TRANSPORTATION POLICY BOARD MEETING

The Junior League of Austin Community Impact Center
5330 Bluffstone Lane
Austin, TX 78759
Monday, April 15, 2024
2:00 p.m.

Livestream at www.campotexas.org

All individuals attending the CAMPO Transportation Policy Board Meeting are required by the meeting facility to follow the Center for Disease Control (CDC), state, and local guidance.

AGENDA

1. Certification of Quorum – Quorum requirement is 12 members.
   ..... Commissioner Cynthia Long, Chair

2. Public Comments

The public is invited to comment on transportation-related topics in the CAMPO geographic area. The number of speakers and speaker time limits are at the discretion of the Chair. Each speaker will have one (1) minute to provide public comment. Written comments may be emailed to TPBcomments@campotexas.org by 5:00 p.m., Thursday, April 11, 2024.

This is an opportunity for the public to address the Transportation Policy Board concerning an issue of community interest that is not on the agenda. Comments on a specific agenda item must be made when the agenda item comes before the Board. The Chair may place a time limit on all comments. Any deliberation of an issue raised during Public Comments is limited to a statement of fact regarding the item, a statement concerning the policy regarding the item or a proposal to place the item on a future agenda.

EXECUTIVE SESSION:
Under Chapter 551 of the Texas Government Code, the Board may recess into a closed meeting (an executive session) to deliberate any item on this agenda if the Chairman announces the item will be deliberated in executive session and identifies the section or sections of Chapter 551 that authorize meeting in executive session. A final action, decision, or vote on a matter deliberated in executive session will be made only after the Board reconvenes in an open meeting.

3. Executive Session ..... Commissioner Cynthia Long, Chair
   The Transportation Policy Board will recess to an Executive Session, if needed.

4. Report from the Technical Advisory Committee (TAC) Chair ..... Mr. Chad McKeown, CAMPO
   Ms. Moyer will provide an overview of TAC discussion items and recommendations to the Transportation Policy Board.

PUBLIC HEARING:
The public is invited to comment on agenda item 5. Speakers must adhere to the three (3) minute time limit. Written comments may be emailed to TPBcomments@campotexas.org by 5:00 p.m., Thursday, April 11, 2024.

5. Public Hearing and Presentation of Draft 2025-2028 Transportation Improvement Program (TIP) and Amendment to 2045 Regional Transportation Plan (RTP)……. Mr. Ryan Collins, CAMPO
Mr. Collins will present the draft 2025-2028 TIP, proposed amendment to the 2045 RTP, and provide opportunity for public comment.

The public is invited to comment on agenda items 6-11. Speaker time limits and the number of speakers for each topic are at the discretion of the Chair. Each speaker will have one (1) minute to provide public comment. Written comments may be emailed to TPBcomments@campotexas.org by 5:00 p.m., Thursday, April 11, 2024.

6. Discussion and Take Appropriate Action on February 12, 2024 Meeting Minutes
……Commissioner Cynthia Long, Chair
Chair Long will request Transportation Policy Board approval of the February 12, 2024 meeting minutes.

7. Discussion and Take Appropriate Action on Federal Performance Measure Target Updates
…… Mr. Nirav Ved, CAMPO
Mr. Ved will present the transportation system performance measure target updates for 2024 and request Transportation Policy Board approval.

8. Discussion and Take Appropriate Action on Set-Aside Scenario…….. Mr. Ryan Collins, CAMPO
Mr. Collins will present the set-aside evaluation results and request Transportation Policy Board approval.

9. Presentation and Discussion on Air Quality…… Mr. Walker Williamson, TCEQ
Mr. Williamson will provide a presentation on the revised standard for PM2.5 and its implications for the region.

10. Update on 2050 Regional Transportation Plan (RTP)…… Mr. William Lisska, CAMPO
Mr. Lisska will provide an overview of the process and timeline for the development of the 2050 RTP.

11. Presentation and Discussion on Regional Freight Plan…….. Mr. Nirav Ved, CAMPO
Mr. Ved will provide a presentation on the status of the Regional Freight Plan.

12. Executive Director's Report on Transportation Planning Activities
    a. Update on Federal Green House Gas Emissions Targets
    b. 2045 Regional Transportation Plan Administrative Amendment

Persons with Disabilities:
Upon request, reasonable accommodations are provided. Please call 737-226-4840 at least three (3) business days prior to the meeting to arrange for assistance.

Transportation from Transit Stops:
Upon request, transportation vouchers from adjacent transit stops are available. Please call 737-226-4840 at least three (3) business days prior to the meeting to arrange for a voucher.

13. Announcements
    a. Transportation Policy Board Chair Announcements
    b. Next Technical Advisory Committee Meeting, April 22, 2024 – 2:00 p.m.
    c. Next Transportation Policy Board Meeting, May 13, 2024 – 2:00 p.m.

14. Adjournment

Persons with Disabilities:
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Transportation from Transit Stops:
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Capital Area Metropolitan Planning Organization
Technical Advisory Committee Meeting

Livestream at: www.campotexas.org

Meeting Minutes
February 26, 2024
2:00 p.m.

1. Certification of Quorum ..... Mr. Gary Hudder, Vice Chair

Due to technical difficulties experienced by the Chair, Ms. Laurie Moyer, P.E., Vice Chair Gary Hudder called the CAMPO Technical Advisory Committee (TAC) meeting to order at 2:03 p.m.

A quorum was announced present.

Present:

	Member	Representing	Member Attending	Alternate Attending
1.	Erik Leak	City of Austin	Y	
2.	Cole Kitten	City of Austin	Y	
3.	Richard Mendoza, P.E.	City of Austin	N	
4.	Tom Gdala	City of Cedar Park	Y	
5.	Nick Woolery	City of Georgetown	Y	
6.	Amber Schmeits Lewis	City of Kyle	Y	
7.	Ann Weis	City of Leander	Y	
8.	Emily Barron	City of Pflugerville	Y	
9.	Gary Hudder, Vice Chair	City of Round Rock	Y	
10.	Laurie Moyer, P.E., Chair	City of San Marcos	Y	

11.	Aimee Robertson	Bastrop County	Y	
12.	Kennedy Higgins	Bastrop County (Smaller Cities)	Y	
13.	Greg Haley, P.E.	Burnet County	Y	
14.	Mike Hodge, P.E.	Burnet County (Smaller Cities)	N	
15.	Will Conley	Caldwell County	N	
16.	David Fowler, AICP	Caldwell County (Smaller Cities)	Y	
17.	Winton Porterfield	Hays County	Y	
18.	Angela Kennedy	Hays County (Smaller Cities)	Y	
19.	Charlie Watts	Travis County	Y	
20.	Cathy Stephens	Travis County (Smaller Cities)	Y	
21.	Bob Daigh, P.E.	Williamson County	Y	
22.	Tom Yantis	Williamson County (Smaller Cities)	Y	Matt Rector
23.	David Marsh	CARTS	N	
24.	Mike Sexton, P.E.	CTRMA	Y	
25.	Sharmila Mukherjee	Capital Metro	Y	Nadia Barrera-Ramirez
26.	Heather Ashley-Nguyen, P.E.	TxDOT	Y	

2. Election of Officers for Technical Advisory Committee (TAC Chair and Vice Chair)

Vice Chair Hudder recognized Mr. Chad McKeown, CAMPO Deputy Executive Director as presenter for the Election of Officers for TAC Chair and Vice Chair. Mr. McKeown informed the Committee that the Nominating Committee (Ms. Aimee Roberts (Bastrop County), Mr. Tom Gdala (City of Cedar Park), and Mr. Charlie Watts (Travis County) met on February 1, 2024 to develop recommendations for a slate of officers for the 2024 TAC membership.

On behalf of the Nominating Committee, Mr. Charlie Watts thanked the current TAC officers for their service to the TAC.

Mr. Watts reported the Nominating Committee's recommendations for TAC officers as follows:
Chair, Mr. Gary Hudder (City of Round Rock)
Vice Chair, Ms. Emily Barron (City of Pflugerville)

Vice Chair Gary Hudder moved for approval of the Nominating Committee's recommendations for TAC officers, as presented.

Ms. Cathy Stephens seconded the motion.

The motion prevailed unanimously.

Vice Chair Gary Hudder assumed the office of Chair and proceeded with the next order of business.

3. Approval of January 22, 2024 Meeting Summary
..... Mr. Chad McKeown, CAMPO

Chair Hudder entertained a motion for approval of the January 22, 2024 meeting summary, as presented.

Vice Chair Barron moved for approval of the January 22, 2024 meeting summary, as presented.

Mr. Mike Sexton seconded the motion.

The motion prevailed unanimously.

4. Discussion and Recommendation on 2024 Performance Measure Targets
.....Mr. Nirav Ved, CAMPO

Chair Hudder recognized Mr. Nirav Ved, CAMPO Data & Operations Manager as presenter of the 2024 Performance Measure Targets. Mr. Ved provided a brief overview of Transportation Performance Management (TPM) and highlighted CAMPO's utilization of TPM. Mr. Ved presented the performance measure targets for Safety and noted that the Transit Asset Management (TAM) and Transit Safety Targets remain the same. Mr. Ved also highlighted the Annual State of Safety Report and CAMPO's interactive dashboard for performance measure management. The presentation was concluded with a request for TAC recommendation to adopt the 2024 Performance Measure Report and Targets, as presented. A brief question and answer with comments followed.

Chair Hudder entertained a motion for approval of a recommendation to adopt the 2024 Performance Measure Report and Targets, as presented.

Mr. Mike Sexton, P.E. moved for approval of a recommendation to adopt the 2024 Performance Measure Report and Targets, as presented.

Ms. Angela Kennedy seconded the motion.

The motion prevailed unanimously.

5. Discussion on Deferred Project Outcomes and Funding Impacts

..... Mr. Ryan Collins, CAMPO

Chair Hudder recognized Mr. Ryan Collins, CAMPO Short-Range Planning Manager as presenter for the Discussion on Deferred Project Outcomes and Funding Impacts. Mr. Collins provided a recap of the February 12, 2024 discussion by the Transportation Policy Board on the funding of deferred projects. Mr. Collins briefly discussed updates to the Project Assessment and Recommendation Report and noted that this item will be presented to the Transportation Policy Board again on April 15, 2024.

Mr. Collins later highlighted the Refund Scenario and projects approved for refunding and construction in FYs 2027 and 2028. The Committee was informed that those projects are currently in the process of being programmed into the Transportation Improvement Program. Mr. Collins discussed the Set-Aside Scenario and projects reviewed by the project sponsors to move forward. The Committee was informed that the Transportation Policy Board approved the City of Cedar Park's New Hope Dr. Project. Mr. Collins noted that the City of Austin's Intelligent Transportation System (ITS) Projects are still under review pending submittal of updated information by a March 12, 2024 deadline imposed by the Transportation Policy Board. Mr. Collins also summarized the process and timeline for those Set-Aside projects.

The Committee also received a brief summary of the financial funding forecasts and was informed that there will be Transportation Alternative Set-Aside (TASA) Funding Project Call in May 2025. The presentation was concluded by a brief question and answer with comments.

6. Presentation on Travel Demand Model Web Map

..... Ms. Lena Krajicek, CAMPO

Chair Hudder recognized Ms. Lena Krajicek, CAMPO GIS & Data Analyst as presenter of the Travel Demand Model Web Map. Ms. Krajicek provided a brief overview of the Travel Demand Model Web Map and highlighted its functionality. Ms. Krajicek informed the Committee that the link for the Web Map is live and noted that the Web Map will be updated as needed. The presentation was concluded without questions or comments.

7. Update on 2050 Regional Transportation Plan (RTP)

..... Mr. William Lisska, CAMPO

Chair Hudder recognized Mr. William Lisska, CAMPO Regional Planning Manager as presenter for the Update on the 2050 RTP. The Committee was informed that Mr. Lisska will serve as project manager for the development of the plan.

Mr. Lisska briefly discussed the planning process and highlighted the schedule for the development of the 2050 RTP. Mr. Lisska later informed the Committee that adoption of the 2050 RTP by the Transportation Policy Board is anticipated by May 2025. The update was concluded by a brief question and answer with comments.

8. Report on Transportation Planning Activities

Chair Hudder recognized Mr. Lisska who reported that a consultant firm has been selected for the development of the Regional Safety Action Plan.

Mr. Lisska informed the Committee that the TAC will serve as the Steering Committee for the Regional Safety Action Plan. The Report on Transportation Planning Activities was concluded by a brief question and answer with comments.

9. TAC Chair Announcements

Chair Hudder informed the Committee that the March 11, 2024 meeting of the Transportation Policy Board has been canceled. Chair Hudder announced that the next Technical Advisory Committee will be held on March 25, 2024 at 2:00 p.m. and the next Transportation Policy Board Meeting will be held on April 15, 2024 at 2:00 p.m.

10. Adjournment

The February 26, 2024 meeting of the CAMPO Technical Advisory Committee was adjourned at 2:44 p.m.

Date:	April 15, 2024
Continued From:	N/A
Action Requested:	Information

To:	Transportation Policy Board
From:	Mr. Ryan Collins, Short-Range Planning Manager
Agenda Item:	5
Subject:	Public Hearing and Presentation of Draft 2025-2028 Transportation Improvement Program (TIP) and Amendment to 2045 Regional Transportation Plan (RTP)

RECOMMENDATION

None. This item is for information purposes only.

PURPOSE AND EXECUTIVE SUMMARY

The Capital Area Metropolitan Planning Organization (CAMPO) is conducting community outreach for the upcoming 2025-2028 Transportation Improvement Program as well as the routine amendment cycle for the current 2023-2026 Transportation Improvement Program (TIP) and 2045 Regional Transportation Plan (RTP). This process includes a public hearing, 30-days of public comment, in-person and online open houses, and concludes with direct approval by the Transportation Policy Board as detailed in both the Public Participation Plan and Amendment Procedures.

FINANCIAL IMPACT

Any projects selected for federal funding through surface transportation programs including federal highway and transit formula and discretionary programs, must be approved directly by the Transportation Policy Board through the TIP and RTP for federal funding to be obligated to projects or sponsors.

BACKGROUND AND DISCUSSION

CAMPO develops and maintains the TIP and RTP. The TIP is adopted every two years and the RTP every 5 years. In addition to adoption, the TIP and RTP are amended on a regular basis to ensure that the most up-to-date information is approved by the TPB. Sponsors may submit a request for an amendment at any time using the online application which are then processed according to the amendment policies either through a regular amendment cycle, administratively, or as an out-of-cycle amendment. The nature of the request is determined upon review of the submission and additional coordination with the project sponsors as needed.

SUPPORTING DOCUMENTS

Attachment A – 2025-2028 TIP Program and 2045 RTP Summary List for Public Comment
Attachment B – Online Open House (Draft TIP, Maps, and Comment Portal)

2025-2028 Transportation Improvement Program and 2045 Regional Transportation Plan (Draft for Comment)										
MPO ID/CSJ	County	Sponsor	Project Name	Limits (From)	Limits (To)	Description	Phase	Fiscal Year	Cost (YOE)	Amendment
51-00189-00/ 0015-13-388	Travis	TxDOT	IH 35	US 290E	US 290W/SH 71	Reconstruct IH-35 from US 290E to US 290W/SH 71, add 2 northbound (NB) and 2 southbound (SB) non-tolled managed lanes from 51st to US290W/SH71, add 1 NB and 1 SB non-tolled managed lanes from US 290E to 51st St., add 1 NB and SB frontage road (FR) lane between 32nd St. and 15th St., add 1 SB FR Lane between 8th St. and 5th St., construct bypass lanes, rail/ped bridges and structural retrofit, drainage, SUP, and reconstruct intersections, ramps, general purpose lanes and frontage roads.	Engineering	2026	-	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-01/ 0015-13-423	Travis	TxDOT	IH 35	51st St.	Martin Luther King Jr. Blvd.	Reconstruct IH-35 to add 2 northbound (NB) and 2 southbound (SB) non-tolled managed lanes, add 1 NB and 1 SB frontage road lane between 32nd St. and MLK Blvd., construct bypass lanes, structures, drainage, shared use paths, and reconstruct intersections, ramps, general purpose lanes and frontage roads.	Construction	2026	$1,400,000,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-05/ 0015-13-432	Travis	TxDOT	IH 35	Airport Blvd.	Martin Luther King Jr. Blvd.	Construct CapMetro railroad and pedestrian bridges and structural retrofit.	Construction	2025	$150,000,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-04/ 0015-13-433	Travis	TxDOT	IH 35	Martin Luther King Jr. Blvd.	Holly Street	Construct Capital Express Central East Drainage Tunnel along IH-35	Construction	2025	$140,000,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-08/ 0015-13-437	Travis	TxDOT	IH 35	At 4th St.	-	Construct CapMetro railroad and pedestrian bridges.	Construction	2025	$78,000,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-06/ 0015-13-440	Travis	TxDOT	IH 35	Airport Blvd.	9th Street	Construct Capital Express Central West Drainage Tunnel along IH-35	Construction	2025	$169,913,344	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-09/ 0015-13-441	Travis	TxDOT	IH 35	US 290E	51st St.	Reconstruct IH-35, add 1 northbound and 1 southbound non-tolled managed lanes, construct bypass lanes, structures, drainage, shared use paths, and reconstruct intersections, ramps, general purpose lanes and frontage roads.	Construction	2026	$220,000,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00189-10/ 0015-13-442	Travis	TxDOT	IH 35	Martin Luther King Jr. Blvd.	Holly Street.	Reconstruct IH-35, add 2 northbound and 2 southbound non-toll managed lanes, add 1 northbound frontage road and 1 southbound frontage road between MLK Blvd and 15th St, add 1 southbound frontage road between 8th St. and 5th St., construct bypass lane	Construction	2026	$1,513,522,860	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00186-00/ 0113-13-163	Travis	TxDOT	SH 71	East of Riverside	US 183	Construct new 3-lane eastbound frontage road.	Construction	2028	$2,674,797	**New Listing** – Add new listing to the 2025-2028 TIP
51-00231-00/ 0113-13-168	Travis	TxDOT	SL 360	At Courtyard Drive	-	Grade separate intersection	Construction	2026	$52,693,759	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
61-00135-00/ 0151-10-001	Williamson	TxDOT/City of Cedar Park	US 183	RM 1431	Avery Ranch Blvd.	Construct 2-lane grade separated northbound and southbound frontage roads	Construction	2025	$110,400,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP

51-00191-00/ 0265-01-113	Travis	TxDOT	SH 71	SH 71/US 183 Interchange	Presidential Blvd.	Construct 3-lane eastbound frontage road, 1-lane direct connector from 183S to 71E and 1-lane direct connector from 183N to 71E	Construction	2028	$28,531,310	**New Listing** – Add new listing to the 2025-2028 TIP
51-00207-00/ 0265-02-042	Bastrop	TxDOT	SH 71	.85 Miles West of Tucker Hill Lane	Travis/Bastrop County Line	Construct overpass and add 2-lane one-way eastbound and westbound frontage roads.	Construction	2027	$20,720,000	**New Listing** – Add new listing to the 2025-2028 TIP
11-00011-00/ 0265-03-041	Bastrop	TxDOT	SH 71	CR 206 (Colorado Circle)	SH 21	Construct 4-lane overpass and add 2-lane eastbound and westbound frontage roads.	Construction	2026	$145,904,000	**New Listing** – Add new listing to the 2025-2028 TIP
11-00010-00/ 0265-03-042	Bastrop	TxDOT	SH 71	At Pope Bend Road	-	Construct 4-lane overpass and add 2-lane eastbound and westbound frontage roads.	Construction	2027	$49,280,000	**New Listing** – Add new listing to the 2025-2028 TIP
51-00207-01/ 0265-03-043	Bastrop	TxDOT	SH 71	Travis/Bastrop County Line	.65 Miles East of Tucker Hill Lane	Construct overpass and add 2-lane one-way eastbound and westbound frontage roads.	Construction	2027	$35,280,000	**New Listing** – Add new listing to the 2025-2028 TIP
11-00036-00/ 0323-01-028	Bastrop	TxDOT	SH 95	LP 230	FM 535	Upgrade from a 2-lane rural to a 3-lane urban roadway with continuous left-turn lane	Construction	2025	$8,590,445	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00222-00/ 0914-04-314	Travis	City of Austin	West Rundberg Lane	Burnet Road	Metric Blvd.	Extend current roadway as a four-lane major divided arterial with sidewalks, bikelanes, and new signalized intersection. ,	Construction	2028	$17,528,685	**New Listing** – Add new listing to the 2025-2028 TIP
51-00227-00/ 0914-04-317	Travis	City of Austin	Slaughter Lane	Mopac Expressway	Brodie Lane	Convert existing four-lane to six-lane divided roadway with shared use path and intersection improvements	Construction/ Engineering	2025	$15,726,250	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00230-00/ 0914-04-329	Travis/ Bastrop	Travis County	Pearce Lane	Kellam Road	East of Wolf Lane	Widen existing two-lane facility to a four-lane divided arterial with bike lanes and sidewalks.	Construction	2028	$70,515,000	**New Listing** – Add new listing to the 2025-2028 TIP
51-00189-03/ 0914-04-341	Travis	TxDOT	Cesar Chavez	IH 35	Colorado River	Construct Capital Express Central Drainage Tunnel along Cesar Chavez	Construction	2025	$438,331,296	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
51-00225-00/ 0914-05-194	Williamson	City of Austin	Lakeline Blvd	Parmer Lane	Lyndhurst Blvd.	Add two additional travel lanes and upgrade bicycle facilities and sidewalks	Construction	2027	$21,444,934	**New Listing** – Add new listing to the 2025-2028 TIP
61-00109-00/ 0914-05-222	Williamson	Williamson County	Hero Way	183A	RM 2243	Reconstruct 2-Lane undivided roadway to 2 travel lanes with continuous left-turn lane and extend existing Hero Way to RM 2243.	Construction	2026	$12,788,091	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
21-00001-00/ 0914-24-028	Burnet	TxDOT	Wirtz Dam Road	RM 1431	RM 2147	Construct bridge over Lake LBJ and add 2-lane roadway in each direction.	Construction	2028	$40,000,000	**New Listing** – Add new listing to the 2025-2028 TIP
41-00196-00/ 0914-33-076	Hays	Hays County	FM 150	Burleson Street	Kohlers Crossing	Relocation of the UP Rail-Siding in downtown Kyle where it crosses FM 150 to north of FM 1626.	Construction	2026	$22,666,827	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP

51-00233-01/ 2100-01-065	Travis	TxDOT	RM 2222	At SL 360	-	Construct diverging diamond intersection.	Construction	2026	$5,992,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
61-00191-00/ 2103-01-036	Williamson	City of Georgetown	RM 2243 (Leander Rd)	Norwood Drive	SW Bypass	Upgrade from a two-lane to a four-lane divided with new traffic signals and pedestrian improvements	Construction	2026	$5,040,000	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
61-00109-01/ 2103-01-040	Williamson	Williamson County	RM 2243	West of Hero Way	0.199 Miles West of Escalera Parkway	Realign and reconstruct 2-lane undivided roadway to 2 travel lanes and continuous left turn lane.	Construction	2026	$7,000,000	**New Listing** – Add new listing to the 2025-2028 TIP
73-00091-00	Travis/ Williamson	Capital Metro	-	-	-	Other capital program items including ADA complementary paratransit service, preventive maintenance, capital cost of contracting, crime prevention and security projects, and project administration.	Capital, Operating, Administration	2025	$49,981,973	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00092-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2025	$8,358,098	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00093-00	Travis/ Williamson	Capital Metro	-	-	-	MetroRail capital repair, rehabilitation and replacement projects including any eligible activities in the Capital Metro approved Budget and Capital Improvement Plan.	Capital	2025	$6,283,637	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00094-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2025	$4,116,022	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00095-00	Travis/ Williamson	Capital Metro	-	-	-	Traditional capital, other capital and operating projects to enhance mobility for seniors and individuals with disabilities. Includes subawards and program administration	Capital, Operating, Administration	2025	$2,377,252	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00096-00	Travis/ Williamson	Capital Metro	-	-	-	Other capital program items including ADA complementary paratransit service, preventive maintenance, capital cost of contracting, crime prevention and security projects, and project administration.	Capital, Operating, Administration	2026	$51,669,876	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00097-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2026	$8,153,312	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00098-00	Travis/ Williamson	Capital Metro	-	-	-	MetroRail capital repair, rehabilitation and replacement projects including any eligible activities in the Capital Metro approved Budget and Capital Improvement Plan.	Capital	2026	$6,443,379	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00099-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2026	$4,220,659	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00100-00	Travis/ Williamson	Capital Metro	-	-	-	Traditional capital, other capital and operating projects to enhance mobility for seniors and individuals with disabilities. Includes subawards and program administration	Capital, Operating, Administration	2026	$2,437,687	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00101-00	Travis/ Williamson	Capital Metro	-	-	-	Other capital program items including ADA complementary paratransit service, preventive maintenance, capital cost of contracting, crime prevention and security projects, and project administration.	Capital, Operating, Administration	2027	$51,669,876	**New Listing** – Add new listing to the 2025-2028 TIP

