

SH45 Southwest - Report to Council

Response to Council Resolution 20140515-063

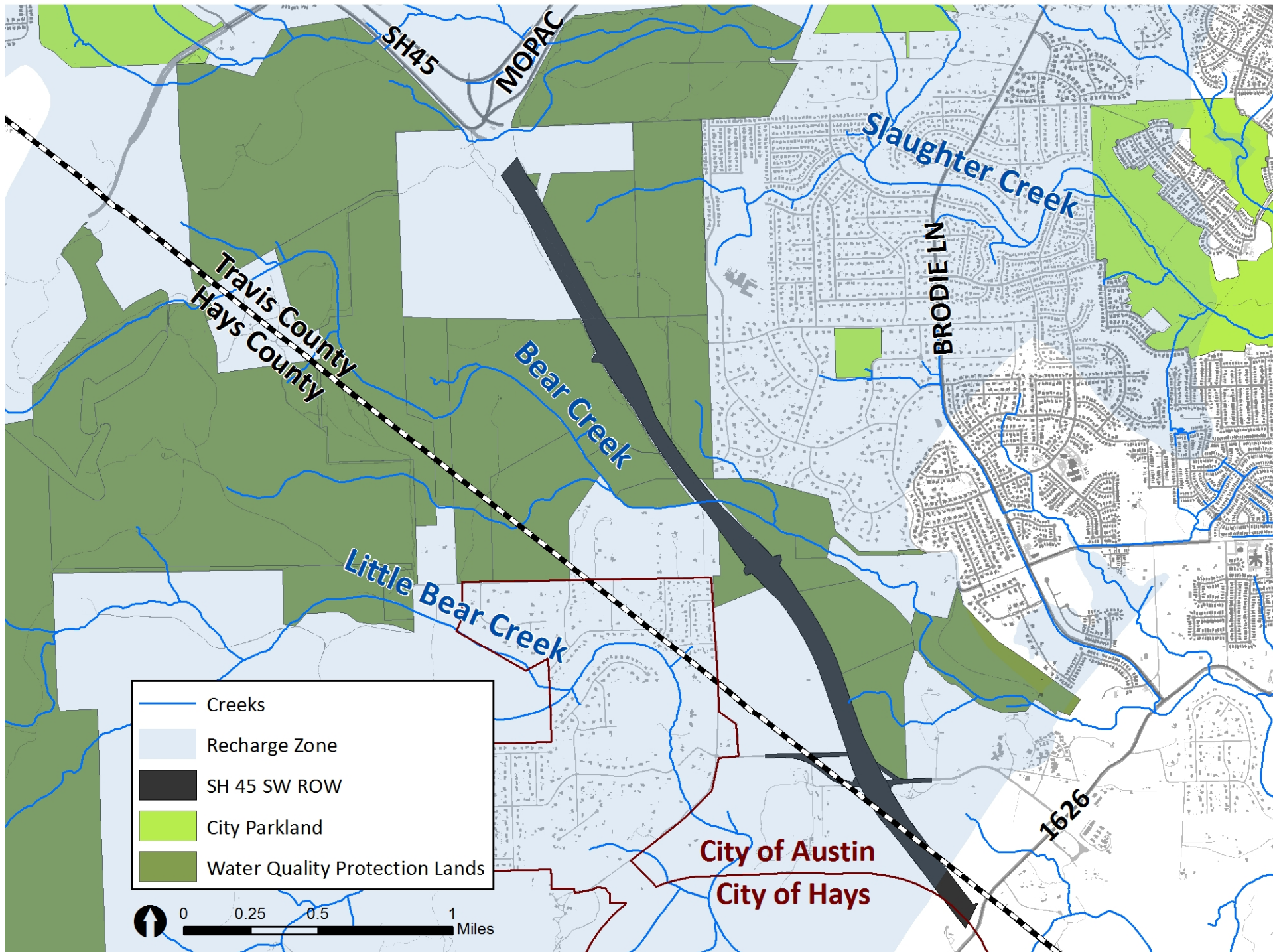


*Austin Transportation
Department*

Introduction

Council resolution 20140515-063 directed the City Manager to review and report findings and recommendations on 6 issues.

1. Transportation alternatives
2. Recent CAMPO/CTRMA traffic studies
3. Impact to south MoPac and Lady Bird Lake bridge
4. Existing environmental surveys of City lands along SH45 SW
5. State environmental review vs federal review
6. Environmental protection measures for state roads and construction sites



TRANSPORTATION TASKS

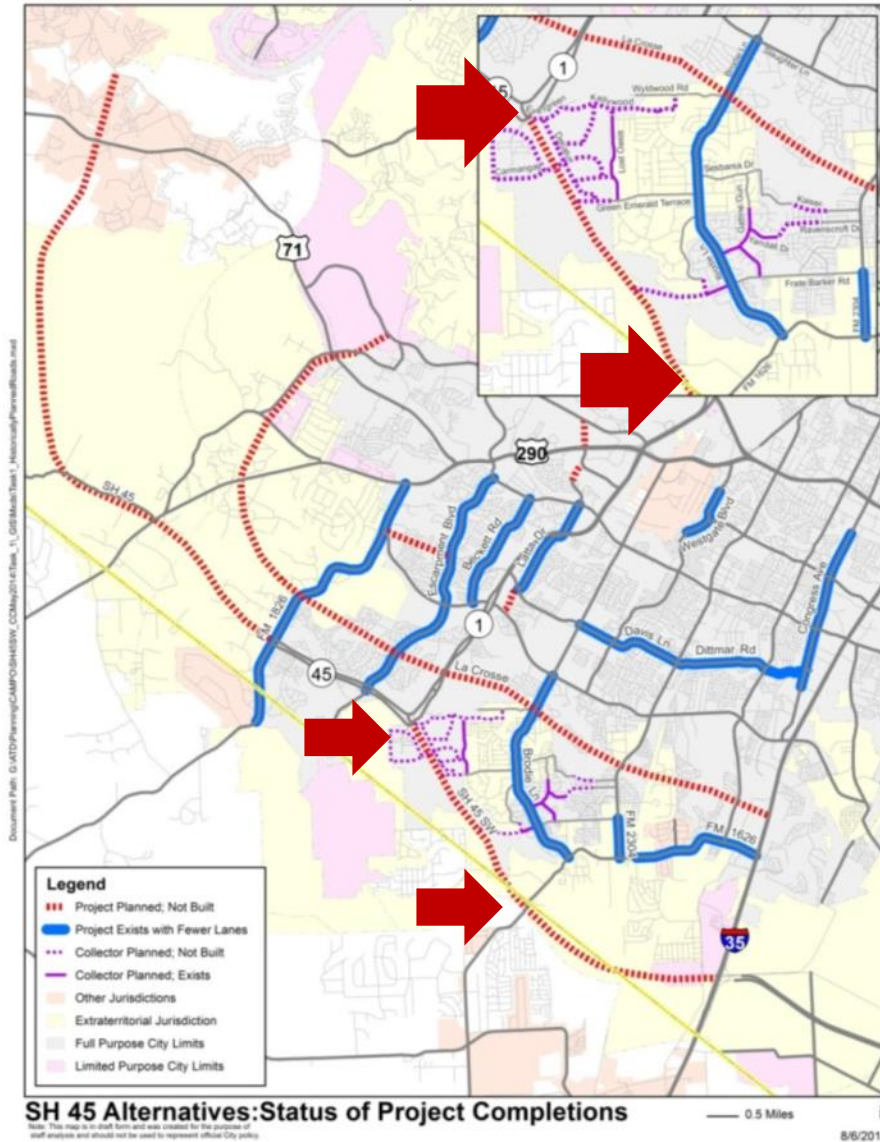
Transportation Tasks

1. Transportation alternatives
 - Status of roadways originally planned for SW Austin
 - Planned mobility proposals
 - Alternative transportation concepts
2. Recent CAMPO/CTRMA traffic studies
 - Traffic forecasts (TxDOT/CTR/CAMPO)
 - Future traffic congestion (CAMPO)
 - CTRMA Level I Traffic and Revenue Forecasts
3. Impact to south MoPac and Lady Bird Lake bridge

