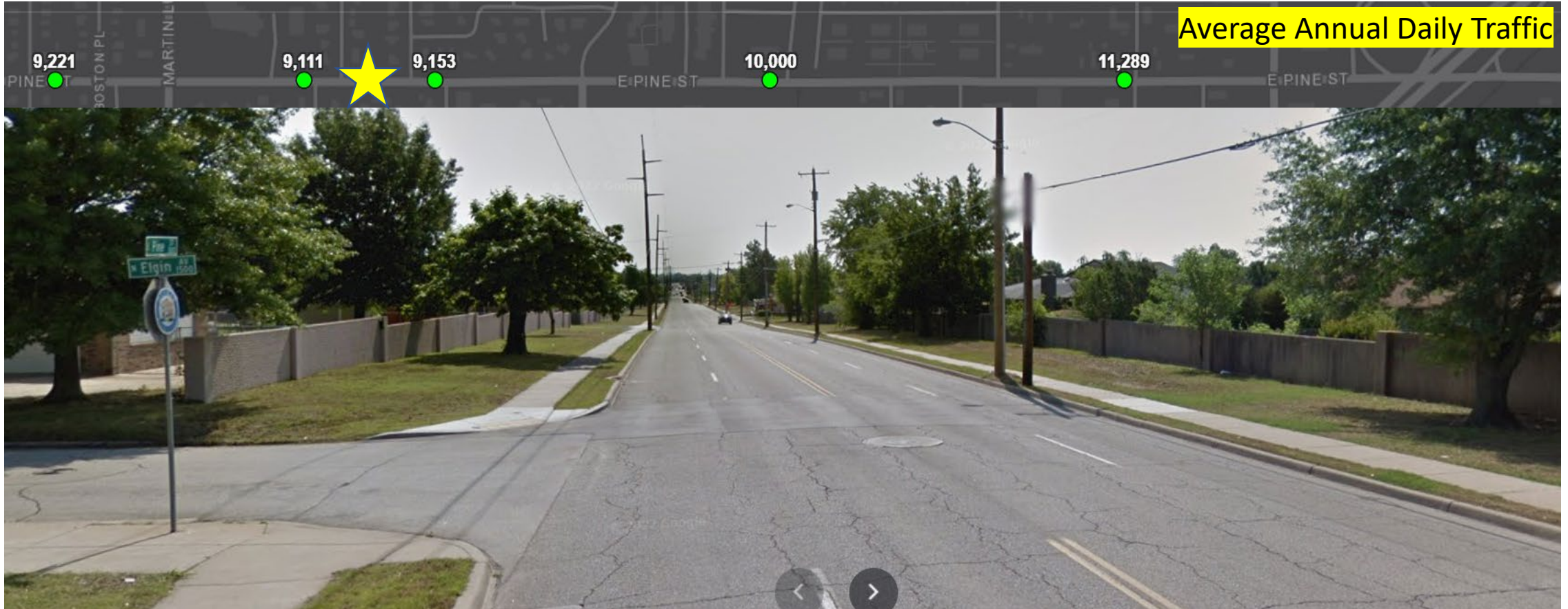
2015: Boulder Bridge – 1<sup>st</sup> Street to 3<sup>rd</sup> Street



2021: Boulder Bridge – 1<sup>st</sup> Street to 3<sup>rd</sup> Street



2014: Pine Street near Elgin – ARTERIAL – Gilcrease Museum Rd to Memorial (6.5 Miles)

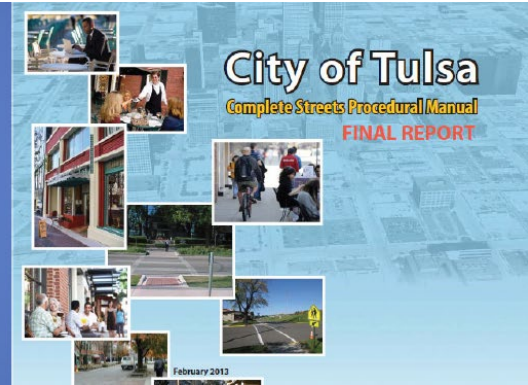


# Complete Streets Policy

- Move away from motorist-only perceptions
- Incorporate multimodal design elements