73-00102-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2027	$8,153,312	**New Listing** – Add new listing to the 2025-2028 TIP
73-00103-00	Travis/ Williamson	Capital Metro	-	-	-	MetroRail capital repair, rehabilitation and replacement projects including any eligible activities in the Capital Metro approved Budget and Capital Improvement Plan.	Capital	2027	$6,443,379	**New Listing** – Add new listing to the 2025-2028 TIP
73-00104-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2027	$4,220,659	**New Listing** – Add new listing to the 2025-2028 TIP
73-00106-00	Travis/ Williamson	Capital Metro	-	-	-	Other capital program items including ADA complementary paratransit service, preventive maintenance, capital cost of contracting, crime prevention and security projects, and project administration.	Capital, Operating, Administration	2028	$51,669,876	**New Listing** – Add new listing to the 2025-2028 TIP
73-00107-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2028	$8,153,312	**New Listing** – Add new listing to the 2025-2028 TIP
73-00108-00	Travis/ Williamson	Capital Metro	-	-	-	Traditional capital, other capital and operating projects to enhance mobility for seniors and individuals with disabilities. Includes subawards and program administration	Capital, Operating, Administration	2027	$2,437,687	**New Listing** – Add new listing to the 2025-2028 TIP
73-00109-00	Travis/ Williamson	Capital Metro	-	-	-	MetroRail capital repair, rehabilitation and replacement projects including any eligible activities in the Capital Metro approved Budget and Capital Improvement Plan.	Capital	2028	$6,443,379	**New Listing** – Add new listing to the 2025-2028 TIP
73-00110-00	Travis/ Williamson	Capital Metro	-	-	-	Revenue rolling stock	Capital	2028	$4,220,659	**New Listing** – Add new listing to the 2025-2028 TIP
73-00111-00	Travis/ Williamson	Capital Metro	-	-	-	Traditional capital, other capital and operating projects to enhance mobility for seniors and individuals with disabilities. Includes subawards and program administration	Capital, Operating, Administration	2028	$2,437,687	**New Listing** – Add new listing to the 2025-2028 TIP
73-00112-00	Williamson	City of Round Rock	-	-	-	City of Round Rock Public Transit Operations	Operating	2025	$2,798,100	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00113-00	Williamson	City of Round Rock	-	-	-	City of Round Rock Public Transit Operations	Operating	2026	$2,821,436	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00114-00	Williamson	City of Round Rock	-	-	-	City of Round Rock Public Transit Operations	Operating	2027	$2,877,864	**New Listing** – Add new listing to the 2025-2028 TIP
73-00115-00	Williamson	City of Round Rock	-	-	-	City of Round Rock Public Transit Operations	Operating	2028	$2,935,422	**New Listing** – Add new listing to the 2025-2028 TIP
73-00116-00	Hays	City of San Marcos	-	-	-	City of San Marcos Public Transit Operations	Operating	2025	$9,366,217	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP

73-00117-00	Hays	City of San Marcos	-	-	-	City of San Marcos Public Transit Operations	Operating	2026	$9,647,204	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00118-00	Hays	City of San Marcos	-	-	-	City of San Marcos Public Transit Operations	Operating	2027	$9,936,620	**New Listing** – Add new listing to the 2025-2028 TIP
73-00119-00	Hays	City of San Marcos	-	-	-	City of San Marcos Public Transit Operations	Operating	2028	$10,234,718	**New Listing** – Add new listing to the 2025-2028 TIP
73-00120-00	Hays	City of San Marcos	-	-	-	City of San Marcos Revenue Rolling Stock	Capital, Operating, Administration	2025	$149,046	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00121-00	Hays	City of San Marcos	-	-	-	City of San Marcos Revenue Rolling Stock	Capital, Operating, Administration	2026	$153,517	**Rollover –** Roll project over from 2023-2026 TIP to 2025-2028 TIP
73-00122-00	Hays	City of San Marcos	-	-	-	City of San Marcos Revenue Rolling Stock	Capital, Operating, Administration	2027	$158,123	**New Listing** – Add new listing to the 2025-2028 TIP
73-00123-00	Hays	City of San Marcos	-	-	-	City of San Marcos Revenue Rolling Stock	Capital, Operating, Administration	2028	$162,866	**New Listing** – Add new listing to the 2025-2028 TIP
55-00100-00	Travis	University of Texas at Austin/ TxDOT	Texas SMARTTrack	At UT Austin Pickle Research Campus	-	Closed and open course testing track for technology assessment, technology advancement, and testing.	Construction	2025	$18,000,000	**New Listing** – Add new listing to the 2045 RTP

Transportation Improvement Program (TIP) (All approved amendments to the Transportation Improvement Program are automatically amended in the Regional Transportation Plan per CFR 450.218.)

Regional Transportation Plan (RTP)

This list includes project that are individually listed in the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP). Individually listed projects are independently reviewed and approved by the Transportation Policy Board, Texas Transportation Commission, and Federal Highway Administration and Federal Transit Administration. In addition to individually listed projects provide here, the TIP contains grouped projects which are projects, or phases of projects, that are not considered to be of appropriate scale for individual identification and approval in a given program year. These projects are allowed to undergo a more streamlined administrative approval process based on the functional nature and scope of the project. These projects are reviewed individually by the MPO to determine eligibility and then grouped and approved together according to function and scope using the 12 grouped project categories approved for use by the Texas Department of Transportation (TxDOT), Federal Highway Administration (FHWA) and Federal Transit Administration (FTA).

Capital Area Metropolitan Planning Organization
Transportation Policy Board Meeting
The Junior League of Austin Community Impact Center
5330 Bluffstone Lane Austin, TX 78759
Monday, February 12, 2024 – 2:00 p.m.
Livestream at: www.campotexas.org

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1. Certification of Quorum – Quorum requirement is 12 members.
.....Commissioner Cynthia Long, Chair

The CAMPO Transportation Policy Board was called to order by the Chair at 2:04 p.m.

The roll was taken and a quorum was announced present.

	Member	Representing	Member Attending	Alternate Attending
1	Cynthia Long, Chair	Commissioner, Williamson County	Y	
2	Rudy Metayer, Vice-Chair	City of Pflugerville, Place 4	Y	
3	Clara Beckett, Secretary	Commissioner, Bastrop County	Y	
4	Alison Alter	City of Austin, District 10	Y	
5	Andy Brown	Judge, Travis County	N	Ms. Amy Pattillo
6	Christine DeLisle	Mayor City of Leander	N	Council Member Rudy Metayer
7	Paige Ellis	Mayor Pro Tem, City of Austin, District 8	Y	
8	Tucker Ferguson, P.E.	TxDOT-Austin District	Y	
9	Vanessa Fuentes	City of Austin, District 2	Y	
10	Natasha Harper-Madison	City of Austin, District 1	Y	
11	Matt Harriss	Capital Metro Board Member	Y	
12	Ann Howard	Commissioner, Travis County	N	Commissioner Clara Beckett
13	Jane Hughson	Mayor, City of San Marcos	Y	
14	Debbie Ingalsbe	Commissioner, Hays County	N	Commissioner Cynthia Long

15	Travis Mitchell	Mayor, City of Kyle	N	
16	Craig Morgan	Mayor, City of Round Rock	N	Council Member Kristin Stevens
17	James Oakley	Judge, Burnet County	Y	
18	Amy Pattillo	Travis County	Y	
19	Jim Penniman-Morin	City of Cedar Park	Y	
20	Josh Schroeder	Mayor, City of Georgetown	Y	
21	Edward Theriot	Commissioner, Caldwell County	Y	
22	Jeffrey Travillion	Commissioner, Travis County	N	Council Member Vanessa Fuentes

2. Public Comments

There were no public comments.

Video of this item can be viewed here. Start Video at 00:00:15

3. Executive Session

An Executive Session was not convened.

4. Report from Technical Advisory Committee (TAC) Chair

The Chair recognized Ms. Laurie Moyer, P.E. who provided a report of the discussion items from the January 22, 2024 TAC Meeting. Ms. Moyer reported that the TAC received a presentation on the review process for the funding of deferred projects. Ms. Moyer informed the Board that the TAC reached consensus that the review process was fair and transparent. Ms. Moyer also reported that the TAC received a presentation on performance measure target updates and a recommendation for approval will be presented at the next Transportation Policy Board meeting.

Video of this item can be viewed here. Start Video at 00:00:25.

5. Discussion and Take Appropriate Action on January 8, 2024 Meeting Minutes

The Chair entertained a motion for approval of the January 8, 2024 meeting minutes, as presented.

Council Member Alison Alter moved for approval of the January 8, 2024 meeting minutes, as presented.

Vice Chair Rudy Metayer seconded the motion.

The motion prevailed unanimously.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Council Member Natasha Harper-Madison and Mayor Travis Mitchell

Video of this item can be viewed here. Start Video at 00:01:18.

6. Discussion and Take Appropriate Action on FY 2024 & 2025 Unified Planning Work Program (UPWP) Amendment #2

The Chair recognized Ms. Theresa Hernandez, CAMPO Finance & Administration Manager who provided a brief overview of the UPWP and summarized proposed Amendment #2 to the FY 2024 & 2025 UPWP as follows:

1. Carryover $250,000 unexpended FY 2023 PL funds for moving and operation expenses. (Funds were previously approved by the Transportation Policy Board on June 12, 2023.)
2. Amend two (2) Cap Metro planning studies, Subtasks 4.4.1 and 4.4.2

Ms. Hernandez requested Transportation Policy Board approval of Amendment #2 to FY 2024 & 2045 with accompanying Resolution 2024-2-6.

The Chair entertained a motion for approval of Amendment #2 to the FY 2024 & 2025 UPWP with accompanying Resolution 2024-2-6, as presented.

Judge James Oakley moved for approval of Amendment #2 to the FY 2024 & 2025 UPWP with accompanying Resolution 2024-2-6, as presented.

Mayor Jane Hughson seconded the motion.

The motion prevailed.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Council Member Natasha Harper-Madison and Mayor Travis Mitchell

Video of this item can be viewed here. Start Video at 00:01:40.

Council Member Natasha Harper-Madison joined the meeting.

7. Discussion and Take Appropriate Action to Authorize CAMPO Executive Director to Begin Negotiations on Regional Safety Action Plan Contract

The Chair recognized Mr. William Lisska, CAMPO Regional Planning Manager who informed the Board that CAMPO issued a Request for Proposals (RFP) for support services for a Regional Safety Action Plan (RSAP) on October 30, 2023. The Board was informed that the RSAP will be funded by a $2.3 million grant from the U.S. Department of Transportation. Mr. Lisska reported that the scope of work for the RSAP will include the development of a regional roadway safety action plan for CAMPO's 6-county region and provided a brief overview of the procurement process for the RSAP contract.

Mr. Lisska identified the top-ranked consultant firm as DKS Associates and requested Transportation Policy Board approval to authorize the CAMPO Executive Director to begin negotiations on the Regional Safety Plan contract.

The Chair entertained a motion for approval to authorize the CAMPO Executive Director to negotiate and execute a contract with the top-ranked consultant firm for the Regional Safety Action Plan.

Council Member Natasha Harper-Madison moved for approval to authorize the CAMPO Executive Director to negotiate and execute a contract with the top-ranked consultant firm for the Regional Safety Action Plan.

Judge James Oakley seconded the motion.

The motion prevailed.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Council Member Natasha Harper-Madison, Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Mayor Travis Mitchell

Video of this item can be viewed here. Start Video at 00:03:39.

8. Discussion and Take Appropriate Action on Funding of Deferred Projects

The Chair recognized Mr. Ryan Collins, CAMPO Short-Range Planning Manager who presented and provided an overview of the Project Assessment and Recommendation Report included in the meeting materials. Mr. Collins informed the Board that staff is recommending three (3) of four (4) deferred projects included in the deferral list for funding and summarized project readiness for each projects.

Mr. Collins highlighted recommendations for the Refunding Scenario as follows:

Project Sponsor	Project Name	Total Cost
City of Austin	W. Rundberg Ln.	$17,528,685
City of Austin	Lakeline Blvd.	$21,444,934
City of Austin	Pearce Ln.	$70,515,000

Mr. Collins also highlighted recommendations for the Set-Aside Scenario as follows:

Project Sponsor	Project Name	Local Expenditure
City of Cedar Park	New Hope Dr.	$22,619,961

The Board was informed that recommendations included in the Project Assessment and Recommendation Report make assumptions regarding project development, sponsor responsibilities, and post-award process.

Mr. Collins requested approval of the Refunding Scenario as presented in the Project Assessment and Recommendation Report with accompanying Resolution 2024-2-8a.

Mr. Collins also requested approval of the Set-Aside Scenario as presented in the Project Assessment and Recommendation Report with accompanying Resolution 2024-2-8b.

The Chair entertained a motion for approval of the Refunding Scenario and Set-Aside Scenario as presented with accompanying Resolution 2024-2-8a and Resolution 2024-2-8b.

Mayor Jim Penniman-Morin moved for approval of the Refunding Scenario and Set-Aside Scenario as presented with accompanying Resolution 2024-2-8a and Resolution 2024-2-8b.

Mayor Josh Schroeder seconded the motion.

Council Member Alison Alter made a substitute motion to approve the Refunding Scenario as presented with accompanying Resolution 2024-2-8a and postponement for approval of the Set-Aside Scenario with accompanying Resolution 2024-2-8b until the April Transportation Policy Board meeting.

Council Member Natasha Harper-Madison seconded the substitute motion.

Following clarification by Mr. Ashby Johnson, CAMPO Executive Director and a detailed discussion by the Board, Council Member Alison Alter withdrew the substitute motion for approval of the Refunding Scenario as presented with accompanying Resolution 2024-2-8a and postponement for approval of the Set-Aside Scenario with accompanying Resolution 2024-2-8b until the April Transportation Policy Board meeting.

Council Member Alison Alter later made an amended motion for approval of the Refunding Scenario for the total cost and amended Transportation Development Credit (TDC) amount and approval of the Set-Aside Scenario for the Local Expenditure with the submittal of all required information by March 12, 2024 for the reimbursement of remaining $3,500,499.

Council Member Natasha Harper-Madison seconded the amended motion.

The Chair called the question to accept the amended motion.

The amended motion prevailed unanimously.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Council Member Natasha Harper-Madison, Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Mayor Travis Mitchell

Following approval of the amended motion, the Chair called the question for approval of the Refunding Scenario for the total cost and amended Transportation Development Credit (TDC) amount and approval of the Set-Aside Scenario for the Local Expenditure with the submittal of all required information by March 12, 2024 for the reimbursement of remaining $3,500,499.

The amended motion prevailed unanimously.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Council Member Natasha Harper-Madison, Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Mayor Travis Mitchell

Video of this item can be viewed here. Start Video at 00:5:50.

9. Discussion on Federal Performance Measure Target Updates

The Chair recognized Mr. Nirav Ved, CAMPO Data & Operations Manager who provided a brief overview on Transportation Performance Management. Mr. Ved identified the performance measure goals and targets and highlighted the performance measure targets as adopted by the state. Mr. Ved also provided a brief overview of the interactive Performance Measure Dashboard currently located on the CAMPO website.

Video of this item can be viewed here. Start Video at 00:48:28

10. Executive Director's Report on Transportation Planning Activities

A. 2024 American Association of State Highway and Transportation Officials (AASHTO) Washington Briefing

The Chair recognized Mr. Ashby Johnson, CAMPO Executive Director who reported on his participation as a panelist for the 2024 AASHTO Washington Briefing in Washington, DC. Mr. Johnson reported that the briefing was well attended by various transportation officials, identified the topics of discussion, and summarized the discussions during the briefing.

The Chair reminded the Board that the memorandum on the Environmental Protection Agency (EPA) Area Designation Process for Ozone National Ambient Air Quality Standards (NAAQS) was included in the meeting materials for review.

B. 2024 Transportation Planning Activities Calendar

A report on the 2024 Transportation Planning Activities Calendar was not provided.

Video of this item can be viewed here. Start Video at 01:01:59.

11. Announcements

a. Transportation Policy Board Chair Announcements

The Chair announced that the March 11, 2024 Transportation Policy Board Meeting has been canceled.

b. The next Technical Advisory Committee Meeting will be held on February 26, 2024 at 2:00 p.m.
c. The next Transportation Policy Board Meeting will be held on April 15, 2024 at 2:00 p.m.

The Chair announced that a brief reception will be held immediately following adjournment of the February 12, 2024 Transportation Policy Board meeting.

Video of this item can be viewed here. Start Video at 01:11:04

12. Adjournment

The February 12, 2024 meeting of the CAMPO Transportation Policy Board was adjourned at 3:04 p.m. by unanimous consent.

Video of this item can be viewed here. Start Video at 01:11:53

Date:	April 15, 2024
Continued From:	February 12, 2024
Action Requested:	Adoption

To:	Transportation Policy Board
From:	Mr. Nirav Ved, Data and Operations Manager
Agenda Item:	7
Subject:	Discussion and Take Appropriate Action on Federal Performance Measure Target Updates

RECOMMENDATION

Staff recommends the Transportation Policy Board adopt the 2024 Federal Performance Measures.

PURPOSE AND EXECUTIVE SUMMARY

As part of the performance-based transportation planning process the Transportation Policy Board (TPB) has adopted performance targets for Safety (PM1), Pavement and Bridge Conditions (PM2), System Performance and Freight Performance Measures (PM3) as well as Transit Asset Management (TAM) and Transit Safety. As part of this process, the TPB must adopt PM1, TAM, and Transit Safety annually. PM2 and PM3 are adopted in response to TxDOT's target updates which typically occur every two years.

FINANCIAL IMPACT

None.

BACKGROUND AND DISCUSSION

The use of a performance-based transportation planning process is required in the development of the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) including the adoption of performance targets in key areas. On an annual basis, the TPB adopts updated performance measure targets included in the Performance Measure Report, which are then incorporated into the programming and planning processes.

SUPPORTING DOCUMENTS

Attachment A – *TxDOT 2024 Safety Performance Measure Targets*

Attachment B – *2024 Performance Measure Report*

Attachment C – *Resolution 2024-4-7 (Draft)*

Performance Measures and Target Setting – The Texas Transportation Commission (TTC) adopted Minute Order 115481 in May of 2019, directing the Texas Department of Transportation (TxDOT) to work toward the goal of reducing the number of deaths on Texas roadways by half by the year 2035 and to zero by the year 2050. TxDOT has modified its performance measures and target calculations accordingly.

Performance Targets:

Target: Total number of traffic fatalities

2024 Target: To decrease the expected rise of fatalities to not more than a five-year average of 3,567 fatalities in 2024. The FY 2024 Targets expressed as a 5-year average, would be as follows:

Year	Target or Actual Data
2020	3,874
2021	4,486
2022	3,272
2023	3,159
2024	3,046
2024 Target expressed as 5-year avg.	**3,567**

As noted in the table above, the calendar year target for 2024 would be 3,046 fatalities.

Target: Total number of serious injuries

2024 Target: To decrease the expected rise of serious injuries to not more than a five-year average of 17,062 serious injuries in 2024. The FY 2024 Targets expressed as a 5-year average, would be as follows:

Year	Target or Actual Data
2020	14,659
2021	19,434
2022	17,539
2023	17,819
2024	18,242
2024 Target expressed as 5-year avg.	**18,096**

As noted in the table above, the calendar year target for 2024 would be 18,242 serious injuries. The five-year average increases but based on the BIL requirements – the targets are to remain the same or decrease from the previous year. That said, the 2024 Target expressed as 5-year avg. remains 17,062.

Target: Fatalities per 100 million vehicle miles traveled

2024 Target: To decrease the expected rise of fatalities per 100 MVMT to not more than a five-year average of 1.36 fatalities per 100 MVMT in 2024. The 2024 Target expressed as a 5-year average would be as follows:

Year	Target or Actual Data
2020	1.49
2021	1.70
2022	1.25
2023	1.20
2024	1.14
2024 Target expressed as 5-year avg.	**1.36**

As noted in the table above, the calendar year target for 2024 would be 1.14 fatalities per 100 MVMT.

Target: Serious Injuries per 100 million vehicle miles traveled

2024 Target: To decrease the serious injuries per 100 MVMT to not more than a five-year average of 6.39 serious injuries per 100 MVMT in 2024. The 2024 Target expressed as a 5-year average would be as follows:

Year	Target or Actual Data
2020	5.63
2021	7.35
2022	6.70
2023	6.77
2024	6.77
2024 Target expressed as 5-year avg.	**6.64**

As noted in the table above, the calendar year target for 2024 would be 6.77 serious injuries per 100 MVMT. The five-year average increases but based on the BIL requirements – the targets are to remain the same or decrease from the previous year. That said, the 2024 Target expressed as 5-year avg. remains 6.39.

Target: Total number of non-motorized fatalities and serious injuries

2024 Target: To decrease the expected rise of non-motorized fatalities and serious injuries to not more than a five year average of 2,357 non-motorized fatalities and serious injuries in 2024. The 2024 Target expressed as a 5-year average would be as follows:

Year	Target or Actual Data
2020	2,206
2021	2,628
2022	2,321
2023	2,340
2024	2,360
2024 Target expressed as 5-year avg.	**2,371**

As noted in the table above, the calendar year target for 2023 would be 2,360 non-motorized fatalities and serious injuries. The five-year average increases but based on the BIL requirements – the targets are to remain the same or decrease from the previous year. That said, the 2024 Target expressed as 5-year avg. remains 2,357.

Performance Measure Report

2024

CAMPO
CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION
CENTRAL TEXAS

Background

To provide more transparency in the selection and prioritization of surface transportation projects, federal legislation requires a performance-based planning process framework in the development of the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) including the adoption of performance measure targets.

The U.S. Department of Transportation (USDOT) developed performance measures in seven key goal areas identified in federal transportation legislation. State departments of transportation and metropolitan planning organizations must set performance measure targets in these key areas as part of a larger performance measure planning system that creates an outcome driven approach.

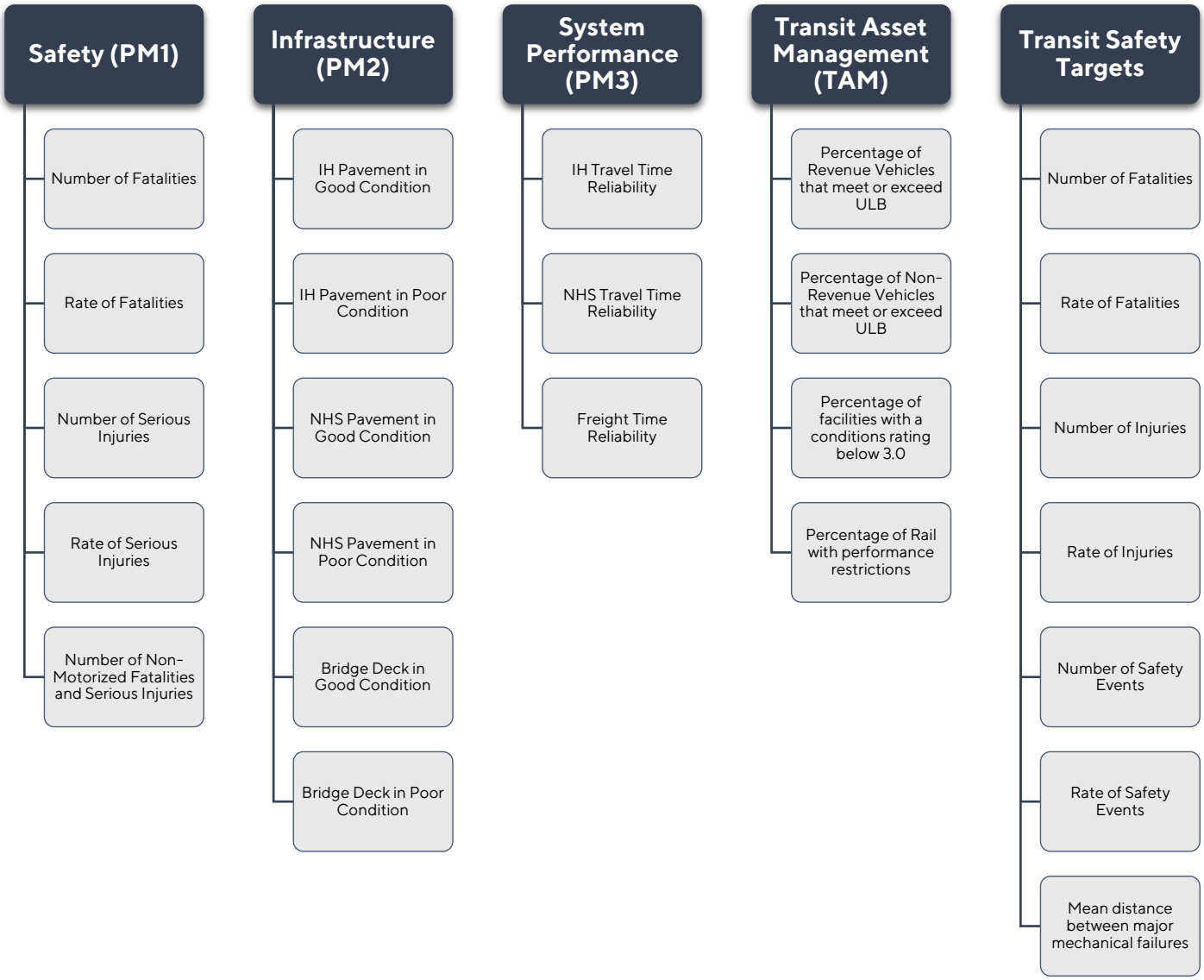
- Safety
- Infrastructure condition
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays

Transportation performance management is an iterative process that helps guide the planning process by providing directional goals for the plans and programs, but also provides a feed-back mechanism in which to measure success. To achieve the federal goals, states and MPOs jointly develop performance measures and targets with which to guide the transportation development process.