Note: presented information relies on data prepared by others

Defining Alternatives: Task 1

Status of Project Completions: SW Austin



Source: City of Austin

Roadway Network Completion 1984 Austin Transportation Study

Proposed

- 35 miles of major roadways
- 11.4 miles of collectors and lesser roadways

Constructed

- 27 miles of major roadways, many with reduced capacity
- 2.4 miles of collectors and lesser roadways

Not Constructed

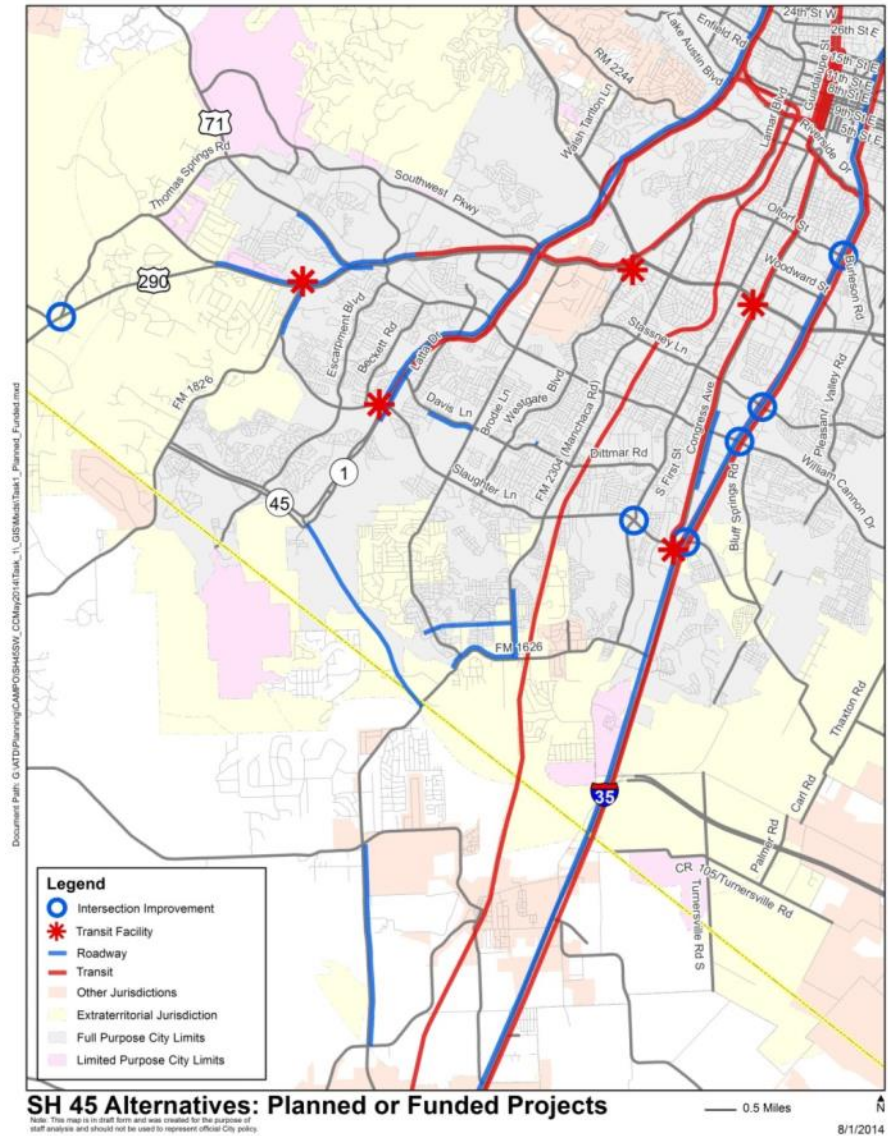
- 8 miles of major roadways, (including SH 45 & LaCrosse)
- 9 miles of collectors and lesser roadways

Defining Alternatives: Task 1

Planned or Funded Mobility Projects

- High Capacity Transit infrastructure as part of Project Connect
 - Lone Star Rail, Commuter Bus Routes (S. MoPac, S. I-35, Oakhill, S. Congress/S. Lamar MetroRapid)
 - Park & Ride Facilities
- Express Lanes or similar (I-35, SH 45, S. MoPac, Oakhill Parkway)
- Arterials (FM 1626 Hays County, Davis Lane Improvements)

Planned or Funded Projects



Sources: TxDOT UTP, CAMPO TIP, City of Austin ASMP, Project Connect, Cap Metro's ServicePlan2020

Defining Alternatives: Task 1

Active Transportation



Planned or Funded Mobility Projects

- Violet Crown Trail
- Bike Lanes
- Multi-use Path
- Wide Shoulders
- Wide Curb Lane

Source: City of Austin, 2009 Bicycle Master Plan

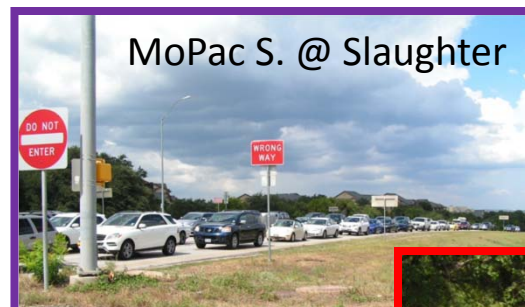
Existing Traffic Conditions



Source: City of Austin

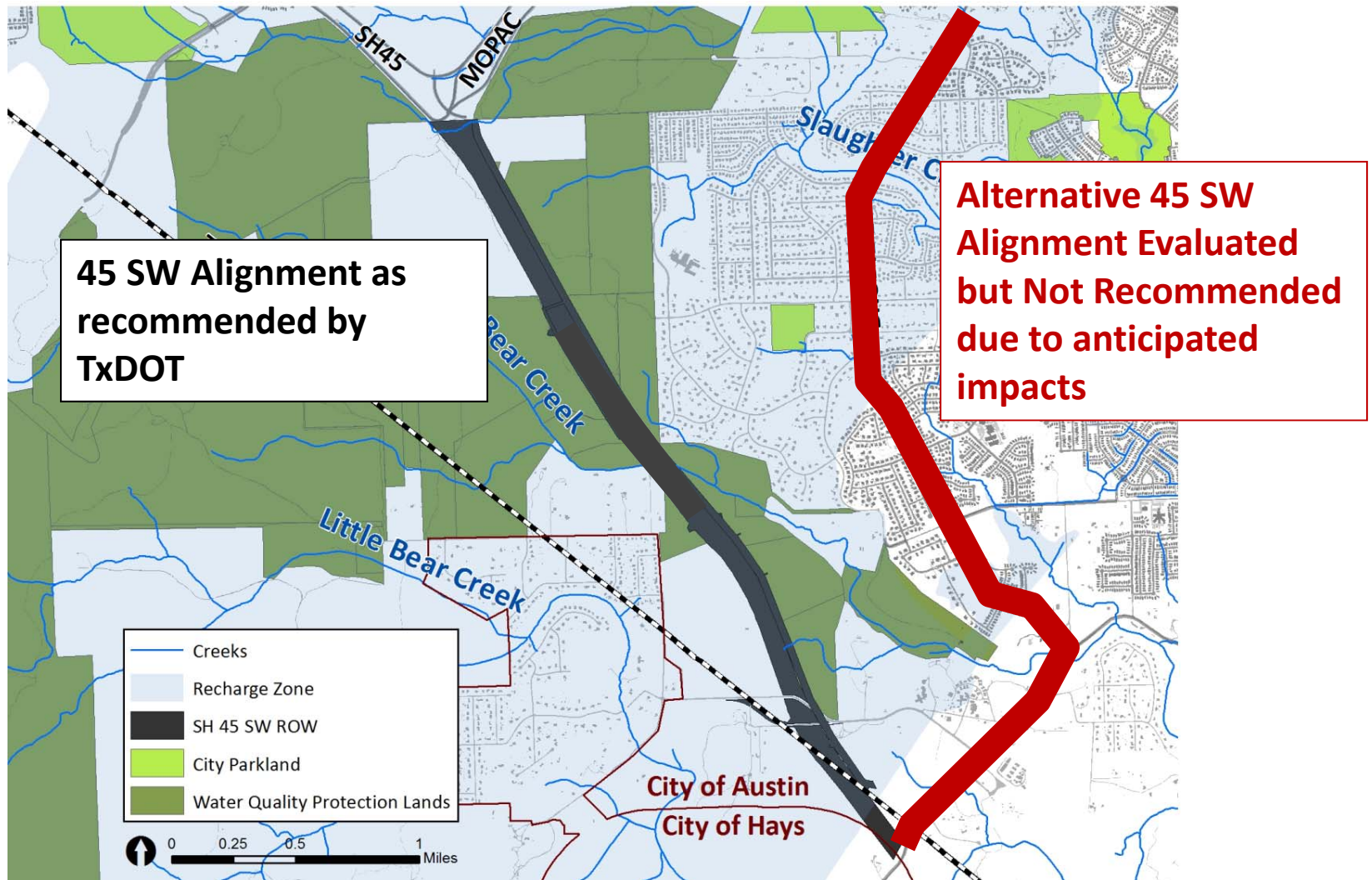
Existing Congestion:
Volume to Capacity Ratios (V/C)
(based on recent traffic counts)