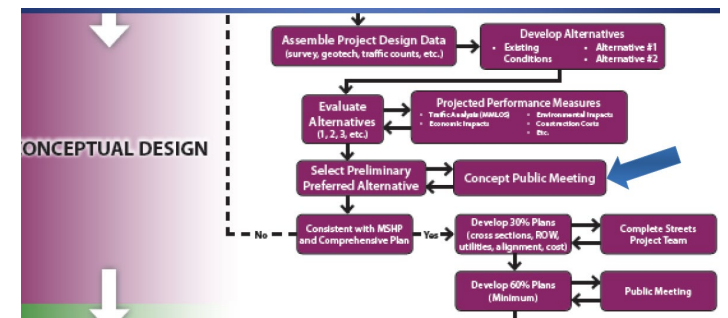
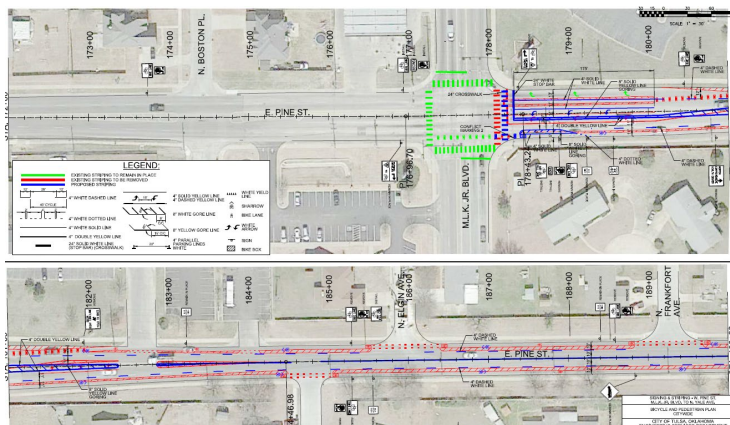
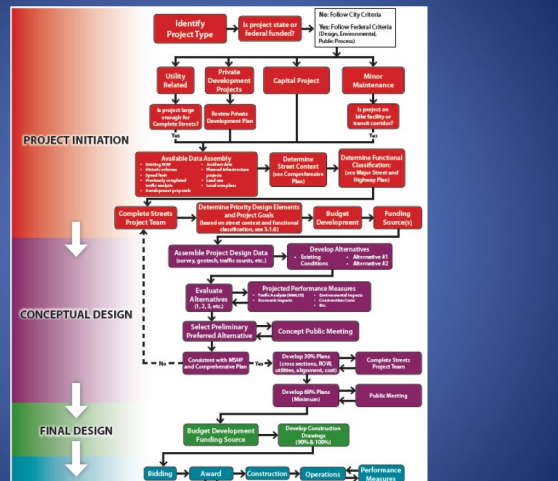
# Includes Complete Streets Planning/Design Process & Performance Measures



# Multimodal Levels of Service (MLOS)



# Complete Streets Project Development Process



2021: Pine Street – Elgin to Frankfort



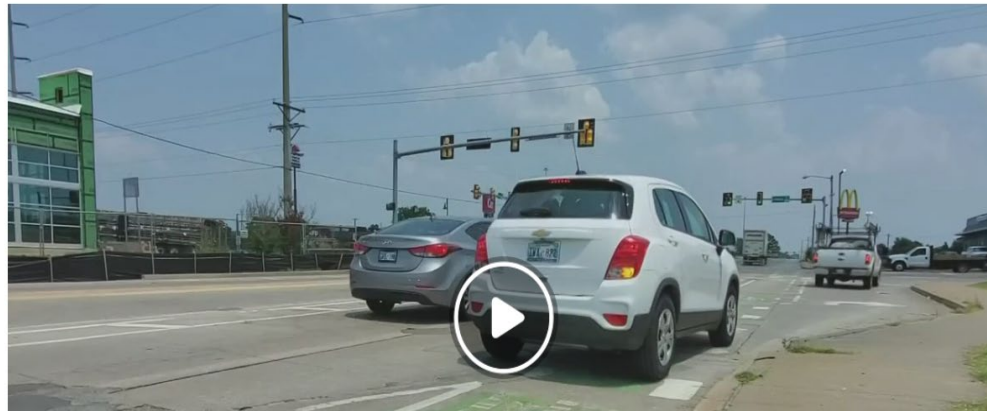
Bike lanes were striped on Pine from Gilcrease Museum Road to Memorial in early October and are nearing completion. The lanes have mixed to mostly negative responses from the North Tulsa community, with residents mentioning traffic, gentrification, and history of developments made in their community without their input. Advocates say the bike lanes will save lives, encourage new

- Kolby Ari Webster, Contributing Writer, theblackwallsttimes.com  
November 22, 2020

Bike Lanes Removed After Complaints From Constituents

- Channel 6 KOTV

Friday, July 23rd 2021, 4:41 pm  
By: Emory Bryan



2022: Pine Street – Elgin to Frankfort





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- \* Public involvement – Early/Often
- \* Elected official buy-in
- \* Stakeholder Education

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Safe Transportation for Every Pedestrian (STEP) – Resources

# RESOURCES



## WHAT ARE CMFs?

A crash modification factor (CMF) is used to compute the expected number of crashes after implementing a countermeasure on a road or intersection.

## Proven Safety Countermeasures Filter Tool

All 28 PSCs are listed at the bottom of the page in alphabetical order. Answer one or more of the following questions to obtain a tailored listing of potential PSCs for the location of interest. Users may select multiple answers for each question. After checking the desired box(es), click “Apply Filters,” then the list of PSCs will update at the bottom of the page to match the query. Click “Clear Form” to remove all filters and return to the default display of all 28 PSCs. Select a countermeasure name to learn more including a description, safety effectiveness, context, application, cost, and considerations for implementation.

## Welcome to the Roadway Safety Data Program (RSDP)

The RSDP provides information and resources that can help your agency improve its roadway safety data. Data are one part of a comprehensive safety program. [Learn More >>](#)



*A State-based model that identifies and deploys proven, yet underutilized innovations — saving time, money and resources that can be used to deliver more projects.*

[Learn more about Every Day Counts >>](#)

Source: <https://safety.fhwa.dot.gov/provencountermeasures/>