The Transportation Policy Board adopts the Performance Measure Report and updated performance measure targets on an annual basis. These targets are then incorporated into the programming and planning processes of the Transportation Improvement Program, Regional Transportation Plan, and other planning activities.

Summary

The use of a performance-based transportation planning process is required in the development of the Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP). Part of the performance-based planning process requires the adoption of performance targets in key areas including Safety (PM1), Pavement and Bridge Conditions (PM2), System Performance and Freight Performance Measures (PM3) for on-system facilities as well as Transit Asset Management (TAM) and Transit Safety.



Safety Performance Measures (PM1)

The Transportation Policy Board currently supports the state's efforts and has adopted the Safety targets set by the Texas Department of Transportation (TxDOT). The table below details the

statewide safety numbers which are supported by the priorities of the Transportation Policy Board and project investment. Targets are set annually, both at the state and local level, and are adjusted based on the previous year's safety information and policy changes. Please refer to CAMPO's performance measure dashboards for more information on regional performance.

Safety (PM1)	Current Target	2024 Target	5-Year Rolling Average Target
Number of Fatalities	3,159	3,046	3,046
Rate of Fatalities	1.20	1.14	1.14
Number of Serious Injuries	17,819	17,062	17,062
Rate of Serious Injuries	6.77	6.39	6.39
Number of Non-Motorized Fatalities and Serious Injuries	2,357	2,357	2,357

Please note, in addition to the calendar year targets, TxDOT sets a rolling 5-year target for each of the performance measures that is adjusted every year based on the actual safety data available from the previous year. These 5-year average targets represent the overarching safety goals set forth by the Texas Transportation Commission, namely a specific percentage reduction over the 5-year period. The new calendar year targets are calculated each year to support the rolling 5-year average targets. Because the calendar year targets are the actual targets needed for the current year to achieve the rolling 5-year average, the Transportation Policy Board adopts the calendar year targets.

Pavement and Bridge Conditions (PM2)

The Transportation Policy Board evaluates the general condition of the regional transportation system by establishing minimum condition standards and setting targets conditions for pavement and bridges. The Transportation Policy Board currently supports the state's efforts and has

adopted the Pavement and Bridge Performance Measures (PM2) targets set by the Texas Department of Transportation. Please refer to CAMPO's performance measure dashboards for more information on regional performance.

Infrastructure (PM2)	Current Target	Baseline	2-Year Target	4-Year Target
IH Pavement in Good Condition	66.5%	64.5%	63.9%	63.6%
IH Pavement in Poor Condition	.2%	.1%	.2%	.2%
NHS Pavement in Good Condition	54.1%	51.7%	45.5%	46%
NHS Pavement in Poor Condition	14.2%	1.3%	1.5%	1.5%
Bridge Deck in Good Condition	50.4%	49.2%	48.5%	47.6%
Bridge Deck in Poor Condition	1.5%	1.1%	1.5%	1.5%

Please note, in updating this year's performance measure targets for PM2, the Texas Department of Transportation (TxDOT) has set 2 and 4-year targets for 2022 through 2025. These targets were set utilizing the most recent data available (baseline) regarding performance metrics.

System and Freight Performance (PM3)

The Transportation Policy Board has prioritized addressing congestion in the region by establishing system performance measures and setting targets for travel time reliability. The Transportation Policy Board currently supports the state's efforts and adopted the System and Freight Performance targets set by the Texas Department of Transportation. Please refer to

CAMPO's performance measure dashboards for more information on regional performance.

System Performance (PM3)	Current Target	Baseline	2-Year Target	4-Year Target
IH Travel Time Reliability	70.0%	84.6%	70%	70%
NHS Travel Time Reliability	70.0%	90.3%	70%	70%
Freight Time Reliability	1.76%	1.39	1.55	1.55

Please note, in updating this year's performance measure targets for PM3, the Texas Department of Transportation (TxDOT) has set 2 and 4-year targets for 2022 through 2025. These targets were set utilizing the most recent data available (baseline) regarding performance metrics.

Transit Asset Management (TAM)

Direct recipients of federal funds from the Federal Transit Agency (FTA), must comply with the FAST Act by adopting Transit Asset Management (TAM) performance measures and targets. These direct recipients, including Capital Metro and the City of Round Rock, must develop a Transit Asset Management (TAM) Plan with performance measure goals related to capital assets. In addition to the plan, the transit agencies must set annual performance measure targets for asset classes that they manage.

Transit Asset Management (TAM)	Current Target	2023 Target
Percentage of Revenue Vehicles that meet or exceed ULB	<15%	<15%
Percentage of Non- Revenue Vehicles that meet or exceed ULB	<15%	<15%
Percentage of facilities with a conditions rating below 3.0	<15%	<15%
Percentage of Rail with performance restrictions	0%	0%

Note that regional transit providers approach Transit Asset Management target setting differently; whereas some providers set specific targets for their asset classes, others set a more generalized range in their Transit Asset Management Plans. Because of this, CAMPO adopts an overall range that is inclusive of both the agency specific targets and set ranges across providers.

Transit Safety Targets

Direct recipients of 5307 federal funding from the Federal Transit Agency (FTA), must comply with the federal regulations by adopting a Public Transportation Agency Safety Plan (PTASP) which includes transit safety targets that are adopted annually by the agency and the Transportation Policy Board. These direct recipients, including Capital Metro, the City of Round Rock and the City of San Marcos. Please note that rate targets are weighted averages between the providers, whereas specific number targets are the combined targets of the recipients.

Transit Safety Targets	Current Targets	2024 Targets
Number of Fatalities	1	0
Rate of Fatalities	0	0
Number of Injuries	65	65
Rate of Injuries	0.54	.35
Number of Safety Events	85	85
Rate of Safety Events	0.195	0.195
Mean distance between major mechanical failures	17,200	17,200

Performance Measure Resources

Transportation Performance Management (TPM) is a federally mandated strategic approach that uses system information to inform investment and policy decisions to achieve national performance goals. While target setting provides those critical benchmarks to measure success, it is the actionable investment decisions that directly impact the region. With that in mind, CAMPO has prioritized performance management in its investment strategies, planning activities, and has also developed digital tools to help provide real-time information and in-depth analysis regarding performance.

Transportation Performance Management Resources	
Project Selection Criteria	Project selection process that included a significant focus on the prioritization of projects that provide significant safety benefits, specifically in a project's ability to directly reduce fatalities and serious injuries.
Performance Measure Dashboards	Comprehensive digital dashboards that provide the most up-to-date regional performance information. The dashboard provides users with the ability to do in-depth analyses on safety, performance, and pavement/bridge conditions
Planning Activities	CAMPO's planning activities from the Regional Transportation Plan and Transportation Improvement Program to the numerous regional and local studies include transportation performance management as an integral part of the planning process. Examples include: • Regional Transportation Plan • Transportation Improvement Program • Regional Safety Plan • Regional Freight Study • Regional Bottlenecks/Interchange Study • Mobile Emission Reduction Plan • Local Studies

Resolution 2024-4-7

Adoption of Performance Measure Targets and 2024 Performance Measure Report

WHEREAS, pursuant to federal law, the Governor of the State of Texas designated the Capital Area Metropolitan Planning Organization (CAMPO) as the Metropolitan Planning Organization for the Austin region in 1973; and

WHEREAS, CAMPO's Transportation Policy Board is the regional forum for cooperative decision-making regarding transportation issues in Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson Counties in Central Texas; and

WHEREAS, use of a performance-based transportation planning process is required by the federal government in the development of the Transportation Improvement Program (TIP) and long-range Metropolitan Transportation Plan (MTP); and

WHEREAS, part of the performance-based planning process requires the adoption of performance targets in key areas by the effective date set by the FHWA's Final Rulemaking; and

WHEREAS, by these rulemakings, CAMPO must adopt performance measure targets for Safety (PM1), Pavement and Bridge Conditions (PM2), System Performance and Freight Performance Measures (PM3), Transit Asset Management (TAM) and Transit Safety Targets; and

WHEREAS, CAMPO has updated its performance measure targets in the required areas as part of the 2024 Performance Measure Report; and

NOW, THEREFORE BE IT RESOLVED that the CAMPO Transportation Policy Board hereby votes to adopt the updated performance measures targets as reflected in the 2024 Performance Measure Report; and

Hereby orders the recording of this resolution in the minutes of the Transportation Policy Board; and

BE IT FURTHER RESOLVED that the Board delegates the signing of necessary documents to the Board Chair.

The above resolution being read, a motion to adopt the updated performance measures targets as reflected in the 2024 Performance Measure Report as reflected was made on April 15, 2024 by _____duly seconded by _____.

Ayes:

Nays:

Abstain:

Absent and Not Voting:

SIGNED this 15th day of April 2024

_____

Chair, CAMPO Board

Attest:

_____

Executive Director, CAMPO

Date: April 15, 2024
Continued From: February 12, 2024
Action Requested: Approval

To: Transportation Policy Board

From: Mr. Ryan Collins, Short-Range Planning Manager

Agenda Item: 8

Subject: Discussion and Take Appropriate Action on Set-Aside Scenario

RECOMMENDATION

Staff recommends the Transportation Policy Board approve the selection of projects as detailed in the attached Addendum to the Project Assessment and Recommendation Report and provided in the accompanying Resolution 2024-4-8.

PURPOSE AND EXECUTIVE SUMMARY

CAMPO, in coordination with the City of Austin, has completed the assessment of the three previously deferred Surface Transportation Block Grant (STBG) projects listed below for a potential set-aside scenario. Staff received updated information from COA Staff on March 12, 2024. Upon review of the information, alongside additional coordination with the COA, CAMPO has compiled an Addendum to the Project Assessment and Readiness Report with the review results and recommendation.

Sponsor	Project	Original Award	Local Funding
City of Austin	Vehicle Detection	$8,960,000	$3,008,000
City of Austin	Traffic Monitoring System	$1,120,000	$500,000
City of Austin	EMS/Transit Signal Priority	$7,280,000	$4,987,466

FINANCIAL IMPACT

This item involves the potential allocation of future Surface Transportation Block Grant (STBG/Category7) funding. The final determination of the TPB regarding the set-aside scenario will impact the availability of future STBG.

BACKGROUND AND DISCUSSION

The TPB is responsible for allocating certain federal and state funds for transportation projects in the six-county capital region. To administer these funding programs effectively, the TPB has adopted a regional approach to project selection that includes a comprehensive extensive readiness assessment, planning factor review, and cost-benefit analysis. In addition to selection, the TPB also monitors selected projects to ensure continual progress.

SUPPORTING DOCUMENTS

Attachment A – *Addendum*
Attachment B - *Project Assessment and Recommendation Report*
Attachment C – *Resolution 2024-4-8 (Draft)*

Surface Transportation Block Grant (STBG)

Project Assessment and Recommendation Report

Addendum

April 15, 2024

CAMPO
CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION
CENTRAL TEXAS

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Set-Aside Scenario

The set-aside scenario evaluation began by reviewing the initial deferral list of projects previously funded with Surface Transportation Block Grant (STBG) funding. This review identified projects that were removed from STBG refunding consideration and voluntarily implemented utilizing local funding. Four projects were identified as potentially meeting these criteria.

On January 10, 2024, staff reached out to sponsors and requested documentation confirming implementation and actual expenditures by January 24, 2024, to ensure a timely review process. Verification documentation was requested so that implementation and actual costs could be confirmed. This documentation could include bidding documentation, invoices, or any other project related documentation that provided the necessary information to verify actual implementation. Staff received updated implementation information and verification documentation from the City of Cedar Park on January 10, 2024. Staff received updated implementation information without verification documentation from the City of Austin on January 24, 2024.

On February 12, 2024, the Transportation Policy Board (TPB) approved the set-aside funding for the City of Cedar Park and requested additional information from the City of Austin due by March 12, 2024 to continue the set-aside review of the three remaining projects. The City of Austin coordinated with CAMPO staff and provided the updated information on March 12, 2024.

Upon review and verification of project expenditures, CAMPO staff and the City of Austin met to review the results and discuss the two potential scenarios requested to be reviewed by the Transportation Policy Board including a future funding set-aside funding for a new project, or the potential to fund the remaining unfunded portions of the previously deferred projects so that they could be completed as originally scoped.

The original award information for the projects is below. These projects were deferred in 2020 and removed from refunding consideration in 2021 in coordination with the City of Austin. (See Appendix E in Project Assessment and Recommendation Report).

Set Aside Scenario – Original Award Information (2018)			
Project	**STBG Award**	**Local Match**	**Total**
Vehicle Detection	$8,960,000	$2,240,000	$11,200,000
Traffic Monitoring System	$1,120,000	$280,000	$1,400,000
EMS/Transit Signal Priority	$7,280,000	$1,456,000	$7,280,000
Total	**$15,904,000**	**$3,976,000**	**$19,880,000**

Review Results and Recommendation

Upon review of the additional information provided by the City of Austin, CAMPO staff reviewed and confirmed expenditures to-date, total local funding allocation, current funding, and future funding needed to complete the projects as originally scoped. Below are the results of the review along with the funding amounts associated with the two potential options for TPB consideration.

Review Results				
Project	**Expenditures**	**Local Allocation**	**Need (FY 2024)**	**Need (FY 2028)**
Vehicle Detection	$725,728	$3,008,000	$8,484,000	$9,925,080
Traffic Monitoring System	$747,026	$500,000	$550,800	$644,358
EMS/Transit Signal Priority	$2,676,682	$4,987,466	$4,872,200	$5,699,785
Total	**$4,149,436**	**$8,495,466**	**$13,907,000**	**$16,269,223**

Option 1 – Set Aside Scenario			
Project	**STBG Award**	**Local Match**	**Total**
Project TBD	$8,495,466	$2,123,566	$10,619,332
Total	**$8,495,466**	**$2,123,566**	**$10,619,332**

Option 2 – Refunding Scenario			
Project	**STBG Award**	**Local Match**	**Total**
Vehicle Detection	$7,940,064	$1,985,016	$9,925,080
Traffic Monitoring System	$515,486	$128,872	$644,358
EMS/Transit Signal Priority	$4,559,828	$1,139,957	$5,699,785
Total	**$13,015,378**	**$3,253,845**	**$16,269,223**

Reviewing the options, and in coordination the City of Austin, staff recommends the TPB approve Option 2. While these projects were previously removed from refunding consideration, Option 2 treats the projects like the remaining deferred projects refunded in February with inflation adjustments to the fiscal year of first funding availability (2028).This recommendation assumes that the City of Austin will continue to implement these projects utilizing the available local allocation through to federal funding availability, and that all other federal and state local project processes and procedures will be completed for implementation in FY 2028.

Financial Forecast

Staff have developed the financial forecast to determine funding availability for Transportation Policy Board decision-making. Please note that the forecast is an estimate and snapshot in time based on available information from the Federal Management Information System (FMIS), TxDOT's Financial Reports, and other federal financial resources.

Funding Forecast‡				
Fiscal Year	**CRP**	**STBG**	**TASA**	**Total**
2024	$13,941,207	$56,696,207	$9,137,859	$79,775,273
2025	$5,979,980	$48,073,599	$5,574,292	$59,627,871
2026*	$6,099,587	$49,035,132	$5,685,785	$60,820,504
2027	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2028	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2029	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2030	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2031	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2032	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2033	$5,865,017	$47,149,405	$5,467,128	$58,481,550
Total	**$67,075,893**	**$483,850,773**	**$58,667,832**	**$609,594,498**

Scenario	Funding Usage
Previously Committed	$107,687,744
Approved Refunding Scenario	$100,955,673
Approved Set-Aside Scenario	$22,619,961
FY 2028 Available for Option 1 or 2	$19,758,308

*The current federal authorization, the Infrastructure and Investments Jobs Act (IIJA), ends in Fiscal Year 2026. Projections beyond assume the congressional approval of continual resolutions (CR).

‡All funding amounts in this forecast are for the federal funding share only and does not include the required state/local share.

March 18, 2024

Subject: Deferred Project Award and Next Steps

Dear Project Sponsor,

On February 12, 2024, the Capital Area Metropolitan Planning Organization's (CAMPO) Transportation Policy Board approved the refunding scenario as reflected in Resolution 2024-2-8a and the finalized Project Assessment and Recommendation Report (table excerpt below).

Refunding Scenario (Approved on February 12, 2024)							
Sponsor	**Project**	**Phase**	**Federal**	**Local Match**	**TDC**	**Total Cost**	**Fiscal Year**
City of Austin	W. Rundberg	C	$13,738,122	$3,790,563	-	$17,528,685	2028
City of Austin	Lakeline Blvd	C	$16,742,551	$4,702,383	-	$21,444,934	2027
Travis County	Pearce Lane	C	$70,515,000	$0	17,628,750	$70,515,000	2028
	Total Cost		**$100,955,673**	**$8,492,946**	**17,628,750**	**$109,488,619**	

With this approval, these projects will be programmed in the upcoming 2025-2028 Transportation Improvement Program and amended in the 2045 Regional Transportation Plan accordingly. Project sponsors should contact the Texas Department of Transportation (TxDOT) – Austin District to initiate the local government project development process including generating or amending the Advanced Funding Agreement as appropriate.

Additionally, it should be noted that in accordance with Transportation Policy Board policy, sponsors are responsible for any project costs above and beyond the federal funding award. Sponsors are also required to demonstrate continual progress through the local government project development process and report on progress on a quarterly basis through CAMPO's online reporting system.

I want to thank everyone for their time and effort in this process and look forward to seeing these projects moving forward to implementation.

Please contact me at ryan.collins@campotexas.org or call (737) 217-8306 if you have any questions or concerns.

Sincerely,

Ryan Collins

Short Range Planning Manager

CC: Heather Ashley-Nguyen, P.E., TxDOT – Austin District
Brandon Marshall, P.E., TxDOT – Austin District
Michelle Conkle, TxDOT – Austin District
Angela Erwin, TxDOT – Austin District
Jan Shull, TxDOT – Austin District
Ashby Johnson, CAMPO
Chad McKeown, CAMPO

Attachments: Resolution 2024-2-8a
Project Assessment and Recommendation Report

Resolution 2024-2-8a

Acknowledging the Transportation Policy Board's Authorization and Approval of Surface Transportation Block Grant Funding for Deferred Projects.

WHEREAS, pursuant to federal law, the Governor of the State of Texas designated the Capital Area Metropolitan Planning Organization (CAMPO) as the Metropolitan Planning Organization for the Austin region in 1973; and

WHEREAS, CAMPO's Transportation Policy Board (TPB) is the regional forum for cooperative decision-making regarding transportation issues in Bastrop, Burnet, Caldwell, Hays, Travis and Williamson Counties in Central Texas; and

WHEREAS, on June 8, 2020, the TPB approved the final selection of Surface Transportation Block Grant (STBG) funded projects to be deferred in support of the IH-35 Capital Express project and the prioritization of these deferred projects for refunding when future STBG becomes available; and

WHEREAS, with STBG funding forecast to become available beginning in Fiscal Year (FY) 2026, staff initiated the process to evaluate the status of the remaining deferred projects to assess the potential to program these projects in the upcoming 2025-2028 Transportation Improvement Program (TIP) and definitively conclude the deferral process; and

WHEREAS, the results of the readiness and evaluation process are detailed in the Project Assessment and Recommendation Report; and

WHEREAS, the TPB approved future STBG funding and accompanying Transportation Development Credits (TDC) for the construction phases of three projects: $13,738,122 to the City of Austin for West Rundberg Lane, $16,742,551 to the City of Austin for Lakeline Blvd., and $70,515,000 with 17,628,750 in TDCs to Travis County for Pearce Lane; and

WHEREAS, the approved projects will be continuously monitored and evaluated to ensure compliance with the TPB policy on continual progress; and

WHEREAS, any cost overruns and funding requirements beyond this commitment are the responsibility of the local government; and

NOW, THEREFORE BE IT RESOLVED that the CAMPO Transportation Policy Board hereby votes to approve the refunding of the deferred projects as provided in the Project Assessment and Recommendation Report and reflected in this Resolution; and

Hereby orders the recording of this resolution in the minutes of the Transportation Policy Board; and

BE IT FURTHER RESOLVED that the Board delegates the signing of necessary documents to the Board Chair.

The above resolution being read, an amended motion to approve the refunding of the deferred projects as listed in the Project Assessment and Recommendation Report as reflected was made on February 12, 2024 by Council Member Aliston Alter duly seconded by Council Member Natasha Harper-Madison.

Ayes: Commissioner Cynthia Long (Proxy for Commissioner Debbie Ingalsbe), Council Member Rudy Metayer (Proxy for Mayor Christine DeLisle), Commissioner Clara Beckett (Proxy for Commissioner Ann Howard), Council Member Alison Alter, Council Member Paige Ellis, Mr. Tucker Ferguson, P.E., Council Member Vanessa Fuentes (Proxy for Commissioner Jeffrey Travillion), Council Member Natasha Harper-Madison, Mr. Matt Harriss, Mayor Jane Hughson, Judge James Oakley, Ms. Amy Pattillo (Proxy for Judge Andy Brown), Mayor Jim Penniman-Morin, Mayor Josh Schroeder, Council Member Kristin Stevens (Alternate for Mayor Craig Morgan) and Commissioner Edward Theriot

Nays: None

Abstain: None

Absent and Not Voting: Mayor Travis Mitchell

SIGNED this 12th day of February 2024.

Cynthia Long

Chair, CAMPO Board

Attest:

Executive Director, CAMPO

Surface Transportation Block Grant (STBG)

Project Assessment and Recommendation Report

CAMPO
CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION
CENTRAL TEXAS

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Executive Summary

On June 8, 2020, the Transportation Policy Board (TPB) approved the final selection of Surface Transportation Block Grant (STBG) funded projects to be deferred in support of the IH-35 Capital Express project. Upon approval, the TPB formally endorsed the prioritization of these deferred projects for refunding and directed project sponsors to continue the project development process to ensure the projects would be ready at the earliest funding availability.

Through active management of the deferral list, the majority of the deferred projects have either been refunded or removed from refunding consideration due to affecting factors including major scope changes, chronic development issues, or because they have been implemented with local funding. With future funding forecast to become available beginning in Fiscal Year (FY) 2026, staff initiated the process to evaluate the status of the four remaining deferred projects to assess the potential to program these projects in the upcoming 2025-2028 Transportation Improvement Program (TIP) and conclude the deferral process through a final commitment of funding to these projects as described in the recommendation.

The evaluation process, a collaboration between CAMPO, the project sponsors, and the Texas Department of Transportation (TxDOT) - Austin District, evaluated the status of the project development milestones and included a comparison of the original application, development progress, inflationary impacts, sponsor responsibilities, and other elements that provided a comprehensive review of the project status. A summary of the review and resulting recommendation is provided in the Refunding Scenario Section. Additional information on individual project assessments and the review process is available in Appendix B and C.

In addition to the deferred projects evaluated for readiness and rescheduling, the TPB directed staff to review the original deferral list to identify those that were removed voluntarily and implemented with local funding for a potential future funding set-aside scenario. Of the 12 projects evaluated, four projects met these criteria. After further direction from the TPB in January, staff requested confirmation of implementation and actual costs from project sponsors. A summary of the review and resulting recommendation is provided in the Set-Aside Scenario Section. Additional information on the deferral list review is available in Appendix D.

The approved scenarios for both the deferred project and set-aside scenarios are detailed in the next section.

Approved Scenarios

The table below details the deferred project funding amounts and scenario approved by the Transportation Policy Board (TPB) on February 12, 2024, as referenced in Resolution 2024-2-8a.

Refunding Scenario							
Sponsor	**Project**	**Phase**	**Federal**	**Local Match**	**TDC**	**Total Cost**	**Fiscal Year**
City of Austin	W. Rundberg	C	$13,738,122	$3,790,563	-	$17,528,685	2028
City of Austin	Lakeline Blvd	C	$16,742,551	$4,702,383	-	$21,444,934	2027
Travis County	Pearce Lane	C	$70,515,000	$0	17,628,750	$70,515,000	2028
	Total Cost		**$100,955,673**	**$8,492,946**	**17,628,750**	**$109,488,619**	

The table below details the set-aside funding amounts and scenario approved by the Transportation Policy Board (TPB) on February 12, 2024, as referenced in Resolution 2024-2-8b.

Set Aside Scenario				
Sponsor	**Project**	**Original Award**	**Local Expenditure**	**Set-Aside Award**
City of Austin	Vehicle Detection*	$8,960,000	$3,008,000	-
City of Austin	Traffic Monitoring System*	$1,120,000	$500,000	-
City of Austin	EMS/Transit Signal Priority*	$7,280,000	$4,987,466	-
City of Cedar Park	New Hope Dr.	$12,403,200	$22,619,961	$22,619,961
	Total	**$28,307,200**	**$31,115,427**	**$22,619,961**

*Please note that at the direction of the TPB, these projects will continue to be reviewed and brought back to the TPB for further consideration on April 15, 2024.

Approved Scenarios

The table below details the deferred project funding amounts and scenario approved by the Transportation Policy Board (TPB) on February 12, 2024, as referenced in Resolution 2024-2-8a.

Refunding Scenario							
Sponsor	**Project**	**Phase**	**Federal**	**Local Match**	**TDC**	**Total Cost**	**Fiscal Year**
City of Austin	W. Rundberg	C	$13,738,122	$3,790,563	-	$17,528,685	2028
City of Austin	Lakeline Blvd	C	$16,742,551	$4,702,383	-	$21,444,934	2027
Travis County	Pearce Lane	C	$70,515,000	$0	17,628,750	$70,515,000	2028
	Total Cost		**$100,955,673**	**$8,492,946**	**17,628,750**	**$109,488,619**	

The table below details the set-aside funding amounts and scenario approved by the Transportation Policy Board (TPB) on February 12, 2024, as referenced in Resolution 2024-2-8b.