- **Minimal Congestion: $V/C < 1$**
- **Congested: V/C of 1 to 1.3**
- **Severely Congested: $V/C > 1.3$**



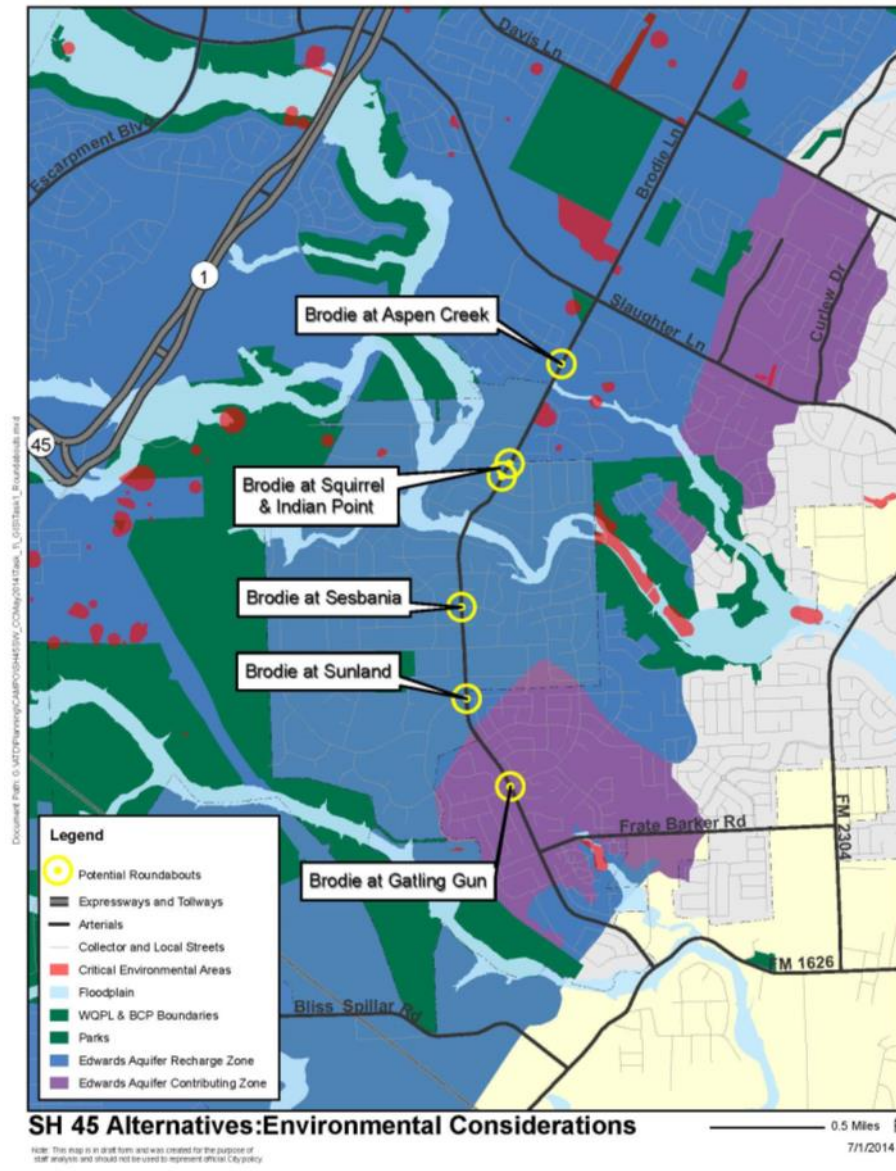
Alternatives: Task 1

(SH 45SW Evaluated by TxDOT)



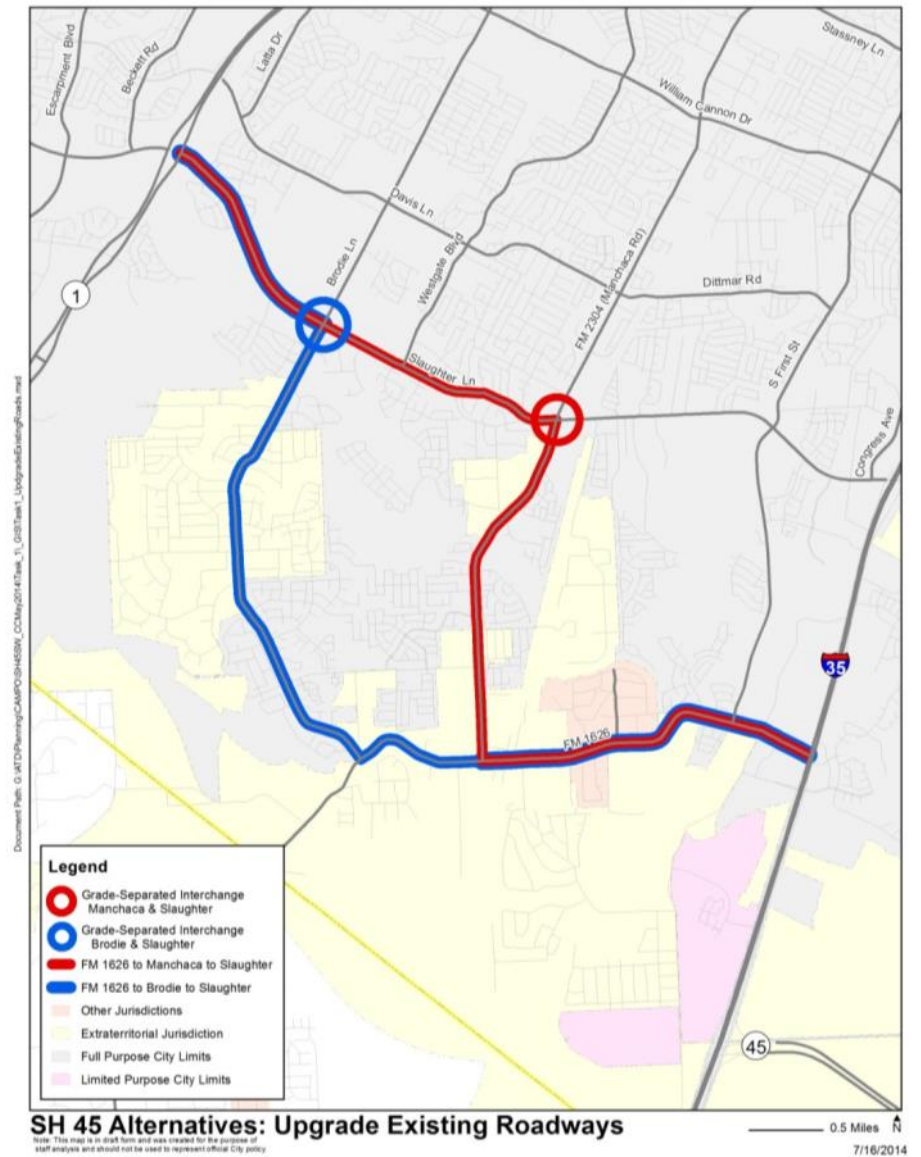
Other Alternatives: Task 1

Brodie Lane Roundabouts



Source: City of Austin

Upgrade Existing Roadways to Urban Arterials



Source: City of Austin

Transportation Options

1. Transportation alternatives

- Status of roadways originally planned for SW Austin
- Planned mobility proposals
- Alternative transportation concepts