Set Aside Scenario				
Sponsor	**Project**	**Original Award**	**Local Expenditure**	**Set-Aside Award**
City of Austin	Vehicle Detection*	$8,960,000	$3,008,000	-
City of Austin	Traffic Monitoring System*	$1,120,000	$500,000	-
City of Austin	EMS/Transit Signal Priority*	$7,280,000	$4,987,466	-
City of Cedar Park	New Hope Dr.	$12,403,200	$22,619,961	$22,619,961
	Total	**$28,307,200**	**$31,115,427**	**$22,619,961**

*Please note that at the direction of the TPB, these projects will continue to be reviewed and brought back to the TPB for further consideration on April 15, 2024.

Refunding Scenario

The table below details the final determination of the readiness review and deferral process for consideration by the Transportation Policy Board (TPB). This refunding scenario represents one-time inflation adjustments to the first fiscal year of full funding availability for the deferred projects. This scenario is also predicated on the timely completion of the remaining development milestones as determined by the readiness review.

Upon reprogramming, these projects will be continuously monitored and evaluated to ensure compliance with the TPB policy on continual progress. As with all TPB selected projects, any cost overruns and funding requirements beyond this commitment are the responsibility of the local government, and further, if it is determined reasonable progress is not being made, the projects will be brought back to the TPB for potential action consideration.

Refunding Scenario							
Sponsor	**Project**	**Phase‡**	**Federal**	**State/Local**	**TDC**	**Total Cost**	**Fiscal Year**
City of Austin	W. Rundberg*	C	$13,738,122	$3,790,563	-	$17,528,685	2028
City of Austin	Lakeline Blvd	C	$16,742,551	$4,702,383	-	$21,444,934	2027
Travis County	Pearce Lane†	C	$65,750,000	$4,765,000	16,437,500	$70,515,000	2028
Travis County	Brake Lane N.	-	-	-	-	-	-
	Total Cost		**$96,230,673**	**$13,257,946**	**16,437,500**	**$109,488,619**	

*West Rundberg Lane was not previously recommended. The information required to complete the readiness assessment, due on September 1, 2023, was provided on January 26, 2024, and reviewed by staff and the TxDOT-Austin District.

†The state/local funding amount covers the construction of Pearce Lane east of Wolf Lane and is currently under discussion with TxDOT and Bastrop County. Should the Transportation Policy Board consider funding the portion east of Wolf Lane to cover the entire limits, the total STBG commitment would be $70,515,000 with corresponding TDCs of 17,628,750.

‡ The associated federal and local share amounts and total costs are for the construction phase only and do not include right-of-way acquisition or engineering phase funding amounts or cost.

Set-Aside Scenario

The table below details the final determination of the projects evaluated for the potential set-aside scenario. The set-aside scenario evaluation began by reviewing the initial deferral list of projects previously funded with Surface Transportation Block Grant (STBG) funding. This review identified projects that were removed from STBG refunding consideration and voluntarily implemented utilizing local funding. Four projects were identified as potentially meeting these criteria.

On January 10, 2024, staff reached out to sponsors and requested documentation confirming implementation and actual expenditures by January 24, 2024, to ensure a timely review process. Verification documentation was requested so that implementation and actual costs could be confirmed. This documentation could include bidding documentation, invoices, or any other project related documentation that provided the necessary information to verify actual implementation. Staff received updated implementation information and verification documentation from the City of Cedar Park on January 10, 2024. Staff received updated implementation information without verification documentation from the City of Austin on January 24, 2024.

Following Transportation Policy Board (TPB) approval of the set-aside scenario, staff will utilize the adopted evaluation process and selection criteria to facilitate the distribution of the set-aside funding. This process will include a complete readiness assessment and benefit analysis of candidate projects to ensure informed project selection and compliance with federal performance-based planning and programming requirements. The specific project selection for the set-aside scenario will be brought back to the TPB for approval and programming in the Transportation Improvement Program.

Set Aside Scenario				
Sponsor	**Project**	**Original Award**	**Local Expenditure**	**Confirmed**
City of Austin	Vehicle Detection*	$8,960,000	$3,008,000	No
City of Austin	Traffic Monitoring System*	$1,120,000	$500,000	No
City of Austin	EMS/Transit Signal Priority*	$7,280,000	$4,987,466	No
City of Cedar Park	New Hope Dr.	$12,403,200	$22,619,961	Yes
	Total	**$28,307,200**	**$31,115,427**	

*The local expenditure amounts were provided on the January 24, 2024, deadline, however verification documentation was not provided in time for review and confirmation. The information is provided for Transportation Policy Board consideration, but staff is not making a recommendation on these projects.

Financial Forecast

Staff have developed the financial forecast to determine funding availability for Transportation Policy Board decision-making. Please note that the forecast is an estimate and snapshot in time based on available information from the Federal Management Information System (FMIS), TxDOT's Financial Reports, and other federal financial resources.

Funding Forecast‡				
Fiscal Year	**CRP**	**STBG**	**TASA**	**Total**
2024	$13,941,207	$56,696,207	$9,137,859	$79,775,273
2025	$5,979,980	$48,073,599	$5,574,292	$59,627,871
2026*	$6,099,587	$49,035,132	$5,685,785	$60,820,504
2027	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2028	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2029	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2030	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2031	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2032	$5,865,017	$47,149,405	$5,467,128	$58,481,550
2033	$5,865,017	$47,149,405	$5,467,128	$58,481,550
Total	**$67,075,893**	**$483,850,773**	**$58,667,832**	**$609,594,498**

Scenario	Funding Usage
Committed	$107,687,744
Refunding Scenario	$96,230,673
Set-Aside Scenario†	$31,115,427

*The current federal authorization, the Infrastructure and Investments Jobs Act (IIJA), ends in Fiscal Year 2026. Projections beyond assume the congressional approval of continual resolutions (CR).

†The Set-Aside Scenario shows all local expenditures confirmed and unconfirmed for illustrative purposes in this forecast.

‡All funding amounts in this forecast are for the federal funding share only and does not include the required state/local share.

Financial Impact Analysis

The scheduling of a potential call for projects will be significantly impacted by the decisions of the Transportation Policy Board regarding the refunding and set-aside scenarios. Below is a tentative schedule for future funding opportunities based on the approved scenarios. The project call process scheduling is based on a year-long project evaluation process with TPB approval of the selection of projects taking place prior to the fiscal year of funding availability.

Financial Impact Analysis				
Scenario	**Call Information**	**STBG**	**TASA***	**CRP***
Committed	Schedule	Summer 2024 – Summer 2025	Summer 2024 – Summer 2025	Summer 2024 – Summer 2025
	Funding Available	$190,483,347	$27,657,132	$29,674,618
	Fiscal Years	2026-2029	2026-2029	2026-2029
Refunding Scenario	Schedule	Summer 2026 – Summer 2027	Summer 2025 – Summer 2026	Summer 2025 – Summer 2026
	Funding Available	$188,597,620	$27,549,968	$29,559,655
	Fiscal Years	2028 -2031	2027-2030	2027-2030
Set-Aside Scenario	Schedule	Summer 2027 – Summer 2028	Summer 2025 – Summer 2026	Summer 2025 – Summer 2026
	Funding Available	$188,597,620	$27,549,968	$29,559,655
	Fiscal Years	2029-2032	2027-2030	2027-2030

*TASA and CRP funding become available earlier than STBG, the amounts available for the project call include five years of federal apportionment and that the scenario schedules assumes the commitments of the scenarios listed above.

Appendix A - Timeline

Milestone	Date
Initial Refunding Process Meeting	July 13, 2023
Information Packet (Draft)	July 18, 2023
Refunding Process Check- In	August 10, 2023
Information Packet (Final) – Application Folder	August 11, 2023
Project Materials Due	September 1, 2023
Technical Review (see note below)	September – January
Set-Aside Scenario Project Review	December
Transportation Policy Board	January 8, 2024
Set-Aside Information Request	January 10, 2024
Technical Advisory Committee	January 22, 2024
Set-Aside Information Due	January 24, 2024
Funding Recommendation Report	February 2, 2024
Transportation Policy Board	February 12, 2024
2025-2028 Transportation Improvement Program	May 13, 2024

The technical review included a review of all sponsor-submitted materials by CAMPO, TxDOT, and technical consultants and continued coordination and collaboration throughout.

Appendix B – Individual Project Readiness Assessments

Pearce Lane – Original Application Summary	
CSJ	0807-05-024/0914-04-329
Sponsor	Travis County
Project Name	Pearce Lane
Limits (From)	Travis/Bastrop County Line
Limits (To)	Kellam Road
Description	Widen existing two-lane facility to a four-lane divided arterial with bike lanes and sidewalks
Phase	Construction
Original Let Year	2022
Cost	$22,000,000
Federal Award	$22,000,000
Local Match	-
Local Contribution	-
TDCs	5,500,000
Roadway Ranking	10

Pearce Lane – Readiness Assessment Summary	
Management	Project will be managed by consultants and Travis County Department of Natural Resources (TNR). TNR provided a current LGPP certification.
AFA	Active AFA for Engineering and Environmental. Construction amendment to be processed.
Scope	Limits were amended in the Transportation Improvement Program (TIP) in 2019 to extend the limits to the intersection of Wolf Lane in Bastrop County as required by TxDOT. TxDOT's recent 30% design review determined the limits need to go further east of Wolf Lane to accommodate horizontal curvature. The limits within Bastrop County are on-system. The funding adjustment recommendation from the Transportation Policy Board account to the limits to the Wolf Lane as amended in 2019 and deferred in 2020. Travis County is continuing to coordinate with TxDOT-Austin District and Bastrop County to ensure construction and right-of-way funding is secured for the section east of Wolf Lane.
Schedule	In discussions with TxDOT and Travis County, it was determined that the project should be programmed in 2028 with the potential to move into 2027 if the milestones are completed ahead of schedule. The recommended estimate is adjusted for inflation to 2028.
Cost	The construction estimate is currently $70,515,000 (2028) for the entire limits from Kellam Road to east of Wolf Lane. The estimated cost to Wolf Lane, the limits at the time of the deferral, are $65,750,000. The additional $4,765,000 for construction is under discussion with TxDOT-Austin District, in coordination with Bastrop County.
Financial Commitment	The initial project was supported with Transportation Development Credits in lieu of the local match. The recommendation provides additional TDCs to adjust for the increased federal funding. Travis County, and potentially TxDOT, will provide additional information on qualifying Maintenance of Effort (MOE) transportation projects to ensure compliance with the TDC policy and requirements.
Coordination/ Agreements	TxDOT Plan Review and City of Austin review and permitting. An interlocal agreement with TxDOT, Bastrop County, and Travis County may be initiated as necessary pending the outcome for the portion east of Wolf Lane.
Public Involvement	An Open House and Public Hearing were held on January 10, 2023.

Engineering/Design	60% plans provided for the Travis County portion were provided. 90% anticipated in December 2023. The additional design portion in Bastrop County is at 30% design review at TxDOT. These designs accommodate the design change requests to east of Wolf Lane.
Environmental Compliance	Project is being processed as an Open-ended Categorical Exclusion (CE) with an anticipated completion in February 2024.
Right-of-Way /Utilities	The Travis County portion requires acquisition of 43 parcel prior to construction. Additional Right-of-Way requirements in Bastrop County have been identified and are under review.
Additional Information	Functionally classified as a Major Collector.

Braker Lane North – Original Application Summary	
CSJ	0914-04-316
Sponsor	Travis County, City of Austin
Project Name	Braker Lane North
Limits (From)	Harris Branch Parkway
Limits (To)	Samsung Blvd.
Description	Widen current and extend roadway as a four-lane divided roadway with bicycle and pedestrian facilities
Phase	Right-of-Way, Construction
Original Let Year	2018
Cost	$22,715,790
Federal Award	$11,737,000
Local Match	$2,934,250
Local Contribution	$8,044,540
TDCs	-
Roadway Ranking	15

Braker Lane North – Readiness Assessment Summary	
Management	Project will be managed by consultants and Travis County Department of Natural Resources (TNR). TNR provided a current LGPP certification.
AFA	AFA for Engineering and Environmental (2014). New AFA needed for Right-of-Way and Construction is required.
Scope	Scope remains the same.
Schedule	Detailed schedule was provided illustrating milestones through 2026.
Cost	Construction cost is now $51,186,000 (2026).
Financial Commitment	City of Austin does not have financial commitment currently. City limit changes have also increased the City's financial responsibility for the project.
Coordination/ Agreements	Agreement between City of Austin and Travis County will need to be reworked to address recent changes in project scope and funding commitments.
Public Involvement	Open Houe on November 15, 2016. Public Hearing not scheduled.

Engineering/Design	Design schematic approved by City of Austin. Intersection design underway with 30% anticipated in March 2024. 90% December 2024.
Environmental Compliance	Anticipated completion Spring 2024. Environmental Assessment (EA/FONSI). TxDOT has reviewed draft technical reports except Noise which is pending revised traffic study and approved projections.
Right-of-Way /Utilities	15 parcels (26 acres) need to be acquired.
Additional Information	This project is being removed from consideration at the joint request of City of Austin and Travis County. Impacts from city limit changes and financial responsibilities have impacted the development of the project. The City of Austin will resubmit this project as lead sponsor in a future project call as appropriate.

Lakeline Blvd – Original Application Summary	
CSJ	0914-05-194
Sponsor	City of Austin
Project Name	Lakeline Blvd.
Limits (From)	Parmer Lane
Limits (To)	Lyndhurst Blvd.
Description	Add two additional travel lanes and upgrade bicycle facilities and sidewalks
Phase	Construction
Original Let Year	2018
Cost	$14,425,000
Federal Award	$11,540,000
Local Match	$2,885,000
Local Contribution	-
TDCs	-
Roadway Ranking	11

Lakeline Blvd – Readiness Assessment Summary	
Management	City of Austin project manager provided a current LGPP certification.
AFA	Active AFA for Engineering and Environmental. Construction amendment to be processed.
Scope	Ultimate configuration of the roadway design scope remains the same. Additional drainage may be required due to Watershed Department rules under discussion.
Schedule	Detailed schedule provided for review. Project will be scheduled in Fiscal Year 2027 with potential to move up as milestones progress.
Cost	Updated cost estimate provided. New construction costs are $21,444,934. CAMPO portion would be $16,742,551 with local funding covering $4,702,383. The local amount also includes the indirect costs. The estimate also showed the engineering phase which was previously refunded by CAMPO in 2021 and not part of the recommendation.
Financial Commitment	The Transportation and Public Works Department and Austin City Council committed the 20% match for the design and construction on August 8th, 2019. Resolution remains valid.

Coordination/ Agreements	CapMetro license agreement application for working in the transit rail easement and proposed transit locations.
Public Involvement	Based on the schedule, a Public Meeting will be held prior to Environmental Clearance to display the project and seek feedback.
Engineering/Design	For the Lakeline Boulevard project, the Preliminary Engineering Report was completed in May 2023 the 60% Design Phase is currently underway.
Environmental Compliance	Environmental Clearance is anticipated in Summer 2024
Right-of-Way /Utilities	At this design phase, Right-of-Way acquisition is not required. Utilities are being coordinated during the design phase and any relocations will be completed with the construction of Lakeline Boulevard.
Additional Information	Functionally classified as a Major Collector

West Rundberg Lane - Original Application Summary	
CSJ	0914-04-314
Sponsor	City of Austin
Project Name	West Rundberg Lane
Limits (From)	Metric Blvd.
Limits (To)	Burnet Rd.
Description	Extend current roadway as a four-lane major divided arterial with sidewalks, bike lanes, and new signalized intersection
Phase	Construction
Original Let Year	2018
Cost	$11,000,000
Federal Award	$8,800,000
Local Match	$2,200,000
Local Contribution	-
TDCs	-
Roadway Ranking	8

West Rundberg Lane - Readiness Assessment	
Management	City of Austin project manager provided a current LGPP certification.
AFA	Cancelled AFA. New Construction AFA required.
Scope	The scope includes the original construction design. Additional drainage is required by Atlas-14 to be covered by the local funding portion.
Schedule	Schedule provided on January 26, 2024. Schedule will need to include TxDOT Milestones including AFA and additional review time based on updated schematics.
Cost	Updated cost estimate of $17,528,685 for construction and includes the direct state costs.
Financial Commitment	The Transportation and Public Works (TPW) Department has committed to the funding for the design and remaining right-of-way acquisition for the project. The City of Austin's City Council

	has approved resolution No. 20171214-056 which commits COA for 45% of the project, should this project be selected. TPW has identified a source of funding for the design and acquisition of the right-of-way.
Coordination/ Agreements	Application for working in CapMetro's transit rail easements and transit locations required.
Public Involvement	Public meeting is required for environmental clearance, anticipated in February 2025.
Engineering/Design	West Rundberg Lane is currently at 100% Design Phase (Dated in 2013) that will need to be significantly updated to TxDOT and City of Austin standards.
Environmental Compliance	Two technical reports completed. Seven reports are needed in addition to the NEPA process.
Right-of-Way /Utilities	The City of Austin acquired the largest parcel (approx. $5 million) after the CAMPO deferment, to preserve the opportunity for this roadway extension. There are five parcels remaining that are required to be able to construct the project. These parcels are owned by the same property Owner: Met Phase I95 Ltd. From the TCAD Property Information, the parcels land value is approximately $663,000. In the Cost Estimate and Budget, the value has been escalated to twice the 2023 value for a total cost of approximately $1.3 million. Utility Relocation will be identified and cleared if possible before or during the construction of the project.
Additional Information	West Rundberg Lane is functionally classified as a minor arterial to Metric Blvd. New location project will need to be classified.

Appendix C – Deferred Project Process Information Packet

(From August 11, 2023)

Surface Transportation Block Grant (STBG)

Scheduling and Refunding of Remaining Deferred STBG Projects

August 11, 2023

CAMPO
CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION
CENTRAL TEXAS

Background

On April 30th, 2020, the Texas Transportation Commission (TTC) updated the Unified Transportation Plan (UTP) to facilitate the development and implementation of the central portion of the IH-35 Capital Express Project, which has an estimated $4.9 billion construction cost. The TTC action reduced the unfunded portion of the project from $4.34 billion to $934 million. To address the $934 million funding gap, the Texas Department of Transportation (TxDOT) requested the reprioritization of more than $633 million in currently funded projects in the Capital Area Metropolitan Planning Organization's (CAMPO) six-county region and the TxDOT-Austin District.

To accommodate the $633 million reprioritization, CAMPO staff worked closely with the TxDOT-Austin District to develop a process to identify currently funded projects to be deferred until additional funding becomes available from state and federal sources. CAMPO was responsible for developing the process and approval of projects with Category 7 – Surface Transportation Block Grant (STBG) funding. The TxDOT-Austin District was responsible for the process and approval of projects with Category 2 - Metropolitan and Urban Area Corridor Projects, Category 4 - Statewide Connectivity Corridor Projects, and Category 12 - Strategic Priority funding.

On June 8, 2020, the Transportation Policy Board approved the final selection of STBG projects to be deferred in support of the IH-35 Capital Express project. Upon approval, the TPB also formally endorsed the prioritization of these deferred projects for refunding. To facilitate this directive, a process was developed and approved to evaluate and select projects from the deferral list to be refunded as additional funding becomes available.

Overview

With only four projects previously funded with Surface Transportation Block Grant (STBG) funding remaining deferred, the Capital Area Metropolitan Planning Organization (CAMPO) is currently requesting updated project readiness information for these projects to definitively reschedule these projects and program these projects for future STBG funding in the upcoming 2025-2028 Transportation Improvement Program.

This evaluation process will be a collaborative effort between CAMPO, the project sponsors, and the TxDOT-Austin District and will evaluate the status of the project through the Texas Department of Transportation's (TxDOT) local government project development process and will include a comparison of the original application, development progress, sponsor responsibilities, and other elements that will provide a comprehensive understanding of the project.

Additional considerations of this process include:

- This process will evaluate the potential for funding adjustments to the original funding award amounts with consideration of the originally approved scope, current project development status, updated estimate amounts, schedule, and funding availability.

- Sponsors are assumed to have continued the appropriate level of project development during the deferral and have taken efforts to complete earlier phases in preparation for construction refunding at the earliest availability.

- Projects that have not demonstrated reasonable progress, or otherwise cannot be confidently rescheduled for construction funding through this process, may need to be considered for submission in a future project call.

- The final determination of this process and funding action by the Transportation Policy Board will impact the availability of funding for projects in the next funding opportunity schedule to take place in 2024.

Schedule

Milestone	**Date**
Initial Refunding Process Meeting	July 13, 2023
Information Packet (Draft)	July 18, 2023
Refunding Process Check- In	August 10, 2023
Information Packet (Final) – Application Folder	August 11, 2023
Project Materials Due	September 1, 2023
Technical Review	September - January
Individual Project Team Meetings	
Recommendation Development	
Technical Advisory Committee – Information	January 22, 2024
Transportation Policy Board – Information	February 12, 2024
Technical Advisory Committee – Recommendation	February 26, 2024
Transportation Policy Board - Action	March 11, 2024
2025-2028 Transportation Improvement Program	May 13, 2024

Please note that the schedule for Technical Advisory Committee and Transportation Policy Board information and action items is subject to change.

Readiness Assessment

Readiness will assess the deferred projects based on the project development process and the resulting schedule for utilizing the federal funding as it is critical to ensure that projects have completed the necessary steps for the federal funding to be obligated in a timely manner as programmed. The end goal of the readiness assessment is to ensure, to the highest degree practicable, that the deferred projects can be reprogrammed and scheduled accurately and that appropriate refunding scenarios can be developed for Transportation Policy Board consideration.

A summary of the major areas to be revaluated are provided below. For detailed information please refer to the Local Government Project Management Guide and Project Delivery Checklist which provides extensive information on the project development milestones being evaluated through this process.

Project Management Information
Please provide information on the project manager and responsible person in charge (RPIC). The RPIC must have a current Local Government Project Procedures (LGPP) certification. Sponsors should also provide the assigned TxDOT project manager information as applicable. Please provide basic contact information, position title, and project role.

Advanced Funding Agreement
Please provide the most recent Advanced Funding Agreement (AFA) as applicable. If the project does not have an executed AFA, please provide a draft version if available, and any other additional information regarding the execution of the AFA from the original application. Please refer to Chapter 2 of the Local Government Project Management Guide for more information on this process.

Project Scope
Please verify the scope as detailed in the original application or provide an updated project scope and accompanying information for any significant changes to the scope. For significant changes, please provide justification and detail any resulting impacts these changes have on the development process including schedule and costs changes.

Project Schedule
Sponsors must provide detailed information on the updated project schedule including the current phasing schedule and anticipated fiscal year of project funding utilization for the phases approved for federal funding.

Cost Estimate and Budget
Sponsors must provide an updated professionally developed project cost estimate and budget. This updated estimate must reflect the current estimated cost of implementation and include updated information such as engineering refinements, inflation adjustments, updated labor, and material costs etc. For projects with significant estimate changes to the previously awarded estimate please explain these changes and any potentially impacts as a result.

Financial Commitment
Please provide current information on the local government financial commitment to the project and indicate if the original commitment remains valid. Please detail any other changes to the project sponsors financial commitment and ability to not only provide the local match for the original award but meet the additional funding requirements detailed in the updated cost estimate.

Coordination and Agreements
Please provide any updates and current information regarding coordination and agreements related to the project as detailed in the original application. Please indicate if there has been any additional coordination, newly executed agreements, changes to previously executed interlocal agreements, or if the previous agreements remain valid for this effort and provide updated supporting documentation as appropriate.

Public Involvement
Please provide information on any public involvement activities that have been conducted for the project that were not detailed in the original assessment. This process should ensure that the public is aware of the project, has had sufficient opportunity for input on the current design, and that comments received have been resolved appropriately. This public involvement should include opportunities required by the environmental process including public hearings and MAPOs, and any other opportunities deemed appropriate.

Engineering and Design
Please provide the most recent and complete engineering and design schematics for the project and any other associated documentation regarding project design. If not detailed in the overall schedule, please provide a detailed calendar for the remaining engineering tasks required. This includes the most recent schematics (30%, 60%, 90%, or PS&E) including typical sections, geometric schematic, utility and right-of-way determinations, and environmental commitments (EPICS) determined by the environmental process. Please refer to Chapter 4 of the Local Government Project Management Guide for more information on the Preliminary Engineering and Design Process and Chapter 7 for the Plans, Specification, Estimates (PS&E) Development

Environmental Compliance
Please provide updated information regarding environmental compliance activities and NEPA process that the project has undergone. This includes the environmental classification, executed environmental approvals, and detailed calendar of remaining environmental tasks required for clearance. Please refer to Chapter 5 of the Local Government Project Management Guide and TxDOT Environmental Toolkit for more information on this process.

Right-of-Way and Utility Relocation
Please provide current information regarding right-of-way acquisitions and utility relocation activities that need to be completed prior to construction including the status of acquisition and utility relocation and anticipated schedule for completion. Please refer to Chapter 6 of the Local Government Project Management Guide for more information on this process.

Additional Information

Please provide any additional information and appropriate documentation relevant to the readiness assessment.