2. Recent CAMPO/CTRMA traffic studies

- Traffic forecasts (TxDOT/CTR/CAMPO)
- Future traffic congestion (CAMPO)
- CTRMA Level I Traffic and Revenue Forecasts

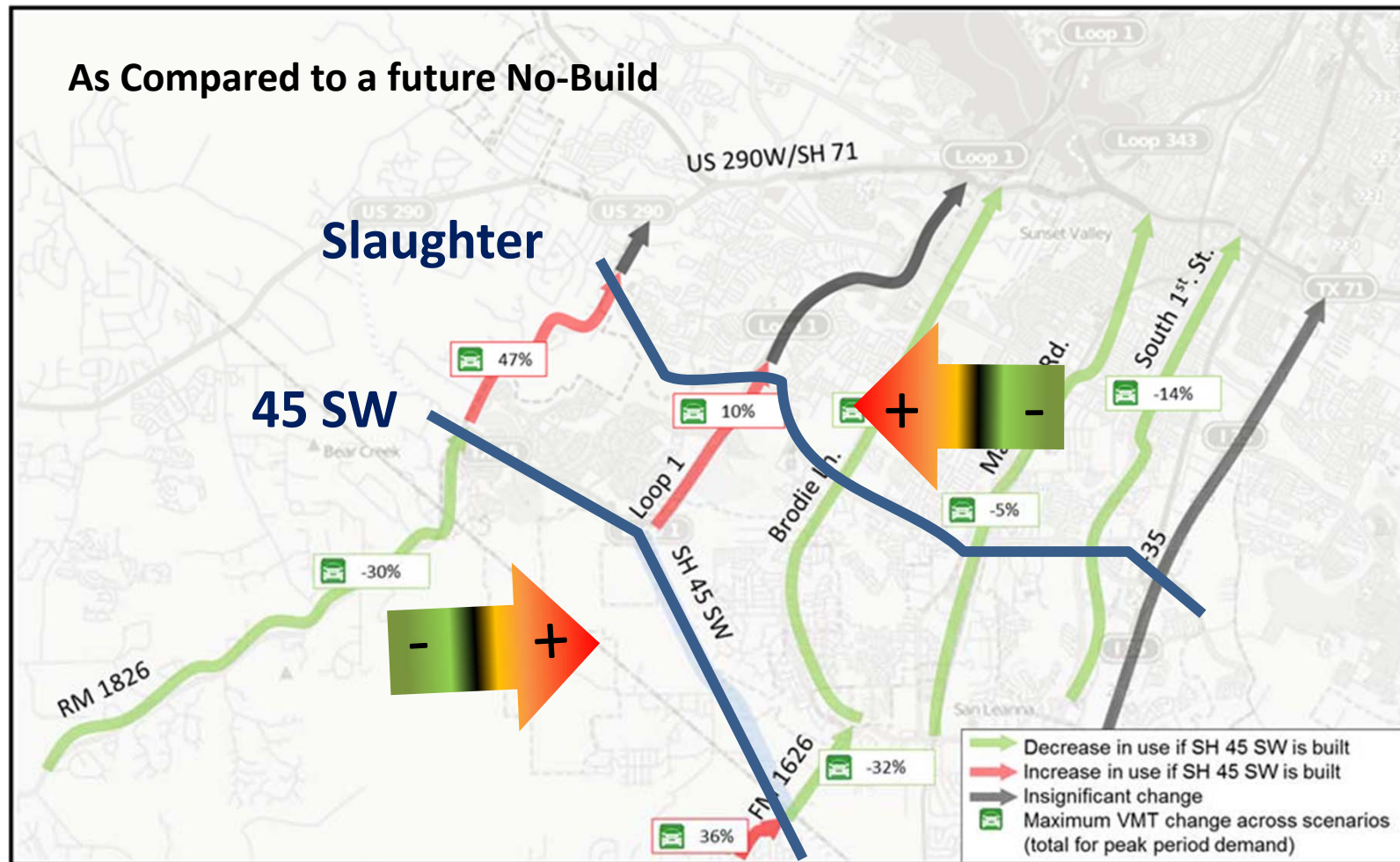
3. Impact to south MoPac and Lady Bird Lake bridge

Note: presented information relies on data prepared by others

Task 2: Traffic Studies

Dynamic Traffic Study of SH 45(SW)

Northbound Corridors: Maximum VMT Change across all Build Scenarios



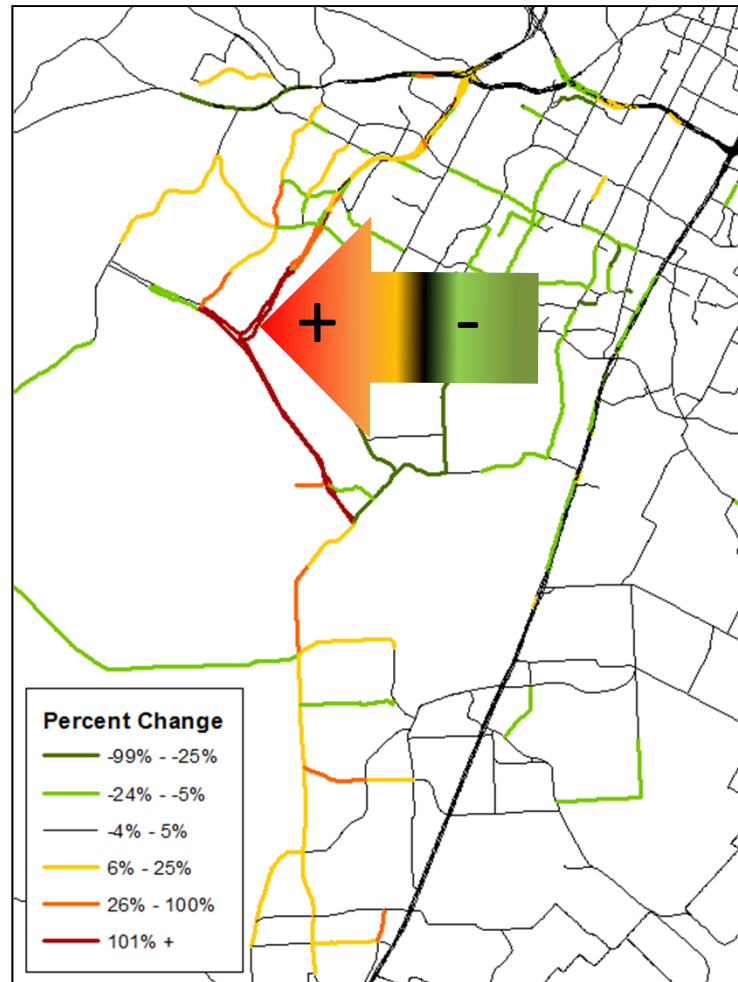
Source: CAMPO and CTR, *Dynamic Traffic Study of SH 45 SW* (Draft Report)