Submittal

Project sponsors will be provided access to their specific project files through the ShareFile service to submit materials for the readiness assessment by the due date. The folder contains an excel summary form with which to provide a high-level summary of the development process and corresponding subfolders for the required supporting documentation. For access needs, concerns, or questions please contact ryan.collins@campotexas.org.

Deferred Project List

Deferred Project List Summary												
CSJ	Sponsor	County	Project Name	Limits (From)	Limits (To)	Description	Phase	Cost	Federal Award	Local Match	Local Contribution	TDC
0914-04-314	City of Austin	Travis	West Rundberg Lane	Metric Blvd.	Burnet Road	Extend current roadway as a four-lane major divided arterial with sidewalks, bike lanes, and new signalized intersection	Construction	$11,000,000	$8,800,000	$2,200,000		
0914-05-194	City of Austin	Williamson	Lakeline Blvd	Parmer Lane	Lyndhurst Blvd	Add two additional travel lanes and upgrade bicycle facilities and sidewalks	Construction	$14,425,000	$11,540,000	$2,885,000		
0914-04-326	Travis County	Travis	Pearce Lane	Travis/Bastrop County Line	Kellam Road	Widen existing two-lane facility to a four-lane divided arterial with bike lanes and sidewalks	Construction	$22,000,000	$22,000,000			5,500,000
0914-04-316	Travis County	Travis	Braker Lane North	Harris Branch Parkway	Samsung Blvd.	Widen current and extend roadway as a four-lane divided roadway with bicycle and pedestrian facilities	Right-of-Way, Construction	$22,715,790	$11,737,000	$2,934,250	$8,044,540	

Resources

Local Government Projects Toolkit

The Local Government Projects Toolkit provides organized access to rules, regulations and procedures for projects managed by local governments.

Local Government Project Procedures Manual

TxDOT's Local Government Project Procedures Manual that outlines the project development process for locally sponsored projects.

Local Government Project Development and Delivery Checklist

Local Government Checklist that provides items required throughout the development process that will help determine the project development status.

Appendix D – Original Deferral List and Set-Aside Review

CSJ	Sponsor	County	Project Name	Limits (From)	Limits (To)	Description	Phase	Cost	Federal Award	Local Match	TDCs	Initial Review	Initial Review Results	Secondary Review	Expenditure
N/A	CAMPO	Regional	Regional Transportation Demand Management (TDM) Study	VA	VA	Development of regional TDM implementation strategies	Study	$375,000	$300,000	$75,000	0	Removed from refunding consideration. Sponsor moved forward with PL funding. Does not need to be considered for set-aside per sponsor.	No		
0914-33-083	CAMPO	Hays	US 290/RM 12 & Mercer District	NA	NA	Land use, corridor and node analysis	Study	$450,000	$360,000	$90,000	0	Removed from refunding consideration. Project was cancelled because of the City of Dripping Springs Master Transportation Study which included the scope of this project.	No		
0914-04-323	City of Austin	Travis	Vehicle Detection	VA	VA	Procure and install vehicle detection at 400 signalized intersections	Construction	$11,200,000	$8,960,000	$2,240,000	0	Removed from refunding consideration. Sponsor utilized bond funding for implementation. (Need to confirm implementation and costs)	Yes	Summary information received on January 24, 2024. Verification documentation was not provided so expenditures are unconfirmed at this time.	$3,008,000
0914-04-324	City of Austin	Travis	Traffic Monitoring System	VA	VA	Expand the Traffic Monitoring System including 275 CCTV cameras and video management system	Construction	$1,400,000	$1,120,000	$280,000	0	Removed from refunding consideration. Sponsor utilized bond funding for implementation. (Need to confirm implementation and costs)	Yes	Summary information received on January 24, 2024. Verification documentation was not provided so expenditures are unconfirmed at this time.	$500,000
0914-04-243	City of Austin	Travis	Northern Walnut Creek Trail	Northern Walnut Creek Trail	West of Lamar Blvd. to IH- 35	Construct bike/ped trail.	Construction	$1,881,188	$1,504,950	$376,238	0	Removed from refunding consideration. Project was unable to move forward as of the 2020 deferral as originally scoped and awarded in 2005. This project was scheduled to be brought to the TPB for defunding consideration prior to the deferral for violation of the policy on continual progress.	No		
0914-04-325	City of Austin	Travis	Emergency/Transit Vehicle Signal Priority	VA	VA	Enhance the Advanced Transportation Management System (ATMS)	Construction	$7,280,000	$5,824,000	$1,456,000	0	Removed from refunding consideration. Sponsor utilized bond funding for implementation. (Need to confirm implementation and costs)	Yes	Summary information received on January 24, 2024. Verification documentation was not provided so expenditures are unconfirmed at this time.	$4,987,466
0914-05-197	City of Cedar Park	Williamson	New Hope Dr.	CR 175/Sam Bass Rd.	Ronald Reagan Blvd.	Widen and extend as a new four-lane divided roadway with bicycle and pedestrian facilities	Construction	$12,403,200	$12,403,200	$0	3,100,800	Removed from refunding consideration at sponsor request. Sponsor utlized bond funding for implementation. (Need to confirm implementation and costs)	Yes	Summary information received on January 10, 2024. Verification documentation was received including the awarded contract, bidding documentation.	$22,619,961
0914-05-187	City of Georgetown	Williamson	North and South Austin Avenue Bridges	Morrow Street	2nd Street	Reconstruct the North and South Austin Avenue Bridges	Construction	$1,623,967	$1,299,174	$324,793	0	Removed from refunding consideration. Project was unable to move forward as originally scoped and awarded in 2014.	No		
0151-09-148	CTRMA/TxDOT	Travis	Colorado River Scenic Byway (US 183)	At Colorado River		Construct a bicycle and pedestrian path	Construction	$4,550,000	$3,640,000	$910,000	0	Removed from refunding consideration. Project was unable to move forward as original scoped and awarded in 2014.	No		
0914-33-900	Hays County	Hays	Lime Kiln Road	Hilliard Road	Post Road	Realignment and intersection improvements	Construction	$5,222,500	$4,178,000	$1,044,500	0	Removed from refunding consideration. Project was cancelled due to being in-eligible for federal funding after FHWA functional classification request denial.	No		
1754-01-024	TxDOT	Travis	RM 1826	Hays County Line	US 290	Reconstruct existing 2-lane roadway to a 4-lane divided roadway with bike and pedestrian path	Preliminary Engineering	$5,400,000	$4,320,000	$1,080,000	0	Removed from refunding consideration and does not need to be considered for set-aside scenario.	No		

Appendix E – Previous Deferral Information

Transportation Policy Board Meeting (June 8, 2020)
This meeting includes the Special Project Funding Report that details the original deferral action taken by the Transportation Policy Board.

Transportation Policy Board Meeting (January 11, 2021)
This meeting includes project refunding utilizing available Transportation Alternatives Set-Aside (TASA) funding and discussion on the prioritization process.

Transportation Policy Board Meeting (February 8, 2021)
This meeting includes the formal approval of the refunding prioritization process.

Transportation Policy Board Meeting (November 8, 2021)
This meeting includes the formal approval of refunding projects with available COVID-relief funding and deferral list management.

Resolution 2024-4-8

Acknowledging the Transportation Policy Board's Authorization and Approval of Surface Transportation Block Grant Funding for the Set-Aside Scenario.

WHEREAS, pursuant to federal law, the Governor of the State of Texas designated the Capital Area Metropolitan Planning Organization (CAMPO) as the Metropolitan Planning Organization for the Austin region in 1973; and

WHEREAS, CAMPO's Transportation Policy Board (TPB) is the regional forum for cooperative decision-making regarding transportation issues in Bastrop, Burnet, Caldwell, Hays, Travis and Williamson Counties in Central Texas; and

WHEREAS, on June 8, 2020, the TPB approved the final selection of Surface Transportation Block Grant (STBG) funded projects to be deferred in support of the IH-35 Capital Express project and the prioritization of these deferred projects for refunding when future STBG becomes available; and

WHEREAS, TPB directed staff to review the original deferral list to identify those that were removed voluntarily from refunding consideration and implemented with local funding for a potential future funding set-aside scenario; and

WHEREAS, of the 12 projects evaluated, four projects were identified preliminarily as having moved forward with local funding; and

WHEREAS, staff requested confirmation of implementation and actual costs from project sponsors including supporting documentation for verification; and

WHEREAS, the results of the set-aside scenario evaluation process are detailed in the Project Assessment and Recommendation Report approved on February 12, 2024; and

WHEREAS, staff was directed to continue the Set-Aside Scenario review of the three City of Austin set-aside scenario projects; and

WHEREAS, the results of the continued set-aside scenario evaluation process are detailed in the Addendum of the Project Assessment and Recommendation Report recommending $13,015,378 of future STBG funding for the City of Austin to be reapplied to the three projects in Fiscal Year 2028 to ensure completion as originally scoped; and

WHEREAS, these projects will be brought back to the TPB for programming in the Transportation Improvement Program; and

NOW, THEREFORE BE IT RESOLVED that the CAMPO Transportation Policy Board hereby votes to approve the set-aside scenario funding as provided in the Addendum to the Project Assessment and Recommendation Report and reflected in this Resolution; and

Hereby orders the recording of this resolution in the minutes of the Transportation Policy Board; and

BE IT FURTHER RESOLVED that the Board delegates the signing of necessary documents to the Board Chair.

The above resolution being read, an amended motion to approve the set-aside scenario as listed in the Addendum to the Project Assessment and Recommendation Report as reflected was made on April 15, 2024 by _____ duly seconded by _____.

Ayes:

Nays:

Abstain:

Absent and Not Voting:

SIGNED this 15th day of April 2024.

_____

Chair, CAMPO Board

Attest:

_____

Executive Director, CAMPO

Date:	April 15, 2024
Continued From:	N/A
Action Requested:	Information

To:	Transportation Policy Board
From:	Mr. Walker Williamson, Texas Commission on Environmental Quality
Agenda Item:	9
Subject:	Presentation and Discussion on Air Quality

RECOMMENDATION

None. This item is for information only.

PURPOSE AND EXECUTIVE SUMMARY

On February 7, 2024, the Environmental Protection Agency revised the standard for the acceptable concentration of particulate matter less than or equal to 2.5 micrometers ($PM_{2.5}$). For reference, a human hair is 70 micrometers in diameter. The previous standard deemed the appropriate concentration of $PM_{2.5}$ in the air was 12 micrograms per cubic meter of air (12 $\mu g/m^3$). The new standard set by the EPA in February is 9 $\mu g/m^3$.

Currently, the CAMPO region's $PM_{2.5}$ concentration is 9.3 $\mu g/m^3$ which means the region exceeds the revised standard. This exceedance puts the region at risk of being designated as not in attainment of the National Ambient Air Quality Standards (NAAQS) that were established by the Clean Air Act of 1990.

A designation of non-attainment requires the MPO to undertake additional regulatory requirements for regionally significant projects which can reduce flexibility and add costs for projects.

The Texas Commission on Environmental Quality is the primary liaison with the EPA and will provide a presentation on the revised standard and its implications for the region.

FINANCIAL IMPACT

None.

BACKGROUND AND DISCUSSION

Earlier this year, the EPA increased its standard for the acceptable level of particulate matter in the air. Currently, the CAMPO region exceeds that standard which puts the region at risk of being designated as "non-attainment". This designation can increase the amount of time and cost for projects due to the regulatory actions that need to be taken in non-attainment areas. The Texas Commission on Environmental Quality will provide a presentation discussing this new standard and its implications for the region.

SUPPORTING DOCUMENTS

None.

Date:	April 15, 2024
Continued From:	N/A
Action Requested:	Information

To:	Transportation Policy Board
From:	Mr. William Lisska, Regional Planning Manager
Agenda Item:	10
Subject:	Update on 2050 Regional Transportation Plan (RTP)

RECOMMENDATION

None. This item is for information purposes only.

PURPOSE AND EXECUTIVE SUMMARY

Every five years, CAMPO is required to develop a long-range planning document that forecasts traffic and demographics at least 20 years into the future. The current 2045 Regional Transportation Plan (RTP) was adopted in May 2020, and CAMPO is now working on the development of the 2050 RTP, which must be adopted no later than May 2025 if the region is to remain in compliance with federal rules. This information item provides a summary of key dates and activities in the RTP development process.

FINANCIAL IMPACT

None.

BACKGROUND AND DISCUSSION

CAMPO is responsible for the development and maintenance of a long-range regional transportation plan (RTP) for the six-county region. The purpose of the long-range plan is to coordinate regional transportation planning activities, prioritize a comprehensive list of projects, activities, and programs, and develop a fiscal constraint analysis that estimates the region's capacity to fund projects in the long-range plan. The RTP, with a horizon of at least 20 years in the future, must be reviewed and updated every five years to ensure the plan's validity and consistency with current and forecasted transportation and demographic trends. CAMPO is currently operating under the 2045 Regional Transportation Plan (RTP), which was adopted by the Transportation Policy Board in May 2020. CAMPO is now working on the development of the 2050 RTP, which must be adopted no later than May 2025 if the region is to remain in compliance with federal rules.

Upcoming activities in the 2050 RTP process include reviewing requirements new to the MPO long-range planning process under the Infrastructure Investment and Jobs Act; refreshing the RTP call for projects guidance materials; scheduling meetings with CAMPO member agencies to review sponsored projects in the 2045 RTP and determine which project should carry through to the 2050 RTP and which projects require new applications; and reviewing the methodology to be used for the fiscal constraint analysis. Please note **there is no funding associated with the RTP call for projects**.

Below is a detailed schedule of important dates in the 2050 RTP development process:

- **February 2024** – TAC information – Plan process and schedule
- **March to May 2024** – Meet with project sponsors to discuss 2045 RTP project list and potential changes/additions for 2050 RTP
- **April 2024** – TPB information – Plan process and schedule
- **May 2024** – TAC information – RTP call for projects review and discussion
- **May 2024** – Project sponsor workshop for RTP call for projects
- **June to August** – Application intake for RTP call for projects
- **June 2024** – TAC information – Revenue forecasting and fiscal constraint methodology review and discussion
- **August 2024** – TAC information – Summary of projects received
- **September 2024** – TPB Information – Summary of projects received and revenue forecasting/fiscal constraint methodology
- **September to November 2024** – First round of public outreach meetings
- **September to December 2024** – Compile draft 2050 RTP document
- **January 2025** – TAC Information – Draft plan document and first round public outreach summary
- **February 2025** – TPB Information – Draft plan document and first round public outreach summary
- **February to April 2025** – Second round of public outreach meetings
- **April 2025** – TPB Information – Final plan document and second round public outreach summary
- **April 2025** – TAC Recommendation – Final plan document
- **May 2025** – TPB Action – Final plan document (2050 RTP adoption)

SUPPORTING DOCUMENTS

None.

Date:	April 15, 2024
Continued From:	N/A
Action Requested:	Information

To:	Transportation Policy Board
From:	Mr. Nirav Ved, Data and Operations Manager
Agenda Item:	11
Subject:	Presentation and Discussion on Regional Freight Plan

RECOMMENDATION

None. This item is for information only.

PURPOSE AND EXECUTIVE SUMMARY

CAMPO last adopted a Regional Freight Plan in March 2008. Since that time, the region has experienced numerous changes in population, demographics, travel patterns, shopping habits, and freight logistics. This presentation will provide an update on the analyses completed since December 2022 and will detail the existing conditions of freight logistics and infrastructure in the region as well as some developing trends regarding e-commerce.

FINANCIAL IMPACT

None.

BACKGROUND AND DISCUSSION

CAMPO last adopted a Regional Freight Plan in March 2008. In December 2022, CAMPO staff and its consultant team, led by Cambridge Systematics, began work on developing a new Regional Freight Plan. This presentation will detail the first and second phases of that effort which will provide an examination of the existing freight conditions for the region and the potential new developments in the freight industry.

SUPPORTING DOCUMENTS

Attachment A – *Existing Conditions Report and Appendices*
Attachment B – *Trends Report and Appendices*

CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Freight Plan

Existing Conditions Report

Final 2: October 13, 2023

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Acronyms

AADTT – Average Annual Daily Truck Traffic

AAMPO - Alamo Area Metropolitan Planning Organization

ABIA – Austin-Bergstrom International Airport

ASPM – Aviation System Performance Metrics

ATRI – American Transportation Research Institute

CAMPO – Capital Area Metropolitan Planning Organization

CapMetro – Capital Metropolitan Transportation Authority

DOA – City of Austin Department of Aviation

CRFC - Critical Rural Freight Corridors

CRIS – Crash Records Information System

CUFC – Critical Urban Freight Corridors

EIA – Energy Information Administration

ETJ – Extraterritorial Jurisdiction

FAA – Federal Aviation Administration

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

FM – Farm-to-Market

HGL – Hydrocarbon Gas Liquids

IIJA – Infrastructure Investment and Jobs Act

IRI – International Roughness Index

KTMPO - Killeen-Temple Metropolitan Planning Organization

LMI – Labor Market Information

LP - Loop

MPO – Metropolitan Planning Organization

NAICS – North American Industry Classification System

NHFN – National Highway Freight Network

NHFP - National Highway Freight Program

NMFN – National Multimodal Freight Network

NPMRDS – National Performance Management Research Data Set

NRI – National Risk Index

OEM – Original Equipment Manufacturers

OS/OW – Oversize/Overweight

PHFS – Primary Highway Freight System

POLA/POLB – Port of Los Angeles and the Port of Long Beach

RM – Ranch-to-Market

RTP – Regional Transportation Plan

SH – State Highway

SL – State Loop

SS – State Spur

THFN – Texas Highway Freight Network

TMFN – Texas Multimodal Freight Network

TOFC/COFC – Rail Trailer on Flatcar or Container on Flatcar

TTI – Texas A&M Transportation Institute

TTTR – Truck Travel Time Reliability

TxDMV – Texas Department of Motor Vehicles

TxDOT – Texas Department of Transportation

TxFAC – Texas Freight Advisory Committee

UP – Union Pacific

VMT – Vehicle Miles Travelled

Introduction/Overview

The Capital Area region, a six-county metropolitan area in Central Texas, has experienced rapid growth and economic development in recent years. A key aspect of this growth is an increase in freight and the movement of goods by truck, rail, pipeline, and air. Efficient freight movement is crucial to the competitiveness of the region's businesses and industries, and the overall way of life for its residents. Recognizing this importance, the Capital Area Metropolitan Planning Organization (CAMPO) is developing a Freight Plan that will highlight the importance of freight to the region and inform the Regional Transportation Plan (RTP) by identifying policies, strategies, and investments to enhance the performance and safety of the multimodal freight network.

Project Background and Purpose

CAMPO's six-county region is comprised of Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson counties. The total land area for the region is 5,215 square miles or roughly the size of Connecticut. The region is traversed by IH 35, a national corridor for trade, commerce, and passenger travel that connects major cities in Texas, spanning 21 counties from the border with Mexico to Oklahoma. The CAMPO region itself is diverse geographically, with the population concentrated in the urban metropolitan core in Travis County and a variety of established and emerging suburbs, historic towns, and rural areas in the surrounding counties. These areas generate and attract freight, each providing a unique set of industries and challenges.

Since the last regional freight plan in 2008, several forces have contributed to the increasing demand for freight transportation in the CAMPO region. First, the growth of e-commerce carried over from the COVID-19 pandemic has significantly increased the demand for last-mile delivery services, which has increased the demand for truck transportation and warehousing. Second, the region has experienced tremendous population growth, resulting in an overall higher demand for goods and services. Finally, growing key freight-intensive industries in the region, such as automobile and semiconductor production, have increased the need to transport raw materials, finished goods, and equipment. These factors underscore the importance of efficient and reliable freight transportation in the CAMPO region.

The purpose of this existing conditions report is to provide insights into freight transportation in the CAMPO region and help in developing regional planning and policy decisions. To that end, this report has four objectives:

- Provide an overview of the existing multimodal freight network and its assets;
- Assess the conditions and performance of the freight network, including key topics such as safety, mobility, and reliability;
- Analyze the role of land uses in the region, specifically those that generate freight activity; and
- Examine the role of key supply chains in the region, identifying critical industries and their transportation needs.

To achieve these goals, this report comprehensively analyzes the freight transportation network in the CAMPO region. Drawing from publicly available data, data acquired by CAMPO, and datasets from Texas Delivers 2050,[1] the latest statewide freight mobility plan, this Existing Conditions report details the characteristics and needs of each mode and how they influence freight mobility in the CAMPO region. Conversely, this report will also describe how the CAMPO region's freight-intensive industries influence freight movements, including an analysis of trip flows and freight generators within the region.

The following bullets summarize key findings in the existing conditions analysis regarding highway infrastructure, non-highway infrastructure, and freight-intensive industries/supply chains.

Highway Infrastructure

- IH 35 is the primary corridor for freight movement, as well as the most highly utilized and most congested. It serves critical industries in the region, connecting supply chains with manufacturers, suppliers, and markets in the urban areas of the Texas Triangle and beyond. Trucks utilize the corridor for long-haul trips and also for shorter, interregional trips. Automotive manufacturing, electronics, warehousing, and mining/quarrying are key freight-generating industries that cluster in proximity to IH 35.
- The congestion on IH 35 leads to trucks using SH 130 as a bypass around the Austin-Round Rock metro area in Travis and Williamson counties. Trips bound to and from IH 10 in Caldwell County utilize SH 130 to bypass the congestion on IH 35 between San Antonio and Austin.
- Other key north-south corridors include US 281 in Burnet County and US 183, which traverses most of the region from Caldwell County through Travis, Williamson, and Burnet counties. To the east, SH 95 connects Bastrop and Williamson counties.
- Principal arterials consisting of US highways, state highways, and RM/FM roads provide key east-west connectivity with the primary freight corridors on IH 35, US 183, and SH 130. On these types of roadways, delay and travel time unreliability are the highest in Travis County. Additionally, US 290 and SH 71 provides east-west connectivity with Houston and other regions along the Texas Gulf Coast; these longer distance trips benefit from having access to maritime gateways for domestic and international trade.
- The pavement condition for the roadway network in the region is rated mostly fair or better. Only 4% of the roadway mileage is rated poor.
- Most of the overpasses that carry the Texas Highway Freight Network (THFN) are in good or better condition (87% of the total). Most of the underpasses on the THFN are 16.5 feet or taller (59%), with nearly 20% of the underpasses meeting the updated vertical clearance standard of 18.5 feet to accommodate oversize vehicles.
- Nearly all of the overpasses on IH 35 are also in good or better condition (98% of the total). Most of the underpasses on IH 35 are 16.5 feet or taller (63%), with 9% of the underpasses meeting the updated vertical clearance standard of 18.5 feet.

[1] https://www.txdot.gov/projects/planning/freight-planning/texas-delivers-2050.html

Non-Highway Infrastructure

- Austin-Bergstrom International Airport (ABIA) is the only commercial airport in the region and is an important gateway for high-value freight arriving from the rest of the U.S. and the world. Since 2020, congestion at ABIA has increased as air traffic recovers from the COVID-19 pandemic.
- Pipelines are an element of the multimodal freight network and are used for the bulk transport of liquefied products and natural gas. Pipelines supply product terminals with motor gasoline and other fuels that are distributed to homes, businesses, and industries by truck.
- The freight rail network consists of Class I and Class III railroads. The Class I rail corridor through the CAMPO region complements IH 35 and SH 130 in facilitating north-south freight movements. The region lacks a major rail hub, so much of the long-haul movement by rail passes through. The Class III railroads provide east-west connections to the Class I network and serve mining and agriculture supply chains.

Freight-Intensive Industries and Supply Chains

- Freight-intensive industries are important to the regional economy. Employment in these sectors represents nearly 3 out of every 10 jobs. Most of the activity is concentrated in Williamson and Travis counties.
- Supply chains for key Texas industries in the region are clustered along the IH 35 corridor. Establishments for automotive, semiconductors, warehousing, and construction materials are concentrated in Williamson and Travis counties. Other freight-intensive sectors such as agriculture and energy are located in the surrounding counties and are served by east-west corridors such as SH 29, US 79, SH 71, and US 290.
- Manufacturing supply chains in the CAMPO region are connected to markets and suppliers in the major urban areas of the Texas Triangle. The THFN and rail provide connectivity to those areas, as well as the trade gateways along the border with Mexico and on the Texas Gulf Coast.