Task 2: Traffic Studies

CAMPO SH45 SW Alternative Model Runs

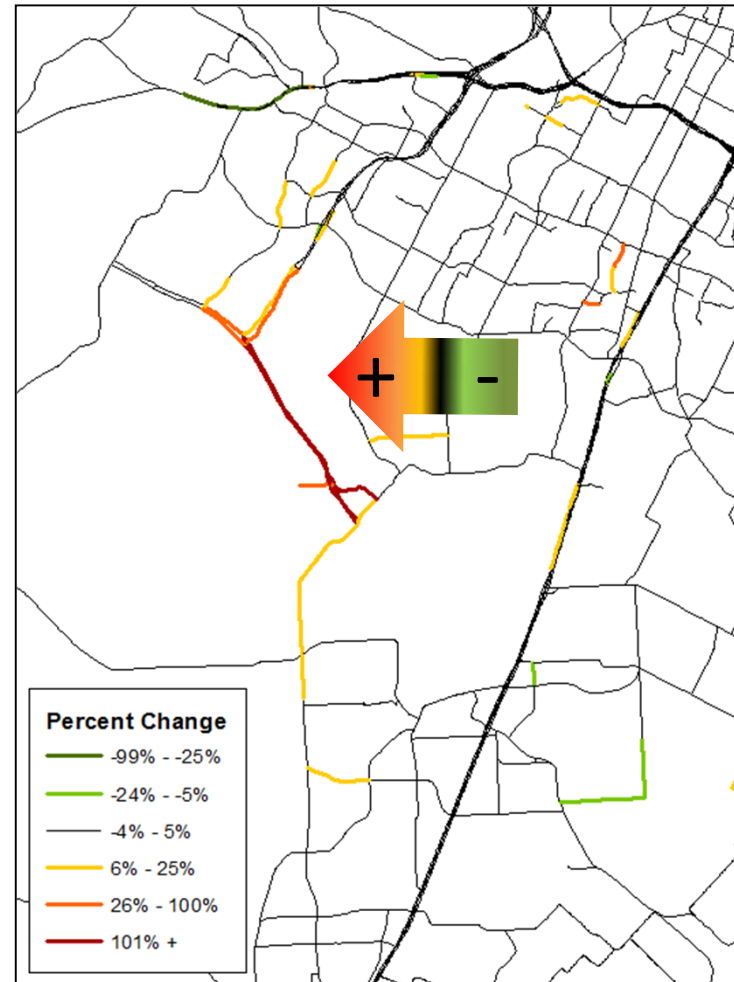
Changes in Traffic Volumes from No-Build to Build Scenarios

Four-Lane Toll Free



Source: CAMPO, SH45 SW Alternative Model Runs

Four-Lane Toll



Source: CAMPO, SH45 SW Alternative Model Runs

Task 2: Traffic Studies

CTRMA Level I Traffic and Revenue Forecasts

- Used for project screening and based on preliminary project design and data.
- Gives a rough projection of traffic and revenue generated from the project.

Average Weekday Transaction Projections			
Road	Location	2025	2035
SH45 SW	MoPac to FM 1626	14,388	21,003

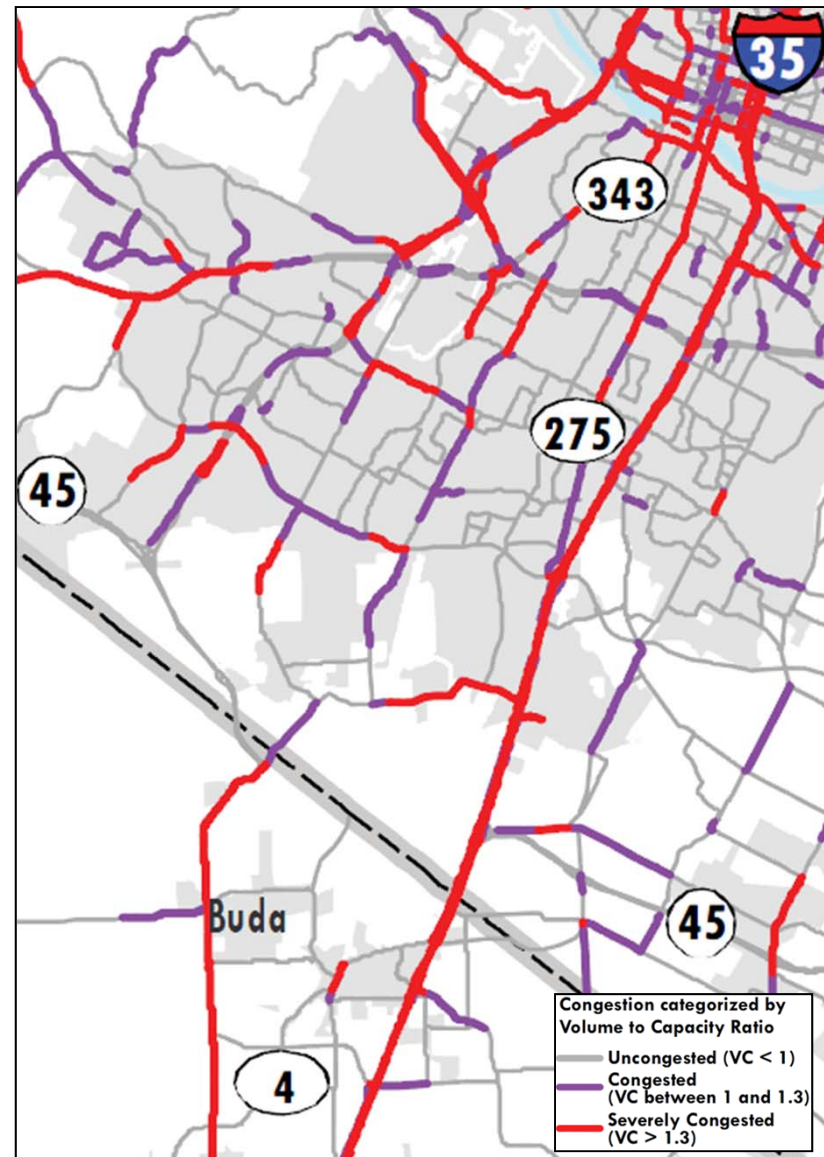
Source: CTRMA Level I Traffic and Revenue Forecasts

Future Traffic Conditions: Task 2

CAMPO 2035 Roadway Congestion

CAMPO 2035 Congestion
Projections: Volume to Capacity
Ratios (V/C)

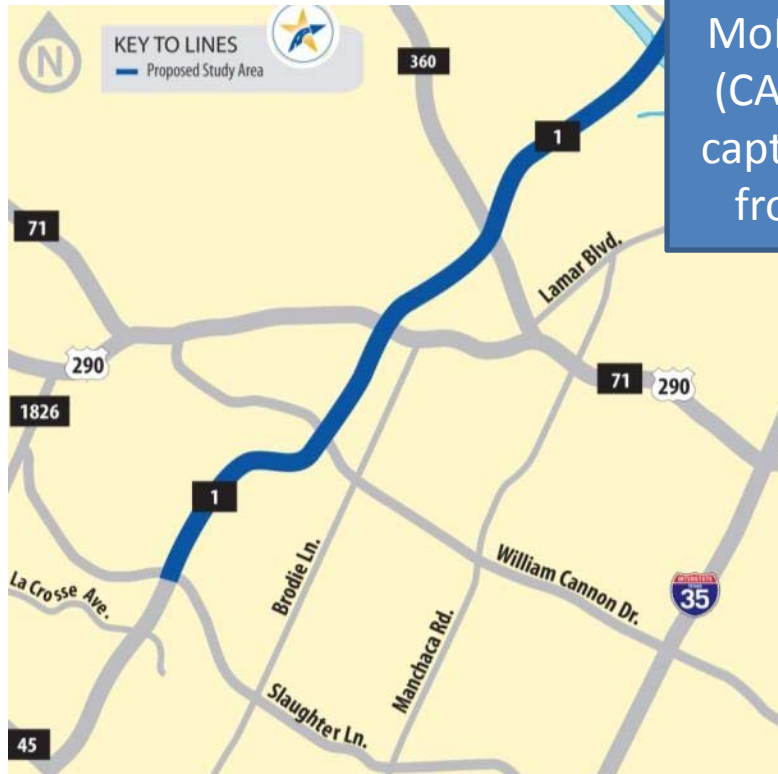
- **Congested: V/C of 1 to 1.3**
 - Portions of So MoPac, Brodie, Manchaca Rd., Slaughter Ln.
- **Severely Congested: V/C >1.3**
 - Portions of So MoPac, Brodie, FM 1626
 - I-35