Report Organization

This document is one of the deliverables as defined under Task 3 – Existing Conditions Report from the scope of work for Cambridge Systematics, Inc.'s project number 220134. The remainder of this document is organized into the following sections:

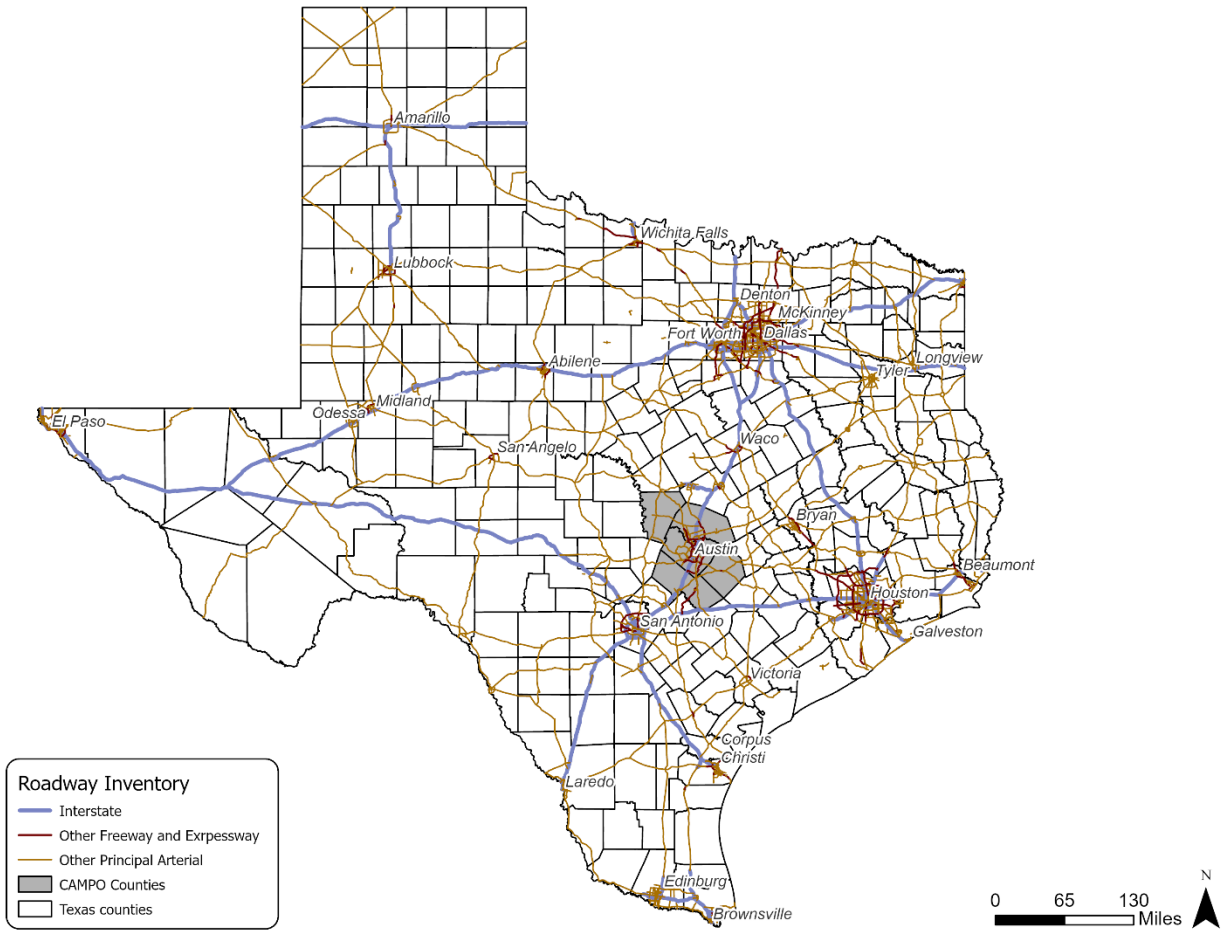
- **Highway, Rail, Airport, and Pipeline Asset**s: These sections together identify the freight transportation assets in the CAMPO region and provide an overview of the current condition and performance of each mode.
- **Equity**: This section identifies equity populations in the CAMPO region and how much of the highway freight network comes in proximity to minority populations and populations living in poverty.
- **Resiliency**: This section evaluates how much of the highway freight network intersects areas of the region that have a high risk exposure to natural disasters according to federal definitions.

- **Freight Trip Origins and Destination**s: This section identifies the origins and destinations for truck trips that originate or end in the CAMPO region.
- **Freight Generators**: This section identifies the location of existing industrial land uses that supports freight-intensive activity. The analysis looks at where the establishments for key supply chains are concentrated in the CAMPO region and the freight transportation activity that those industries generate.
- **Conclusion/Next Steps**: This section summarizes how the existing conditions analysis will inform next steps in the development of the regional freight plan.

Highway Assets

Highways are the most extensive component of CAMPO's freight network infrastructure. Highways directly connect population centers, freight-generating businesses, and the broader economic system both within the region and beyond. Figure 1 shows the CAMPO region's counties in relation to the statewide roadway network, which connects Central Texas to suppliers and consumers in markets around the state and with gateways to domestic and international trade.

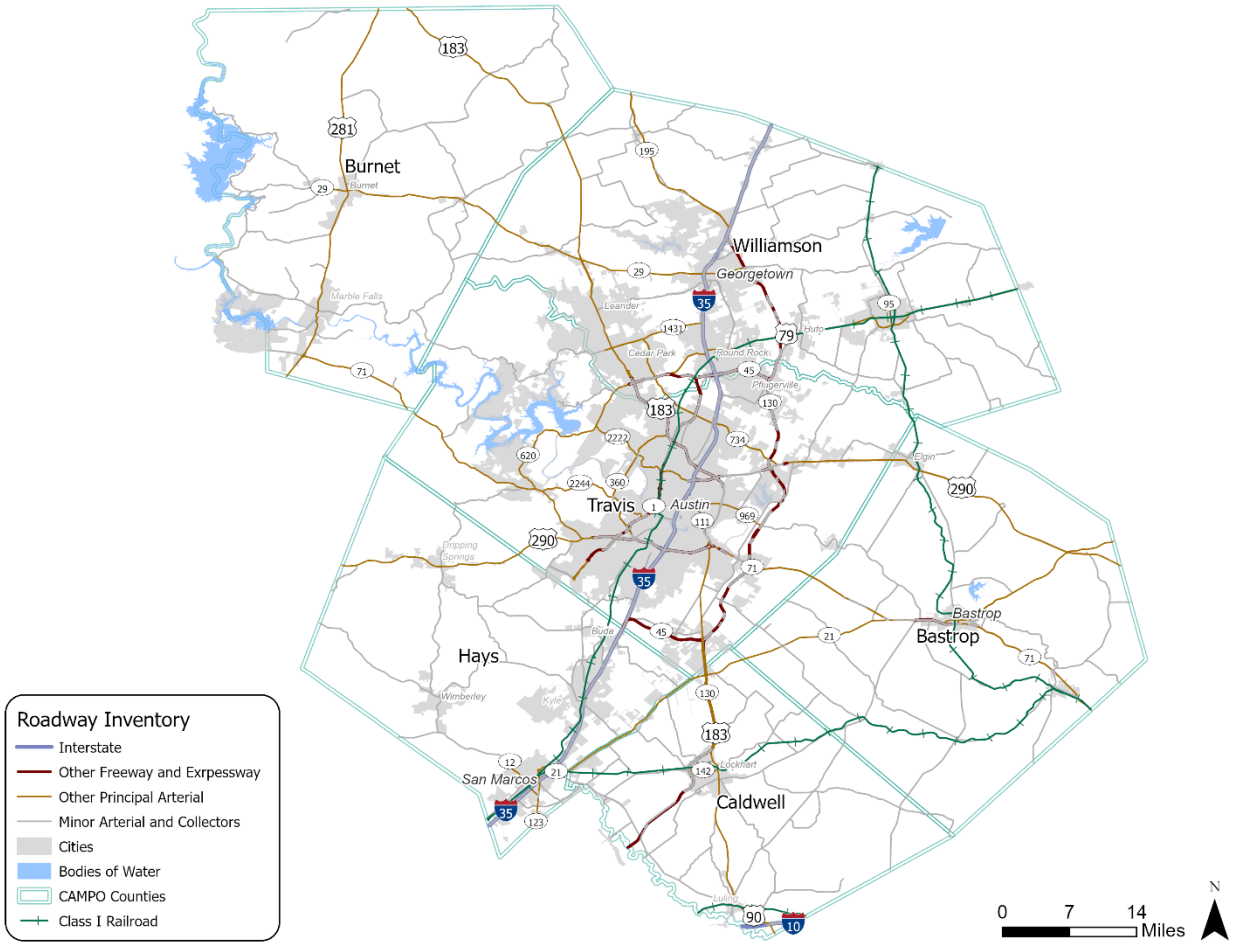
Figure 1: CAMPO Counties and Texas Statewide Roadway Network



Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Figure 2 provides a comprehensive view of the major corridors within the six-county region. Austin and IH 35 have clearly influenced the region's development pattern, with the urbanized area extending north-south through Williamson, Travis, and Hays counties. In most cases, towns and population centers in the more rural counties (Bastrop, Burnet, Caldwell) connect back to this urban core through a network of highways and principal arterials. CAMPO's position within the Texas Triangle megaregion connects it to the large Dallas-Fort Worth and San Antonio metropolitan areas via IH 35 to the north and south and Houston to the east via IH 10 and US 290. In addition, the network of interstates and U.S. and state highways provides connectivity between the CAMPO region and gateways to domestic and global trade.

Figure 2: Inventory of Roadways in the Capital Area Region



Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Functional Classification

The following analysis uses geographic databases maintained by the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA). The TxDOT Roadway Inventory is a statewide public road database published annually in FHWA's Highway Performance Monitoring System Program and internal TxDOT inventory reports.[2] The database includes information on functional classification, physical features, traffic, and population data. Mileage, unless otherwise stated, references centerline miles.

Table 1 shows the total mileage by county for each functional classification within the TxDOT roadway inventory. Functional classification is a definition maintained by the FHWA that defines

[2] https://www.txdot.gov/data-maps/roadway-inventory.html

roadways based on the roadway and traffic characteristics, mainly access, continuity, and connectivity:

- **Interstates** – functional classification indicates roadways that are part of the Interstate system. These are usually access-controlled highways (e.g., access and egress limited on- and off-ramps, limited at-grade intersections, directional travel lanes separated by a physical median, and have an overall high mobility design). These roadways span large portions of the U.S., connecting major urban centers in states nationwide.
- **Other Freeway and Expressways** – in terms of physical design, these roadways have all the features of interstates though they are not part of the interstate system.
- **Other Principal Arterial** – these roadways tend to serve longer trips and have a high-mobility design as the previous two functional classifications but only have partial or uncontrolled access.
- **Minor Arterial** – these roadways tend to short to moderate length intracommunity trips, with moderate mobility and limited access control.
- **Major and minor collectors** – these roadways funnel traffic from local roads onto arterial routes. Major and minor roadways are somewhat subjective, with major roadways having higher speeder limits, fewer access points, and higher traffic volumes.
- **Local roads** – this classification is the largest in terms of mileage and accounts for all not otherwise classified roadways. They tend to disallow thru-traffic, serve small trip lengths, and have many access points.

Table 1: Roadway Functional Class Mileage by County

Functional Classification	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	Williamson County
Interstate (miles)	0 (0%)	0 (0%)	15 (2%)	73 (5%)	99 (2%)	89 (2%)
Other Freeway and Expressway (miles)	10 (1%)	0 (0%)	67 (7%)	0 (0%)	398 (7%)	132 (3%)
Other Principal Arterial (miles)	175 (12%)	95 (9%)	54 (6%)	53 (3%)	265 (5%)	272 (7%)
Minor Arterial (miles)	42 (3%)	11 (1%)	45 (5%)	78 (5%)	359 (6%)	191 (5%)
Major Collector (miles)	178 (12%)	162 (16%)	154 (17%)	233 (15%)	718 (13%)	538 (13%)
Minor Collector (miles)	68 (5%)	91 (9%)	57 (6%)	18 (1%)	129 (2%)	88 (2%)
Local roads (miles)	1,040 (69%)	679 (65%)	530 (58%)	1,113 (71%)	3,772 (66%)	2,865 (69%)
Total	1,514 (100%)	1,039 (100%)	922 (100%)	1,568 (100%)	5,741 (100%)	4,174 (100%)

Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

The TxDOT roadway inventory uses on and off-system designations to indicate maintenance responsibilities for the state's roadway network. Table 2 shows the on-off system designation by county. Overall, TxDOT maintains 22% of the roadway mileage in the CAMPO region. However, across the different counties, that average is split between the rural and urbanized counties somewhat unevenly. The rural counties of Bastrop, Burnet, and Caldwell have a slightly higher percentage of their roadway mileage designated as on-system. For instance, Caldwell has the highest percentage at 40%. The percentages for the urbanized counties are slightly lower. Williamson, for example, only has 18% of its roadway mileage maintained by TxDOT, and Hays and Williamson counties have 22% and 20%, respectively.

Counties and cities maintain the vast majority of total roadway centerline mileage, representing 77% of the total combined. Most freight trips will eventually use TxDOT's on-system network, but local arterial roadways are the final connections to consumers of other freight destinations.

Table 2: TxDOT On and Off-System Roadway Mileage by County

Roadway Type	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	Williamson County	Total
On-System Mainlines	414	296	327	291	821	740	2,889
On-System Right Frontage Road	10	0	21	26	109	50	216
On-System Left Frontage Road	6	0	16	26	107	51	208
On-System Total	**430 (28%)**	**296 (29%)**	**364 (40%)**	**344 (22%)**	**1,037 (18%)**	**841 (20%)**	**3,313 (22%)**
County Road	949	481	427	782	1,386	1,564	5,590
City Street	135	260	129	438	3,207	1,686	5,855
Non-TxDOT Toll Authority Road	0	0	0	1	58	43	102
Federal Road	0	0	0	3	2	26	31
Off-System Total	**1,084 (72%)**	**741 (71%)**	**556 (60%)**	**1,225 (78%)**	**4,653 (82%)**	**3,319 (80%)**	**11,578 (78%)**
Total	1,514 (100%)	1,037 (100%)	920 (100%)	1,569 (100%)	5,690 (100%)	4,160 (100%)	14,891 (100%)

Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

National Highway Freight Network (NHFN)

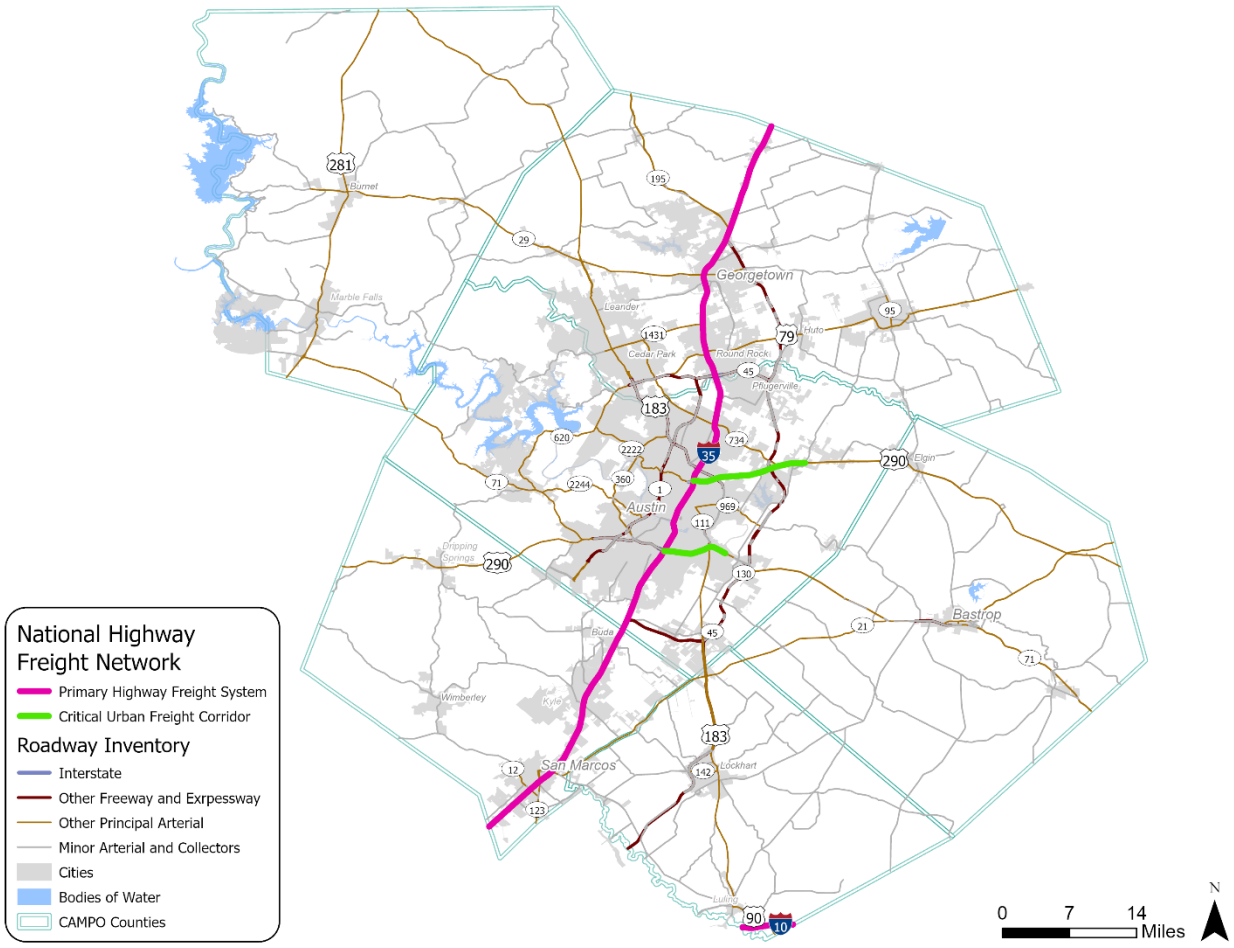
The National Highway Freight Network (NHFN) is a system of federally designated roadways that the FHWA uses to prioritize policy and funding for improving highway performance on facilities used to transport freight.[3] The Fixing America's Surface Transportation (FAST) Act required the FHWA to establish an NHFN, which has been continued under the recent Infrastructure Investment and Jobs Act (IIJA). Figure 3 shows the portions of the NHFN designated within the CAMPO region. The NHFN includes all of IH 35 and IH 10 within CAMPO and portions of US 290 and SH 71.

The NHFN consists of multiple subsystems, including the Primary Highway Freight System (PHFS); the PHFS is a network of highways identified as the most critical portions of the U.S. freight transportation system. The NFHN includes Interstate portions not on the PHFS - Critical Rural Freight Corridors (CRFCs), and Critical Urban Freight Corridors (CUFCs) – that are also critical to freight movement.

In the CAMPO region, IH 35 and IH 10 are designated as parts of the PHFS. CUFCs are designated in partnership between TxDOT and metropolitan planning organizations (MPOs). Federal requirements limit TxDOT to approximately 382 total miles of CUFC corridors statewide, and 16 miles of US 290 and SH 71 within the CAMPO region are designated as CUFCs. There are no CRFCs in the CAMPO region. Projects on the PHFS and the CUFCs are eligible for National Highway Freight Program (NHFP) funds.

[3] https://ops.fhwa.dot.gov/Freight/infrastructure/nfn/index.htm

Figure 3: National Highway Freight Network (NHFN)

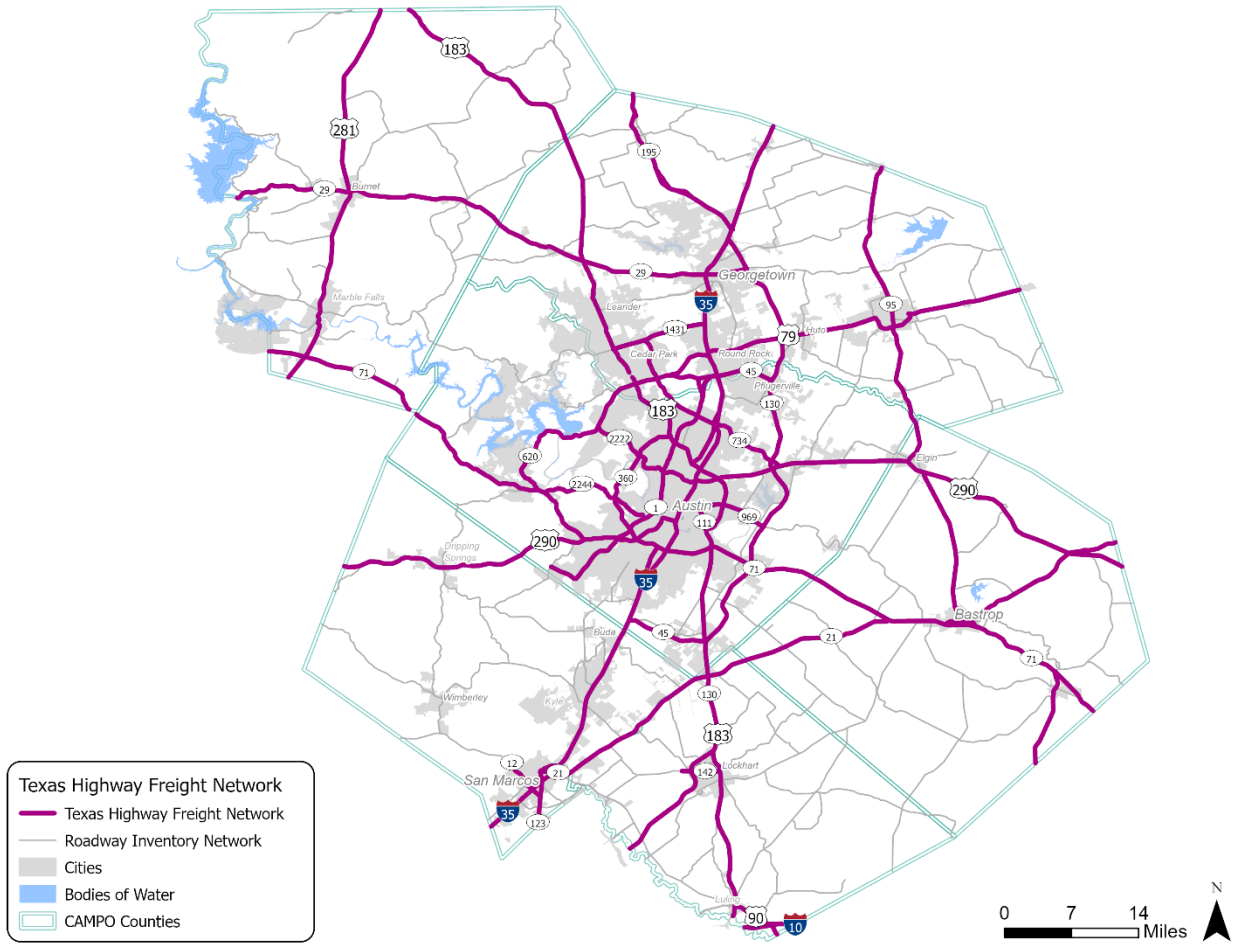


Source: Federal Highway Administration (FHWA). National Freight Network. Available at: https://ops.fhwa.dot.gov/freight/infrastructure/nfn/index.htm

Texas Highway Freight Network (THFN)

The THFN, an element of the Texas Multimodal Freight Network (TMFN), identifies the highway corridors and segments most critical to freight movement for planning and project prioritization. Done in conjunction with Texas Delivers 2050, the designation of the THFN is based on geospatial analysis of freight movement patterns, freight-generating businesses, population and workforce centers, and trade and transportation gateways. As seen in Figure 4 every interstate, freeway, expressway, and most principal arterials in the CAMPO region are included in the THFN. Notably, these roads are the primary connections between counties and provide interconnectivity between urban and rural areas of the region.

Figure 4: Texas Highway Freight Network (THFN)



Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Table 3 provides a summary of the mileage on the THFN by county. In the CAMPO region, Travis County has the most significant share (34%) of the mileage on the THFN, followed by Williamson County with 25%. Caldwell County has the least mileage, with 7% of the total. Travis County is the only county with roadways in the PHFS and roadways designated as CUFCs.