Source: CAMPO 2035 Plan

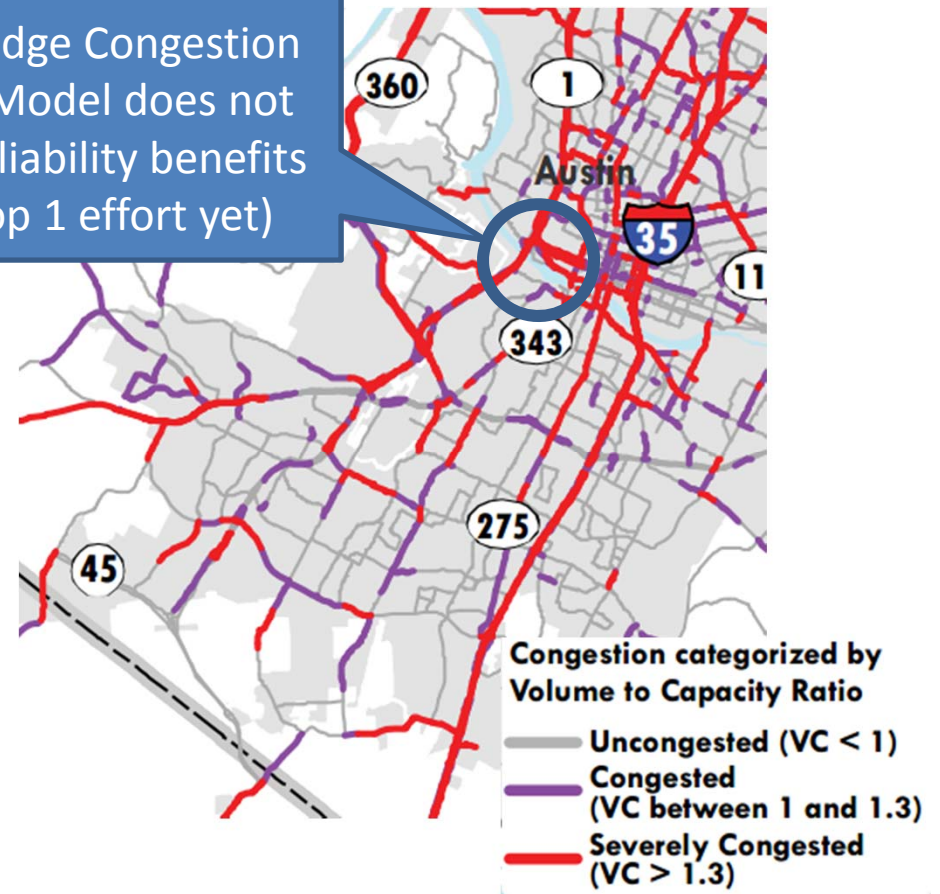
Task 3: Loop 1 at Lady Bird Lake Bridge

Loop 1 South Environmental Study



MoPac Bridge Congestion
(CAMPO Model does not capture reliability benefits from Loop 1 effort yet)

CAMPO 2035 Roadway Congestion



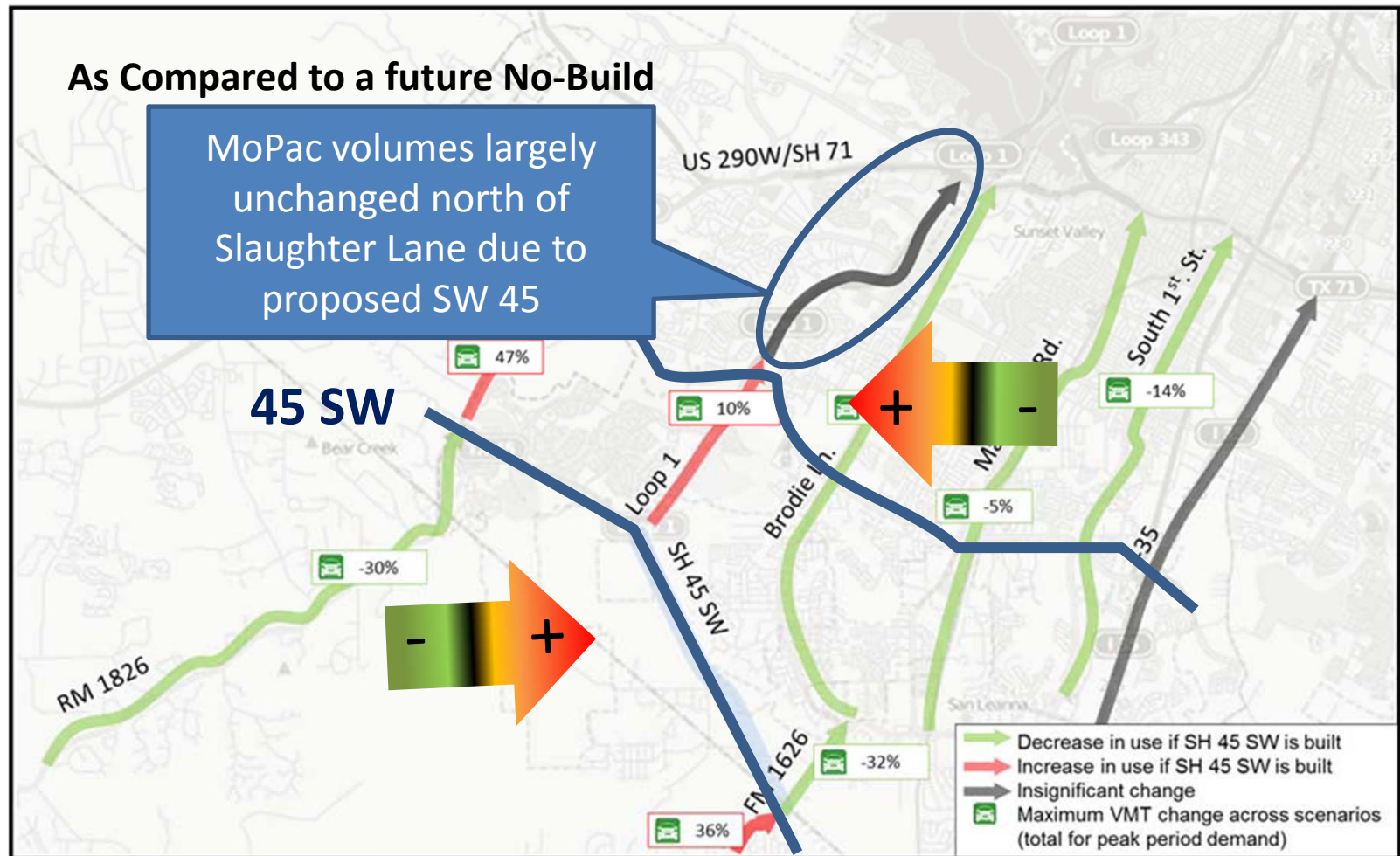
Source: TxDOT & CTRMA, MoPAC South Environmental Study website, <http://www.mopacsouth.com/multimedia/maps.php>

Source: CAMPO, 2035 Regional Transportation Plan Appendices

Task 3: Loop 1 at Lady Bird Lake Bridge

Dynamic Traffic Study of SH 45(SW)

Northbound Corridors: Maximum VMT Change across all Build Scenarios



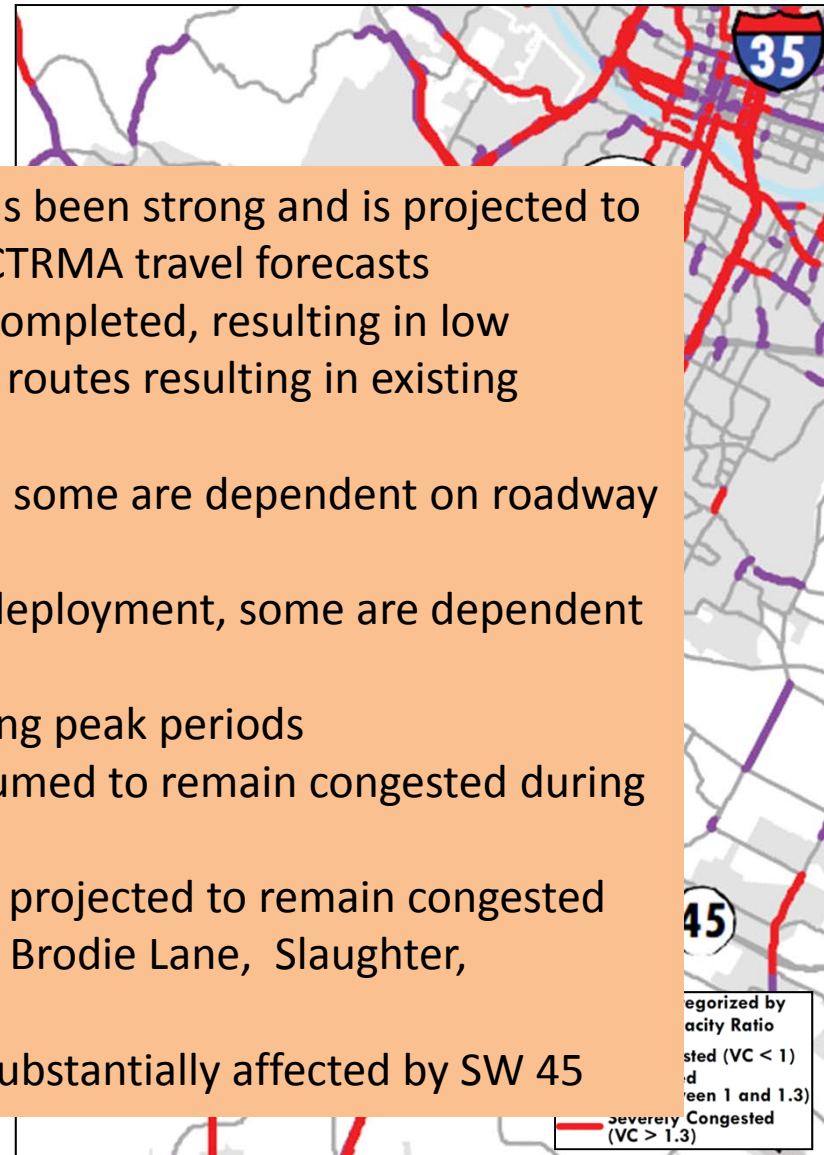
Source: CAMPO and CTR, *Dynamic Traffic Study of SH 45 SW* (Draft Report)