Table 3: Mileage on the Texas Highway Freight Network (THFN) by CAMPO Counties

County	Primary Highway Freight System Mileage (% of THFN Mileage)	Critical Urban Freight Corridor Mileage (% of THFN Mileage)	Texas Highway Freight Network Mileage
Bastrop	0 (0%)	0 (0%)	119 (14%)
Burnet	0 (0%)	0 (0%)	101 (12%)
Caldwell	5 (5%)	0 (0%)	63 (7%)
Hays	24 (29%)	0 (0%)	70 (8%)
Travis	28 (33%)	16 (100%)	292 (34%)
Williamson	28 (32%)	0 (0%)	211 (25%)
Total	85 (100%	16 (100%)	856 (100%)

Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Route Restrictions

Route restrictions can apply to commercial vehicles, usually of a specific size, restricting them from using certain roadways. In addition, restrictions apply to vehicles carrying specific loads such as hazardous materials, and to increase safety, specify which routes these vehicles can use. According to TxDOT, the CAMPO region currently has no non-radioactive hazardous materials (NRHM) routes.[4]

TxDOT is the state routing agency in charge of approving NRHM routes in Texas, which is required by state law for cities with a population of 850,000 or greater. The City of Austin is the only municipality in the region that meets the population threshold. The City has developed a draft network of recommended NRHM routes that identifies US 290 and SH 71 as designated through routes for east-west travel and SH 130 for north-south travel to avoid routing NHRM loads through the city on IH 35.[5]

CAMPO currently has no publicly available list of route restrictions. Some truck restrictions can be found at the jurisdictional level by searching jurisdictional websites and records. The City of Austin, for instance, has specific requirements for large commercial vehicles loading and unloading within certain areas of the city.[6] San Marcos and Wimberly both restrict thru-truck traffic within the city limits. These restrictions do not preclude commercial vehicles from entering the jurisdiction for delivery purposes. In 2021, Bastrop County enacted a similar policy on a number of county roads.[7]

[4] TxDOT. Non-radioactive hazardous materials (NRHM) routing maps. Available at: https://www.txdot.gov/data-maps/reference-maps/non-radioactive-hazardous-materials.html
[5] City of Austin. Non-Radioactive Hazardous Route Designation Plan. Available at: https://www.austintexas.gov/department/non-radioactive-hazardous-materials-route-designation-plan
[6] City of Austin. Commercial Vehicle Loading. Available at: https://www.austintexas.gov/loadingpermit
[7] Bastrop County. Ordinance #2021-01. Available at: https://www.co.bastrop.tx.us/upload/page/0283/docs/Ordinance%20Imposing%20Thru%20Truck%20Restriction%20on%20Certain%20Bastrop%20County%20Roads%202021-01%2012%2027%2021.pdf

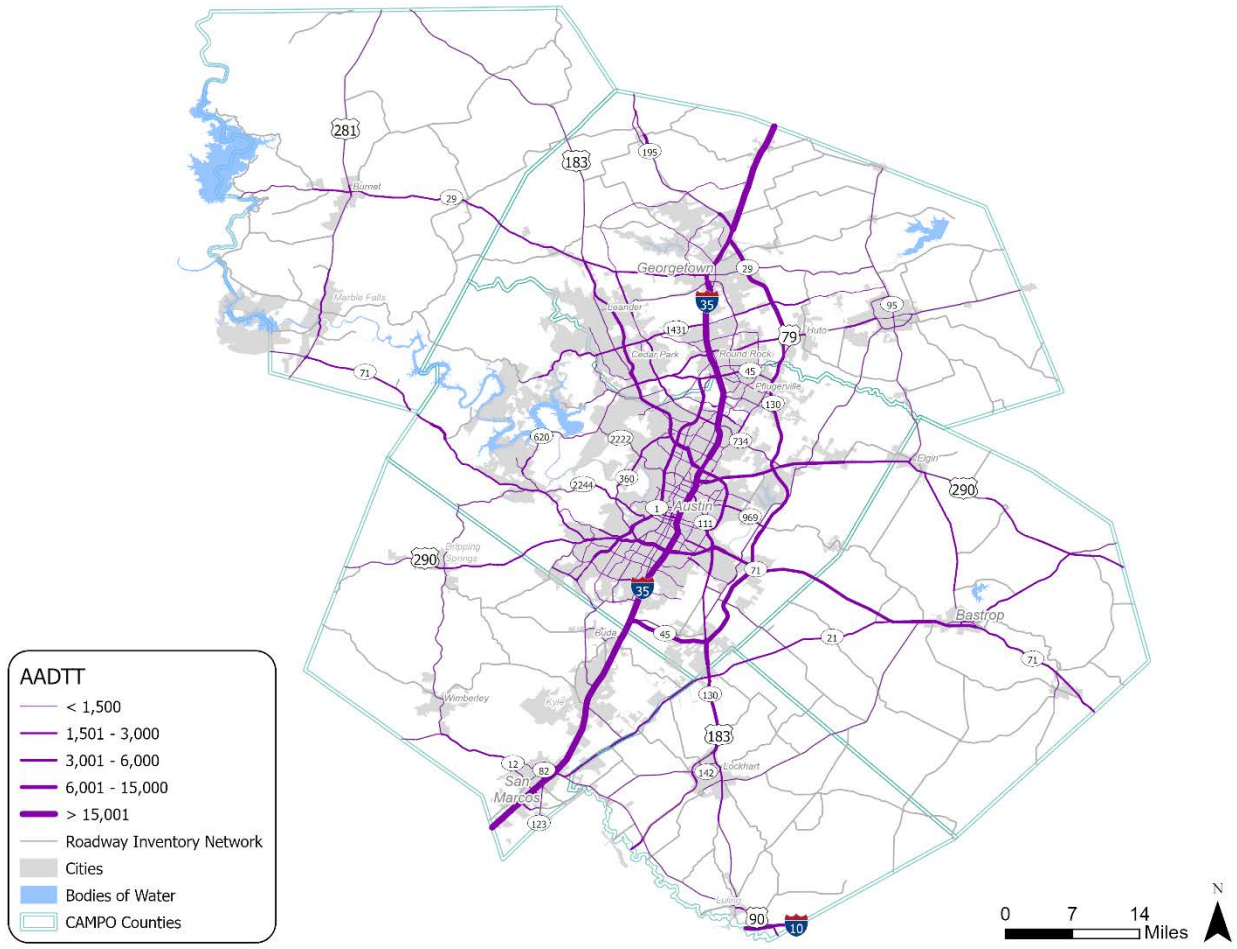
Highway Condition and Performance

This section discusses the performance of highways in the CAMPO region, focusing on mobility measures that assess the efficiency of freight vehicle movements on the roadway network, as well as safety and asset conditions.

Truck Traffic Volumes

Figure 5 shows the Average Annual Daily Truck Traffic (AADTT) for the CAMPO region. IH 35 carries the majority of daily truck traffic in the region, and the additional concentration of traffic on SH 45 and SH 130 results from trucks avoiding the north-south congestion on IH 35 that goes through central Austin from Hays County to Williamson County. Other notable routes tend to be east-west highways connecting Travis and Williamson counties to other urbanized areas such as Bastrop, Lockhart, Leander, and Dripping Springs.

Figure 5: Average Annual Daily Truck Traffic (AADTT), 2021



Source: Texas Department of Transportation (TxDOT). Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Table 4 lists the top 5 corridors in each county according to AADTT. To identify top corridors by AADTT, segment-level values were aggregated and weighted by the length (in miles) to identify a representative level of truck volume for the corridor.

Table 4: Top Roadway Corridors by Average Annual Daily Truck Traffic (AADTT), 2021

County	Corridor	Functional Classification	Average Annual Daily Truck Traffic (AADTT)	Length (miles)
Bastrop	SH 71	Other Principal Arterial	2,980	76
	SH 21	Other Freeway and Expressway	2,229	74
	US 290	Other Principal Arterial	1,733	49
	SH95	Minor Arterial	1,417	31
	FM 1100	Major Collector	911	2
Burnet	SH 71	Other Principal Arterial	2,417	15
	SH 29	Other Principal Arterial	1,795	26
	US 281	Other Principal Arterial	1,307	46
	US 183	Other Principal Arterial	926	21
	FM 3509	Minor Collector	452	6
Caldwell	IH 10	Interstate	7,529	17
	SH 130	Other Freeway and Expressway	2,507	84
	SH 21	Other Principal Arterial	1,851	7
	SH 80	Minor Arterial	1,086	22
	US 183	Other Principal Arterial	1,029	39
Hays	IH 35	Interstate	12,896	123
	SH 21	Other Principal Arterial	1,620	17
	US 290	Other Principal Arterial	1,472	17
	SH 123	Other Principal Arterial	1,179	6
	SL 82	Other Principal Arterial	1,089	7
Travis	IH 35	Interstate	10,637	158
	71 Toll Lane	Other Freeway and Expressway	5,020	6
	183 Toll	Other Freeway and Expressway	4,767	22
	SH 130	Other Freeway and Expressway	4,216	143
	SH 71	Other Freeway and Expressway	3,714	76
Williamson	IH 35	Interstate	9,983	144
	SH 130	Other Freeway and Expressway	5,123	59
	183A Toll	Other Freeway and Expressway	3,545	32
	SL 1	Other Freeway and Expressway	2,646	3
	RM 620	Other Principal Arterial	2,014	12

Source: Texas Department of Transportation (TxDOT). TxDOT Roadway Inventory (2021). Available at: https://www.txdot.gov/data-maps/roadway-inventory.html

Congestion, Reliability, and Delay

This section discusses key metrics of highway performance that compare the potential performance of a highway under ideal traffic conditions and actual conditions. For example, the IH 35 corridor through Travis and Williamson counties is among the most congested segments in the country. Each year, the American Transportation Research Institute (ATRI) analyzes the top 100 truck bottlenecks in the U.S. and has consistently found IH 35 (from Manor Road to Cesar Chavez Street) in central Austin to be a significant bottleneck. In ATRI's 2023 list, IH 35 was ranked the 32nd worst truck bottleneck in the entire nation.[8]

Texas A&M Transportation Institute (TTI) maintains a list of Texas' most congested truck roadways, using person-hours of delay per mile as the primary measurement for ranking roadway segments.[9] As shown in Table 5, IH 35 from US 290 N to SH 71 ranks first in the whole state for truck delay. Four other segments of IH 35 in Travis and Williamson counties rank within the top 100 roadways. Additionally, US-290/SH-71 from RM 1826 to SL 1 (MoPac Expressway) ranks 79th statewide. The two remaining segments on IH 35 from SH 45 to US 290 are ranked 91st and 98th on TTI's list.

Table 5: Texas A&M Transportation Institute (TTI) List of Top Truck-Congested Roadways in Texas, 2021

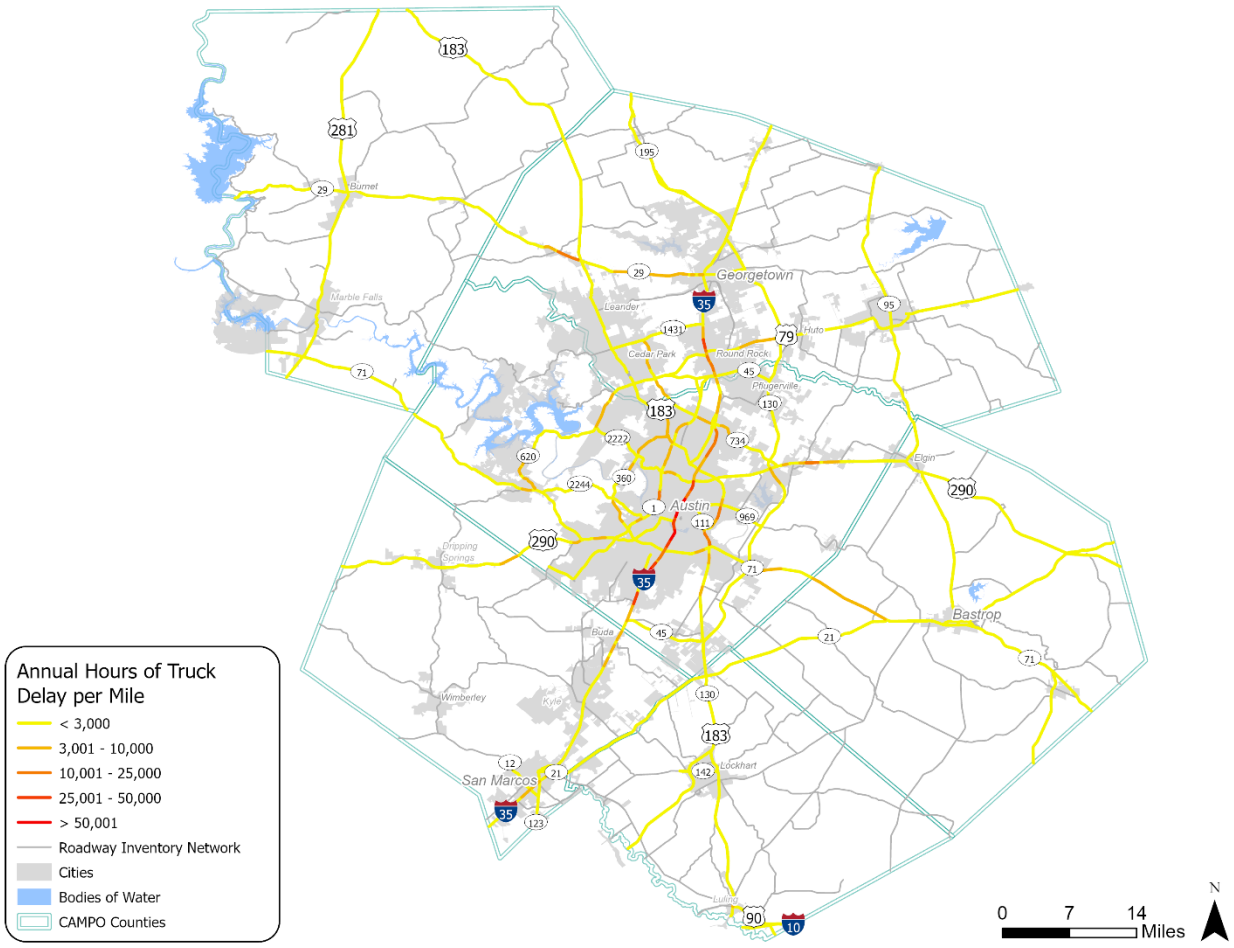
TTI Rank	Road Name	From	To	Annual Hours of Truck Delay/Mile
1	IH 35	US 290 N	Ben White Blvd / SH 71	78,333
13	IH 35	RM 1431	SH 45 / Louis Henna Blvd	35,975
19	IH 35	Ben White Blvd / SH 71	Slaughter Ln	27,897
30	IH 35	Slaughter Ln	SH 45	19,375
79	US 290/SH 71	RM 1826	S MoPac Expy / SL 1	8,381
91	IH 35	SH 45 / Louis Henna Blvd	Parmer Ln / FM734	7,228
98	IH 35	Parmer Ln / FM 734	US 290 N / SS 69	6,854

Source: Texas A&M Transportation Institute (TTI). Texas' Most Congested Roadways. Available at: https://mobility.tamu.edu/texas-most-congested-roadways/

Figure 6 shows the annual hours of truck delay per mile on the THFN according to TTI's analysis of 2019 INRIX data. The IH 35 corridor shows the highest levels of truck delay. However, segments with elevated levels of truck delay are also seen on several other north-south corridors, such as US 183 and SL 360 in Travis County. In addition, high truck delay is seen on east-west corridors such as SH 29 in Williamson County between Burnet and Georgetown, US 79 in Round Rock, and SH 71 in western Bastrop County.

8 American Transportation Research Institute, Top 100 Truck Bottlenecks – 2023. Available at: https://truckingresearch.org/2023/02/07/top-100-truck-bottlenecks-2023/
9 Texas Transportation Institute, Texas' Most Congested Roadways. Available at: https://mobility.tamu.edu/texas-most-congested-roadways/

Figure 6: Annual Hours of Truck Delay per Mile on the Texas Highway Freight Network (THFN), 2019



Source: Texas A&M Transportation Institute (TTI) analysis of INRIX data, 2019.

Table 6 lists the top five (5) corridors in each CAMPO county by annual hours of truck delay per mile. To identify top corridors by hours of truck delay, segment-level values were aggregated and weighted by length to identify a representative level of delay for the corridor. For example, in Travis, Hays, and Williamson counties, IH 35 has the highest levels of truck delay. In the more rural counties of Bastrop, Burnet, and Caldwell counties, principal arterials such as SH 71, US 281, and US 183 are notable corridors with a high level of truck delay.

Table 6: Annual Hours of Truck Delay per Mile Summarized by Corridor and County, 2019

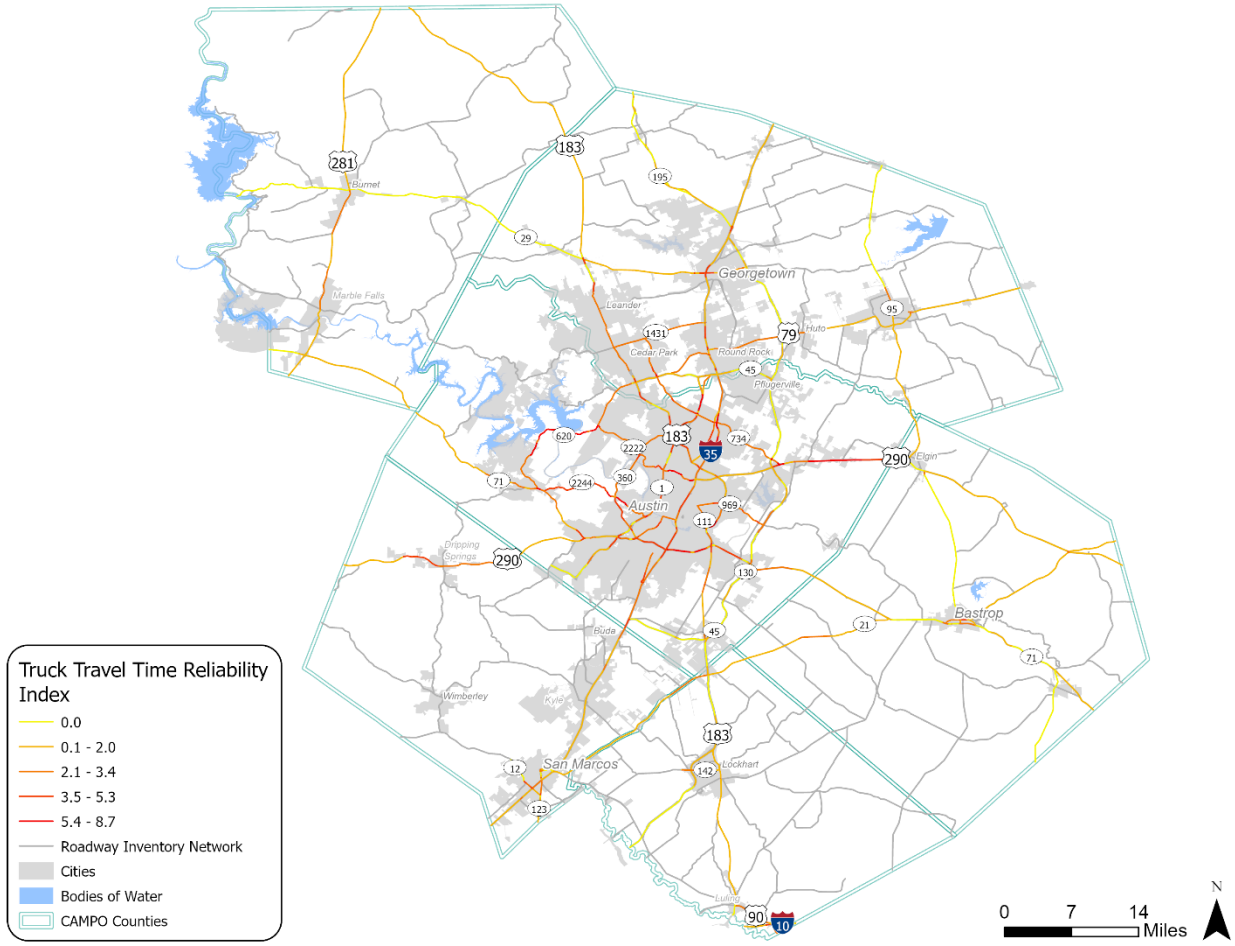
County	Corridor	Functional Classification	Annual Hours of Truck Delay per Mile	Mileage
Bastrop	SL 150	Other Principal Arterial	2,261	2
	SH 71	Other Principal Arterial	960	24
	SH 21	Other Freeway and Expressway	724	38
	US 290	Other Principal Arterial	641	25
	SH 95	Minor Arterial	505	31
Burnet	US 281	Other Principal Arterial	654	40
	SH 29	Other Principal Arterial	592	26
	US 183	Other Principal Arterial	232	21
	SH 71	Other Principal Arterial	113	15
	RM 963	Major Collector	44	0
Caldwell	SH 142	Other Principal Arterial	1,215	3
	US 183	Other Principal Arterial	994	18
	SH 80	Major Collector	959	1
	SH 21	Other Principal Arterial	813	8
	US 90	Other Principal Arterial	634	6
Hays	IH 35	Interstate	3,428	24
	SL 82	Other Principal Arterial	2,597	3
	SH 80	Minor Arterial	2,163	1
	SH 123	Other Principal Arterial	1,983	4
	RM 12	Other Principal Arterial	1,647	5
Travis	IH 35	Interstate	52,613	28
	US 183	Other Freeway and Expressway	6,887	28
	FM 734	Other Principal Arterial	4,104	13
	SL 1	Other Freeway and Expressway	3,852	24
	SL 360	Other Principal Arterial	3,294	14
Williamson	IH 35	Interstate	7,389	28
	SS 377	Major Collector	4,884	1
	SH 29	Other Principal Arterial	3,813	24
	FM 734	Other Principal Arterial	3,516	7
	RM 620	Other Principal Arterial	2,922	6

Source: Cambridge Analysis of truck delay data from the Texas A&M Transportation Institute (TTI), 2019

Truck Travel Time Reliability (TTTR) is defined by comparing truck travel times between a free-flow period with no congestion against normal travel times (95th percentile). The lower the TTTR, the more reliable travel time is, with little difference between the roadway's optimal performance and typical traffic patterns. Figure 7 maps TTTR on the THFN, and Table 7 summarizes this information by corridor for each county in the region.

While truck delay in the region is more concentrated along specific corridors/segments, reliability is an issue across the region. Several parts of the region experience high levels of congestion during peak travel periods, with non-recurring events such as incidents and inclement weather causing additional delays and variability in travel times. For truck drivers, this means adding buffer time to a trip or taking circuitous routes to avoid congestion to ensure on-time arrival, which increases vehicle miles traveled and leads to higher transport costs. While travel delay is concentrated along IH 35, it is important to note that travel time unreliability can still impact less congested roadways, particularly on the east-west connecting with IH 35 and corridors that provide parallel north-south access.

Figure 7: Truck Travel Time Reliability Ratio (TTTR) on the Texas Highway Freight Network (THFN), 2019



Source: Cambridge Systematics Analysis of the National Performance Management Research Data Set (NPMRDS), 2019.

Table 7: Truck Travel Time Reliability (TTTR) Summarized by Corridor and County, 2019

	Corridor	Functional Classification	Truck Travel Time Reliability (TTTR)	Length (miles)
Bastrop	SL 150	Other Principal Arterial	2.3	2
	US 290	Other Principal Arterial	1.3	25
	SH 21	Other Freeway and Expressway	1.2	38
	SH 71	Other Principal Arterial	1.2	24
	SH 95	Minor Arterial	0.2	31
Burnet	US 281	Other Principal Arterial	1.7	40
	RM 963	Major Collector	1.2	0
	US 183	Other Principal Arterial	1.2	21
	SH 71	Other Principal Arterial	1.1	15
	SH 29	Other Principal Arterial	<0.1	26
Caldwell	SH 142	Other Principal Arterial	2.0	3
	IH 10	Interstate	2.0	5
	SH 21	Other Principal Arterial	1.7	8
	US 90	Other Principal Arterial	1.5	6
	US 183	Other Principal Arterial	1.4	18
Hays	FM 2439	Major Collector	4.4	0
	US 290	Other Principal Arterial	2.5	17
	FM 621	Major Collector	2.3	0
	SL 82	Other Principal Arterial	2.1	3
	SH 123	Other Principal Arterial	1.9	4
Travis	RM 2244	Other Principal Arterial	4.7	11
	RM 620	Other Principal Arterial	4.6	17
	SS 69	Other Freeway and Expressway	3.9	1
	RM 2222	Other Principal Arterial	3.5	11
	IH 35	Interstate	3.4	28
Williamson	FM 734	Other Principal Arterial	3.5	7
	FM 1325	Minor Arterial	2.8	1
	RM 620	Other Principal Arterial	2.7	6
	RM 1431	Other Principal Arterial	2.6	9
	US 183	Other Freeway and Expressway	1.9	30

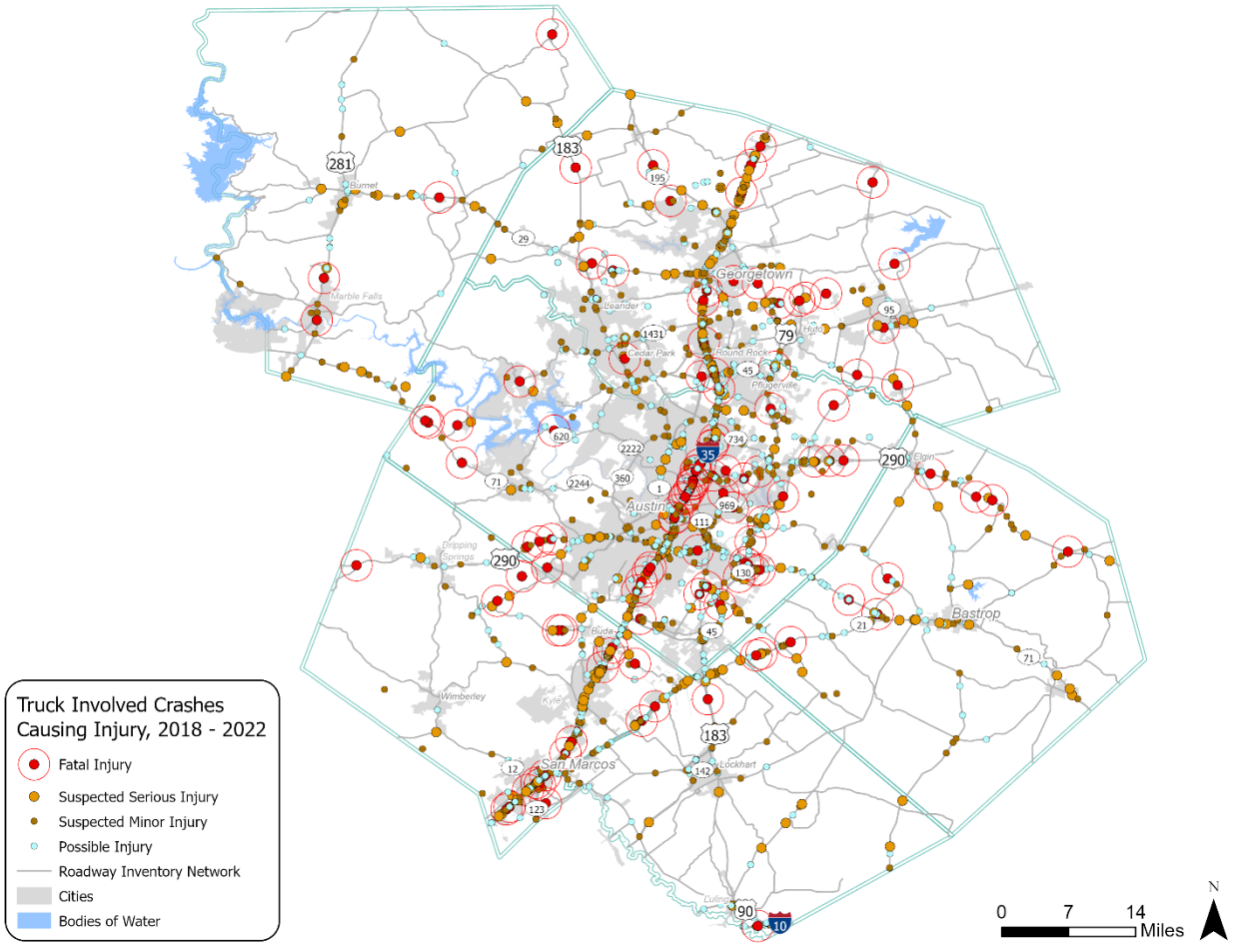
Source: Cambridge Systematics Analysis of the National Performance Management Research Data Set (NPMRDS), 2019.