Traffic Summary Observations

CAMPO 2035 Roadway Congestion

CAMPO 2035 Congestion Projections: Volume to Capacity

- Growth in Hays and SW Travis Counties has been strong and is projected to remain strong in current CAMPO/TxDOT/CTRMA travel forecasts
- Originally planned roadway network not completed, resulting in low connectivity and limited alternative travel routes resulting in existing congested conditions
- Many transit investments not yet in place, some are dependent on roadway investments being in place first
- Active transportation facilities are under deployment, some are dependent on roadway network investments
- Existing network is heavily congested during peak periods
- Future network without SH 45 can be assumed to remain congested during peak periods
- Portions of future network with SH 45 are projected to remain congested during peak periods, including portions of Brodie Lane, Slaughter, Manchaca, and FM 1626
- The MoPac Bridge is not projected to be substantially affected by SW 45



Source: CAMPO 2035 Plan

ENVIRONMENTAL TASKS

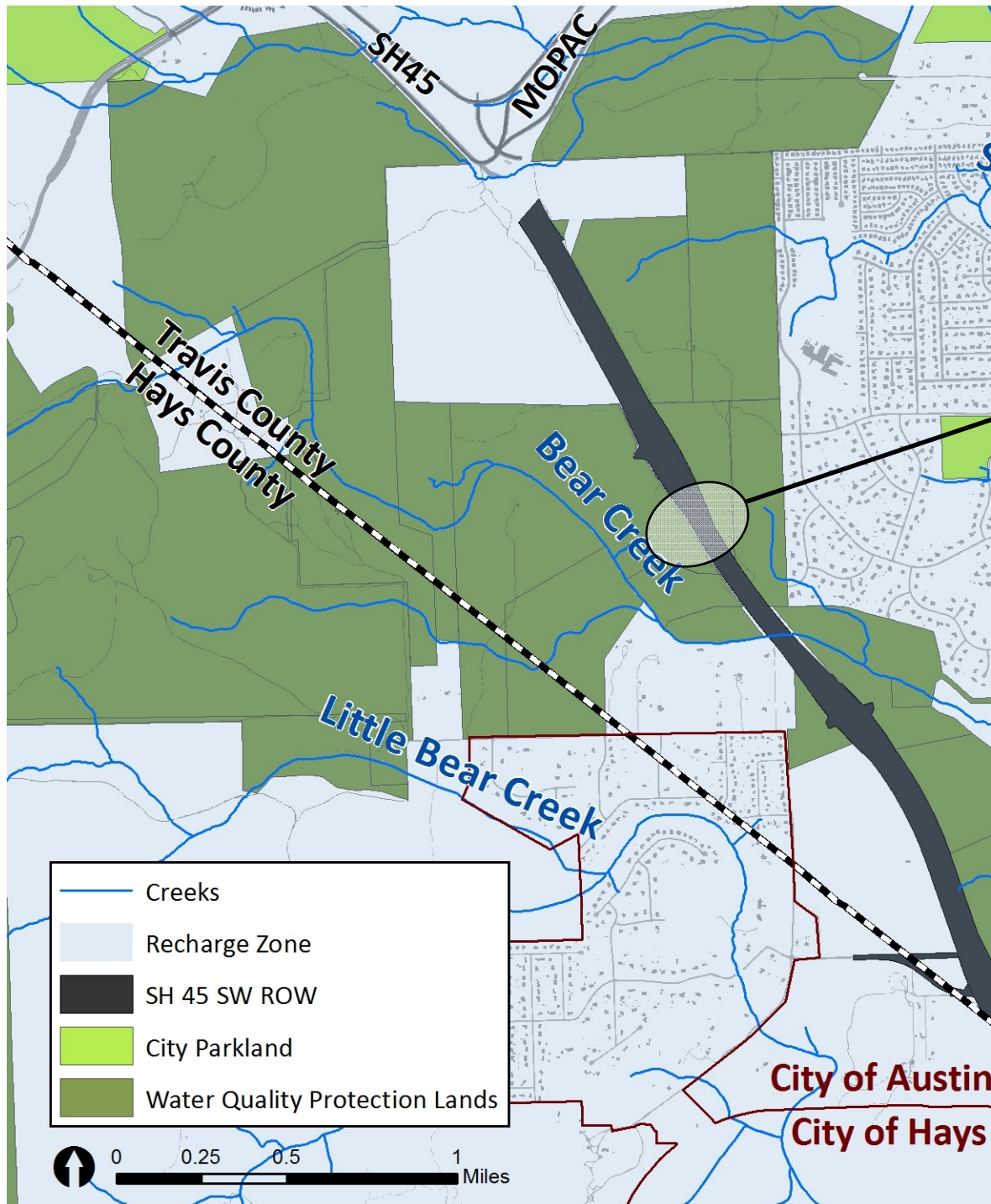
Task 4 - Review Environmental Surveys

Scientific surveys and studies show:

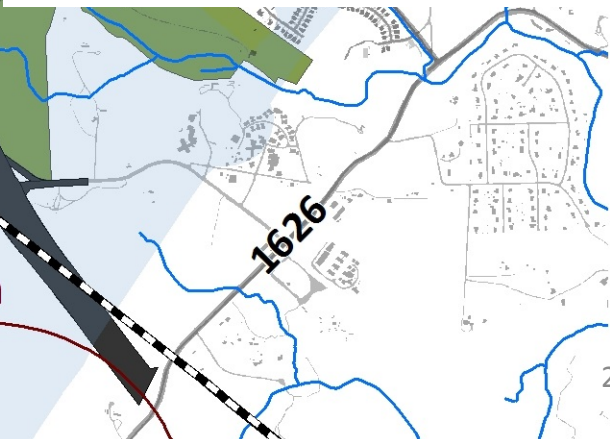
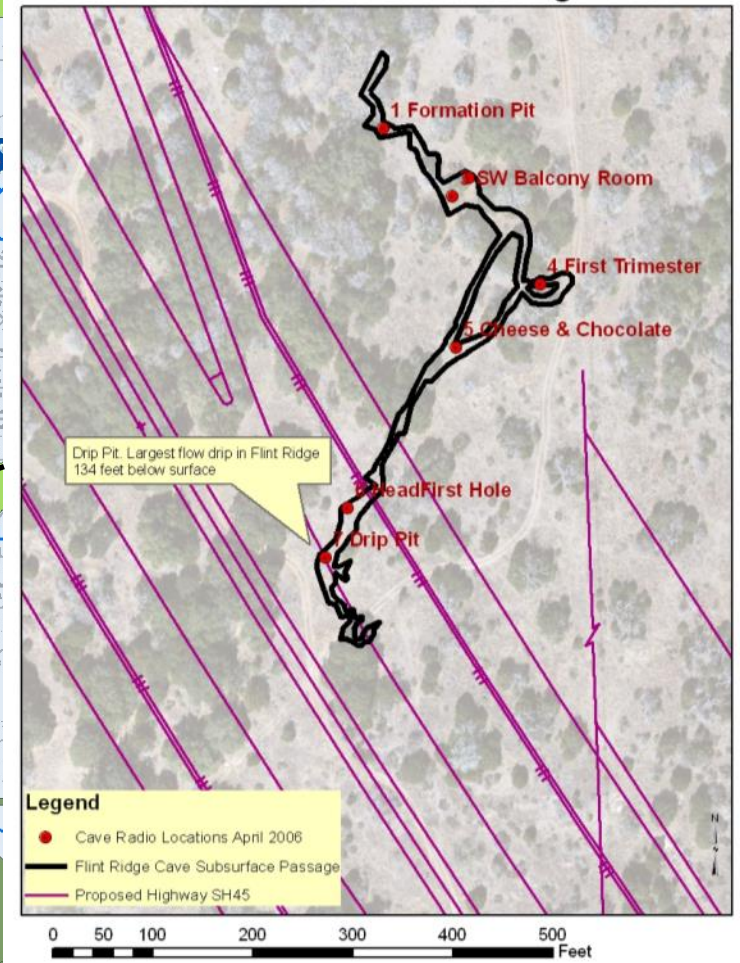
- Strong, rapid flow between surface, groundwater, nearby public water supply wells, and Barton Springs
- Surface water is high quality, very sensitive to nutrients
- Surface karst features are plentiful and well identified
 - TxDOT karst survey in progress
 - Additional cave exploration by TxDOT needed
 - COA Flint Ridge Cave subsurface drainage study in progress
- Rare karst species in several caves, more study needed to confirm presence/absence in other caves
- Bird habitat near ROW, possible habitat in ROW, needs more study to confirm presence/absence

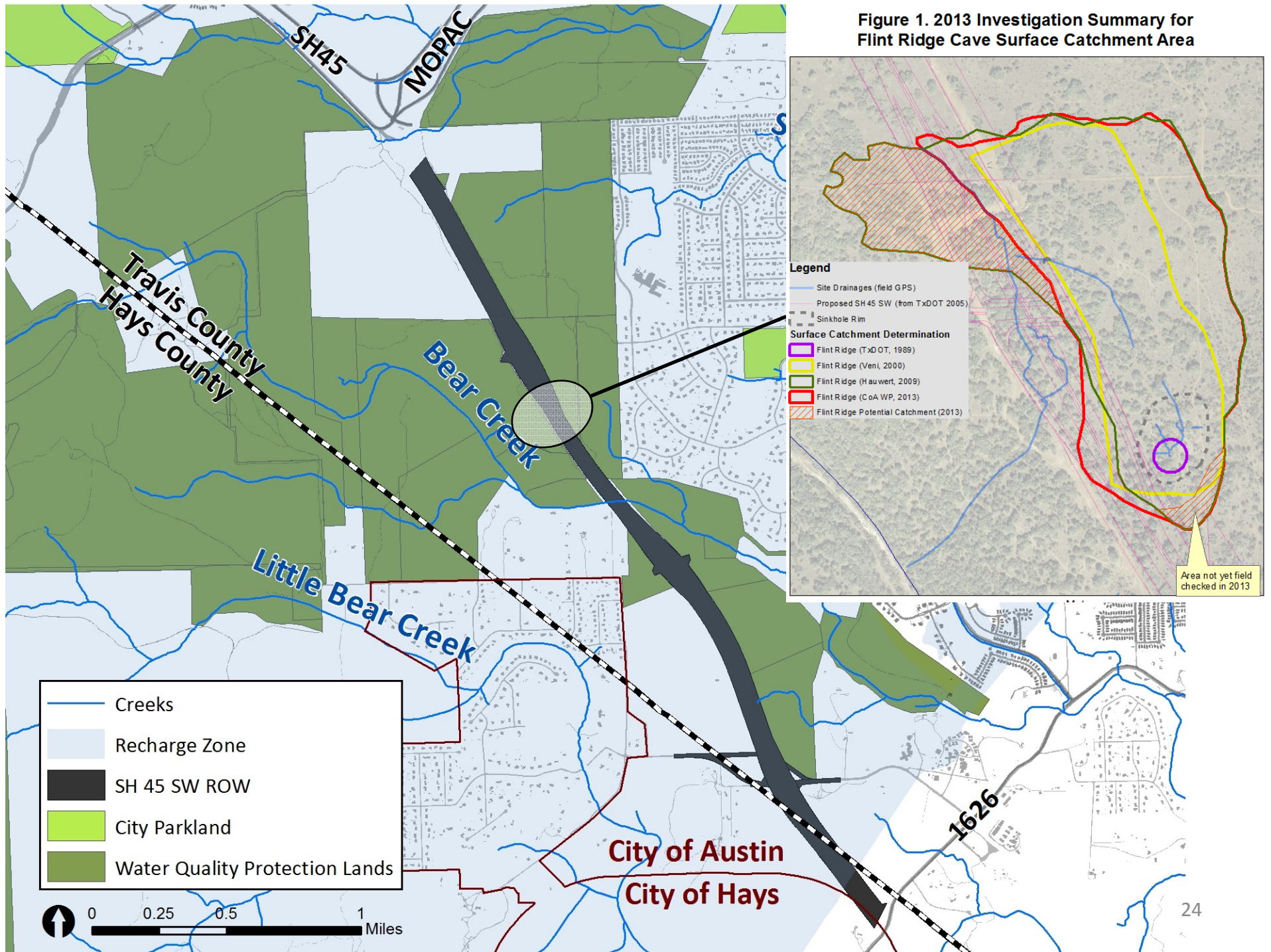
Flint Ridge Cave





Cave Radio Location of Flint Ridge Cave





Task 5 - State vs Federal Environmental Review

Process and requirements overall very similar with some subtle differences:

- No overarching Texas law that is similar to Federal NEPA
- No Texas oversight agency equivalent to the White House Council on Environmental Quality
- TXDOT is often both the project sponsor and the project EIS reviewer
- Federal reviews prepared by TxDOT are subject to additional independent review by FHWA
- NEPA “hard look” vs Texas “consider the results”
- Federal agencies must consult with USFWS if there is potential endangered species impact
- Texas agencies not required to consult USFWS, but must obtain a permit if endangered species “take” will occur

Task 6: TxDOT Environmental Protection Measures

Temporary Water Quality Controls during Construction:

- TPDES and Edwards Aquifer Rules for temporary controls
- Criteria for temporary controls similar to CoA, level of design analysis to determine effectiveness differs significantly
- TxDOT and contractor are jointly responsible for inspection
- CoA staff site visits to TxDOT construction sites:
 - Quality and number of temporary controls is inconsistent between sites
 - Maintenance also appears inconsistent
- CTRMA is considering implementing CoA type process for design, inspection and maintenance

Task 6: TxDOT Environmental Protection Measures

Permanent Water Quality Controls during Roadway Operation:

- TPDES and Edwards Aquifer Rules require permanent controls
- Required permanent controls vary substantively from CoA:
 - Treat less water
 - Only target sediment, no other pollutants
 - WQ goal is lower than COA non-degradation goal for Barton Springs Zone
- Review of permanent controls on South MoPac found:
 - Generally in good condition
 - Older design not comparable to current standards
 - Good documentation of inspections and maintenance

Task 6: TxDOT Environmental Protection Measures



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Task 6: TxDOT Environmental Protection Measures

City of Austin Projects



Environmental Tasks Summary

The staff report found that:

- SH45 SW area is well studied overall with a large body of scientific data
 - Proposed route is highly sensitive because of karst features, surface water, groundwater, and protected species
 - There are some gaps specific to the SH45 SW ROW and potential project impacts
- State and federal environmental review is comparable, but with differences in oversight and interaction with USFWS
- Local TxDOT construction projects vary in design and quality of temporary water quality controls
- Permanent water quality controls along S. MoPac generally well maintained, but of older technology

Questions?