Safety

This section analyzes truck-involved crashes using data from the Crash Records Information System (CRIS) for the reporting period of 2018 to 2022. Due to their inherent size and momentum, the involvement of a truck vehicle can contribute to severe crash injuries. Therefore, understanding the location of crashes and severity is essential for assessing the safety of freight movement in the region. Over the five-year period, a total of 6,415 truck-involved crashes have occurred in the CAMPO region.

Figure 8 maps the location of truck-involved crashes that resulted in injury. The map shows visual concentrations of these crashes along the IH 35 corridor, particularly in the segment through the central part of Austin in Travis County and in San Marcos in Hays County. Across the network, there were 145 crashes involving a fatality (2% of the total). Injury crashes represented 32% of all truck-involved crashes in the region.

Figure 8: Truck-Involved Crashes Causing Injury by Severity, 2018-2022



Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Table 8 breaks down truck-involved injury crashes by severity for each county. For example, over 50% of fatal crashes occurred in Travis County though only 37% of all crashes involving trucks occurred there. Bastrop also had a higher share of fatal injuries than its total share of truck-involved crashes. Overall, 2,081 or nearly a third of the total truck-involved crashes resulted in a form of personal injury.

Table 8: Truck-Involved Crashes by Severity, 2018-2022

Crash Severity	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	William. County	Total
Fatal Injury	12 (8%)	4 (3%)	4 (3%)	74 (51%)	30 (21%)	21 (14%)	145 (100%)
Suspected Serious Injury	26 (10%)	15 (5%)	19 (7%)	81 (30%)	80 (29%)	52 (19%)	273 (100%)
Suspected Minor Injury	60 (7%)	30 (4%)	30 (4%)	368 (45%)	203 (25%)	128 (16%)	819 (100%)
Possible Injury	47 (6%)	30 (4%)	48 (6%)	408 (48%)	173 (20%)	138 (16%)	844 (100%)
Not Injured	332 (8%)	210 (5%)	243 (6%)	1,436 (33%)	1,395 (32%)	684 (16%)	4,300 (100%)
Unknown	2 (6%)	2 (6%)	3 (9%)	15 (44%)	8 (24%)	4 (12%)	34 (100%)
Total	479 (7%)	291 (5%)	347 (5%)	2,382 (37%)	1,889 (29%)	1,027 (16%)	6,415 (100%)

Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Table 9 ranks corridors in the region by the total number of truck-involved crashes. IH 35 represents 40% of all crashes, with the next highest roadway, US 183, representing about 8% of all truck-involved crashes; compared to US 183 which had more truck-involved crashes, SH 71, US 290, and SH 130 had more fatal injury crashes.

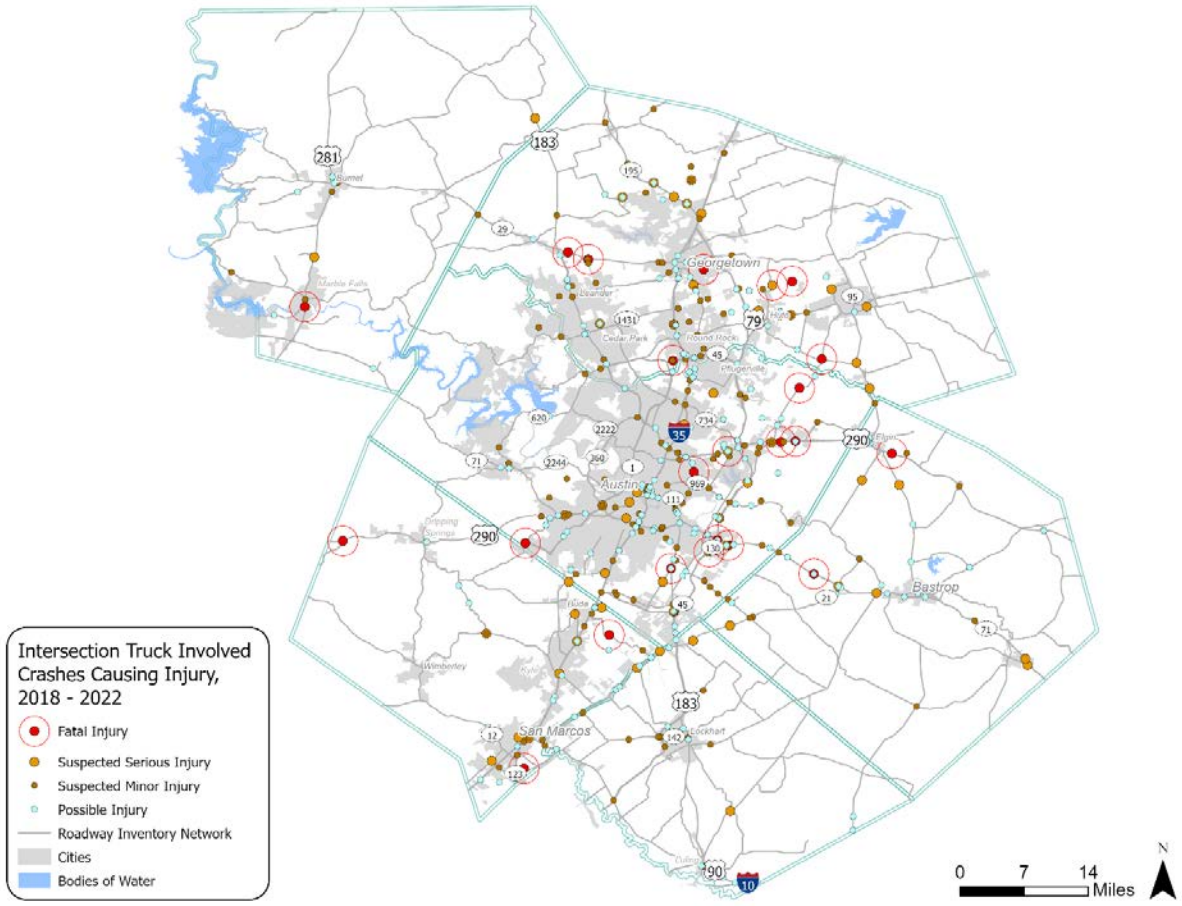
Table 9: Top 20 Corridors by Total Truck-Involved Crashes, 2018-2022

Corridor	Total Crashes	Fatal Injury	Suspected Serious Injury	Suspected Minor Injury	Possible Injury	Not Injured	Unknown
IH 35	1,794	40	79	264	254	1,152	5
US 183	349	4	14	48	42	238	3
SH 71	280	10	11	34	45	177	3
US 290	237	11	12	35	32	147	0
SH 21	208	6	12	26	25	138	1
SH 130	192	8	4	22	36	122	0
SH 29	146	3	9	16	11	107	0
US 281	103	2	4	8	12	77	0
US 79	81	1	3	15	5	56	1
RM 1431	69	0	1	11	5	52	0
FM 973	59	2	1	9	9	38	0
FM 969	52	2	0	9	5	36	0
IH 10	49	1	0	5	5	37	1
SH 45	45	0	1	2	7	34	1
SH 95	44	2	3	5	5	28	1
LP 1	42	0	4	3	12	23	0
FM 812	40	1	4	7	7	21	0
SH 195	37	1	4	3	4	25	0
US 90	37	0	0	2	6	29	0
RM 620	34	1	0	1	3	29	0

Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Figure 9 shows the truck-involved injury crashes in the region that occurred at an intersection. Between 2018-2022, trucks were involved in 543 intersection-related crashes resulting in an injury, representing 26% of all injury crashes. Intersection crashes could suggest issues with access control on principal arterials and at certain arterial intersections, especially along corridors in exurban and rural areas that were not initially designed to handle the volume and types of truck traffic. These corridors include undivided U.S. highways and FM/RM roads.

Figure 9: Truck-Involved Injury Crashes located at an Intersection, 2018 – 2022



Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Truck Parking

Truck drivers need parking for various reasons, including rest and travel amenities on long-haul routes, staging outside of pick-up/delivery locations and border crossings, taking federally mandated rest breaks, and parking vehicles during off-duty periods. TxDOT's 2020 Truck Parking Study analyzed truck parking safety and the deficit of available spaces during periods of peak demand.

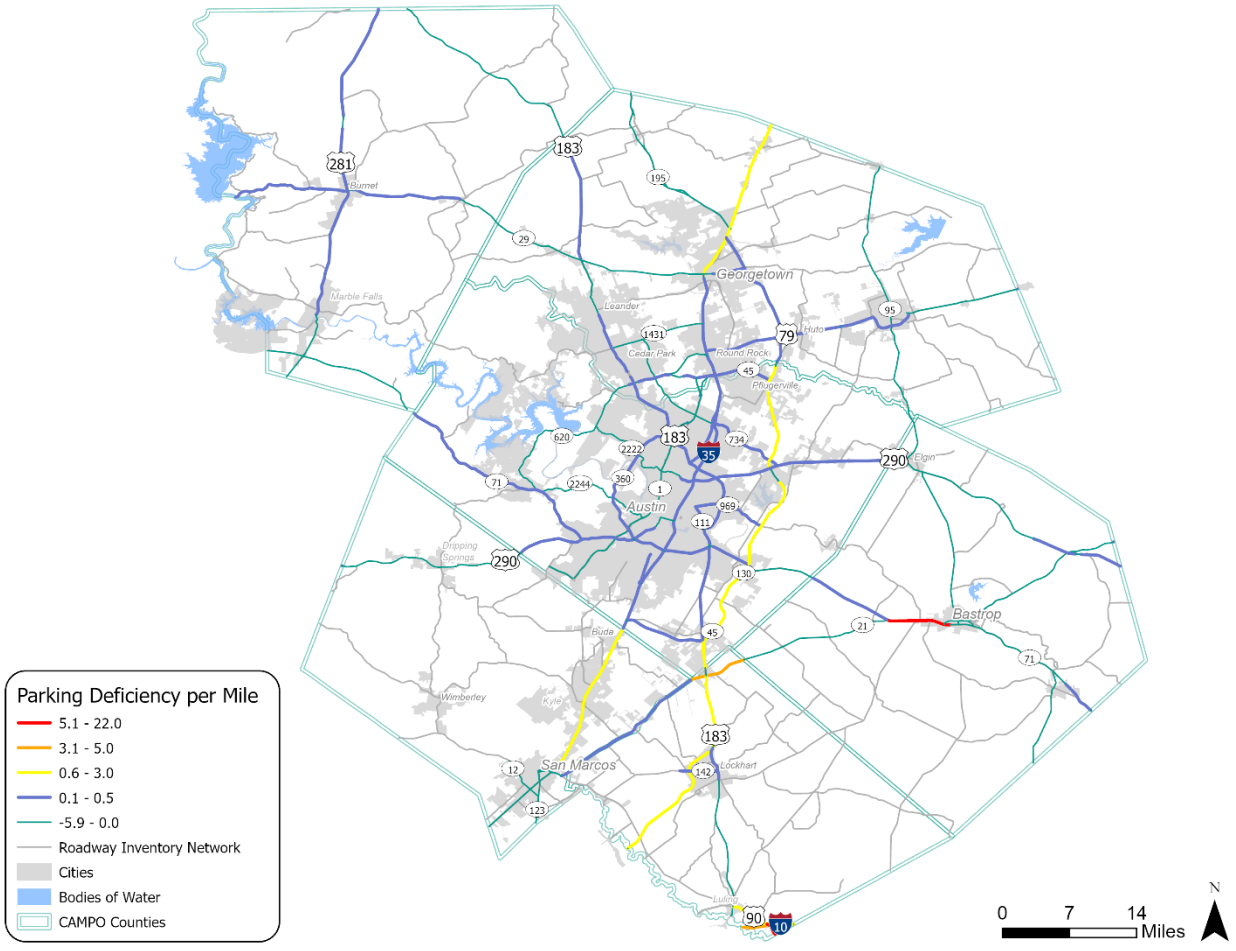
Currently, the CAMPO region does not have public truck parking locations along its Interstate corridors, notably along IH 35. Several public truck parking facilities are located just outside the region along key freight corridors:

- Northbound/southbound Bell County Safety Rest Area, north of Williamson County along IH 35
- Fayette County Picnic Area, east of Bastrop County along eastbound SH 71

- Eastbound/westbound Guadalupe County Safety Rest Area, southwest of Caldwell County along IH 10

Figure 10 shows the estimated peak hour deficit for truck parking in the CAMPO region using the analysis from the Truck Parking Study. Many corridors near Austin, including IH 35, have only slight to moderate parking deficits. The largest deficits along IH 35 are in Williamson and Hays counties, south of SH 45 and north of SH 29. Truck parking deficits are also seen on SH 130, which trucks use to bypass the congested segments of IH 35 through Travis County. The greatest deficiency in the region by far occurs west of the city of Bastrop along SH 71. Another significant deficit along SH 21 occurs in north Caldwell County where the highway intersects with US-183. The short segment of IH 10 in Caldwell County is also notably deficient for truck parking.

Figure 10: Peak Hour Truck Parking Deficit on the Texas Highway Freight Network (THFN)



Source: Texas Department of Transportation (TxDOT). Statewide Truck Parking Study, 2020.

Pavement Condition

Table 10 summarizes the pavement condition rating for roadways in the CAMPO region and the THFN. A rating is assigned according to the International Roughness Index (IRI). IRI values are measured in inches per mile and are used by the FHWA and state DOTs to evaluate pavement ride quality. Qualitative ratings – "Good," "Fair," and "Poor" – are assigned to roadway segments according to the following performance thresholds:

- **Good** – IRI value is less than 95
- **Fair** – IRI value is between 95 and 170
- **Poor** – IRI value is greater than 170

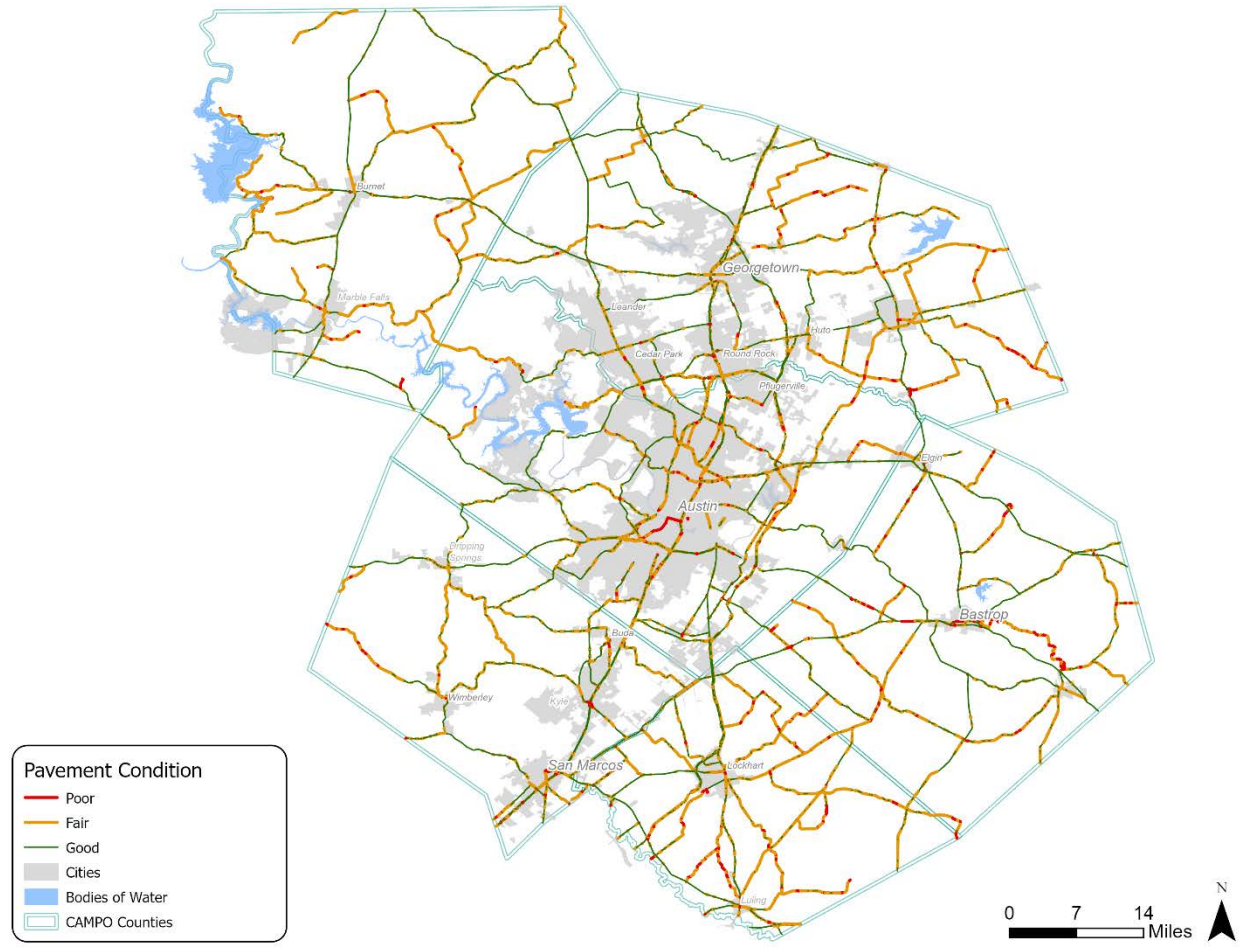
Among the roadway mileage reported for the on-system network, 92% were rated in "good" or "fair" condition, while only 8% were rated "poor." Figure 11 maps this information for the on-system network in the CAMPO region.

Table 10: Pavement Conditions in the CAMPO Region

Pavement Quality	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	Williamson County
Good	180 (56%)	134 (46%)	137 (45%)	158 (60%)	345 (59%)	323 (58%)
Fair	108 (33%)	142 (49%)	135 (44%)	89 (34%)	200 (34%)	197 (35%)
Poor	35 (11%)	14 (5%)	32 (11%)	15 (6%)	44 (7 %)	37 (7%)
Total	323 (100%)	290 (100%)	304 (100%)	262 (100%)	589 (100%)	557 (100%)

Source: Texas Department of Transportation (TxDOT), 2021.

Figure 11: Pavement Condition for On-System Roadways, 2021



Source: Texas Department of Transportation (TxDOT), 2021.

Bridge Condition and Vertical Clearance

The TxDOT bridge database was analyzed to evaluate bridge conditions and vertical clearances specific to freight considerations. These factors could affect the overall efficiency of freight operations by limiting the route options for certain trucks, particularly those that are transporting oversized and overweight loads. This requires vehicles to travel additional distances to avoid striking a low-clearance bridge, for example. In addition, trucks are not always aware of bridge condition issues, and traveling on them accelerates the rate of deterioration of the deck and structure.

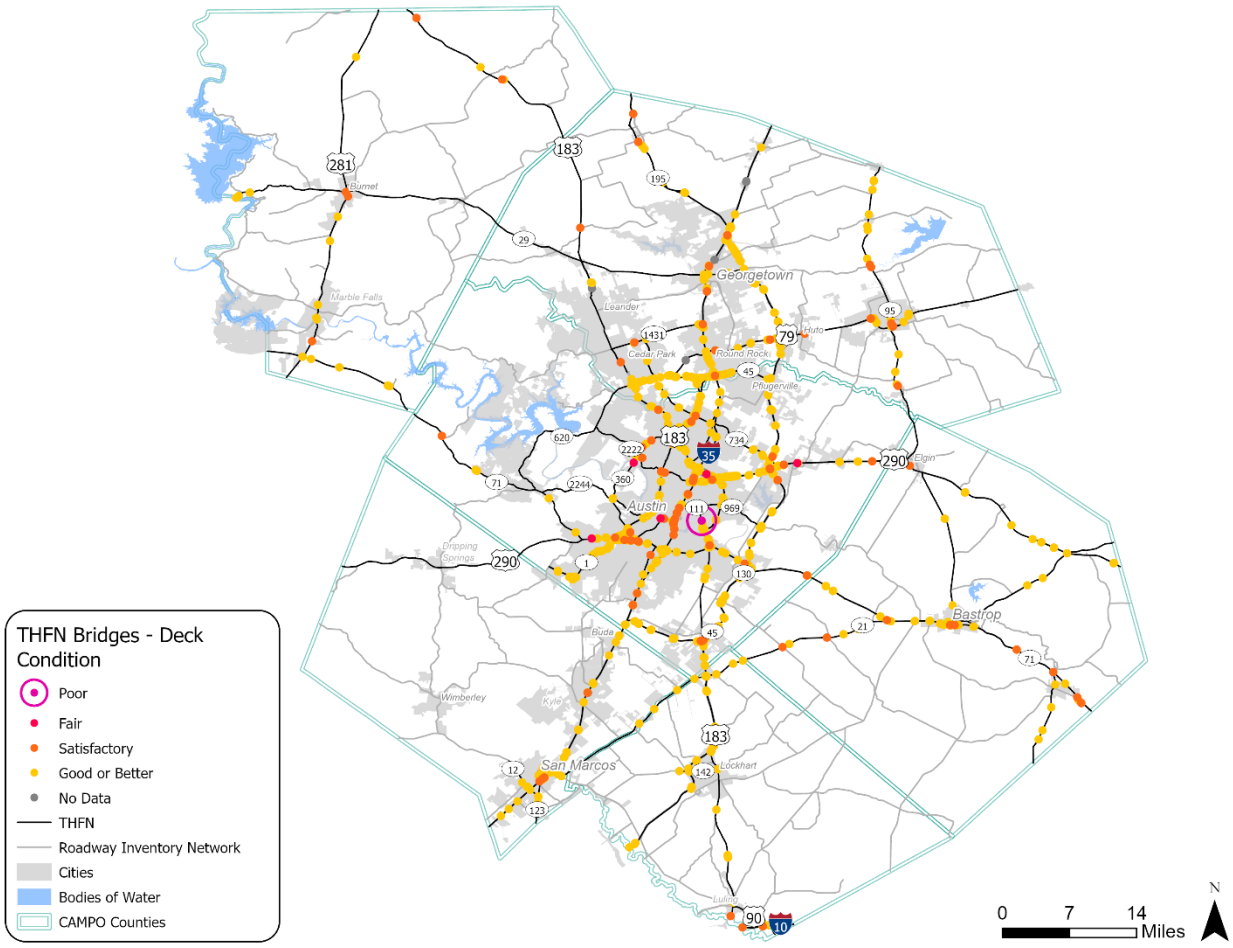
Using the bridges point shapefile from the TxDOT data portal, bridges along the THFN were identified and analyzed for deck condition according to the following classification codes:

- **Excellent Condition:** N/A (no definition provided).
- **Very Good condition:** No problems noted.
- **Good Condition:** Some minor problems.

- **Satisfactory Condition:** Structural elements show some minor deterioration.
- **Fair Condition:** All primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.
- **Poor Condition:** Advanced section loss, deterioration, spalling, or scour.
- **Serious Condition:** Loss of section, deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present.
- **Critical Condition:** Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present, or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.
- **Imminent Failure Condition:** Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. The bridge is closed to traffic, but corrective action may put it back in light service.
- **Failed Condition:** Out of service; beyond corrective action.

Figure 12 maps the location and deck condition for bridge overpasses carrying the THFN in the CAMPO region. Of the 920 bridges shown on the map, 87% are rated good or better for deck condition, and 11% are rated in satisfactory condition. Most of the overpass locations are in Travis County, which has 53% of the total, followed by Williamson County with 25%. Burnet County has the most significant proportion of locations rated as satisfactory, with 23%. Travis County has the only location with a poor deck condition rating – the overpass carrying LP 111 (Airport Blvd.) over railroad tracks in East Austin.

Figure 12: Bridge Deck Condition on the Texas Highway Freight Network (THFN)



Source: Texas Department of Transportation (TxDOT). TxDOT Bridges (2021). Available at: https://gis-txdot.opendata.arcgis.com/datasets/txdot-bridges

TxDOT has implemented a vertical clearance requirement of 18.5 feet for bridges spanning the THFN. Since September 28, 2017, an 18.5-ft bridge underpass vertical clearance has been required on the THFN for all new construction and reconstruction projects.[10] The higher vertical clearance standard is designed to increase freight mobility across the network by accommodating the needs of oversized loads. The increased vertical standard also improves safety and asset management by reducing the potential for bridge strikes.

[10] TxDOT. Roadway Design Manual. Section 8: Texas Highway Freight Network (THFN).

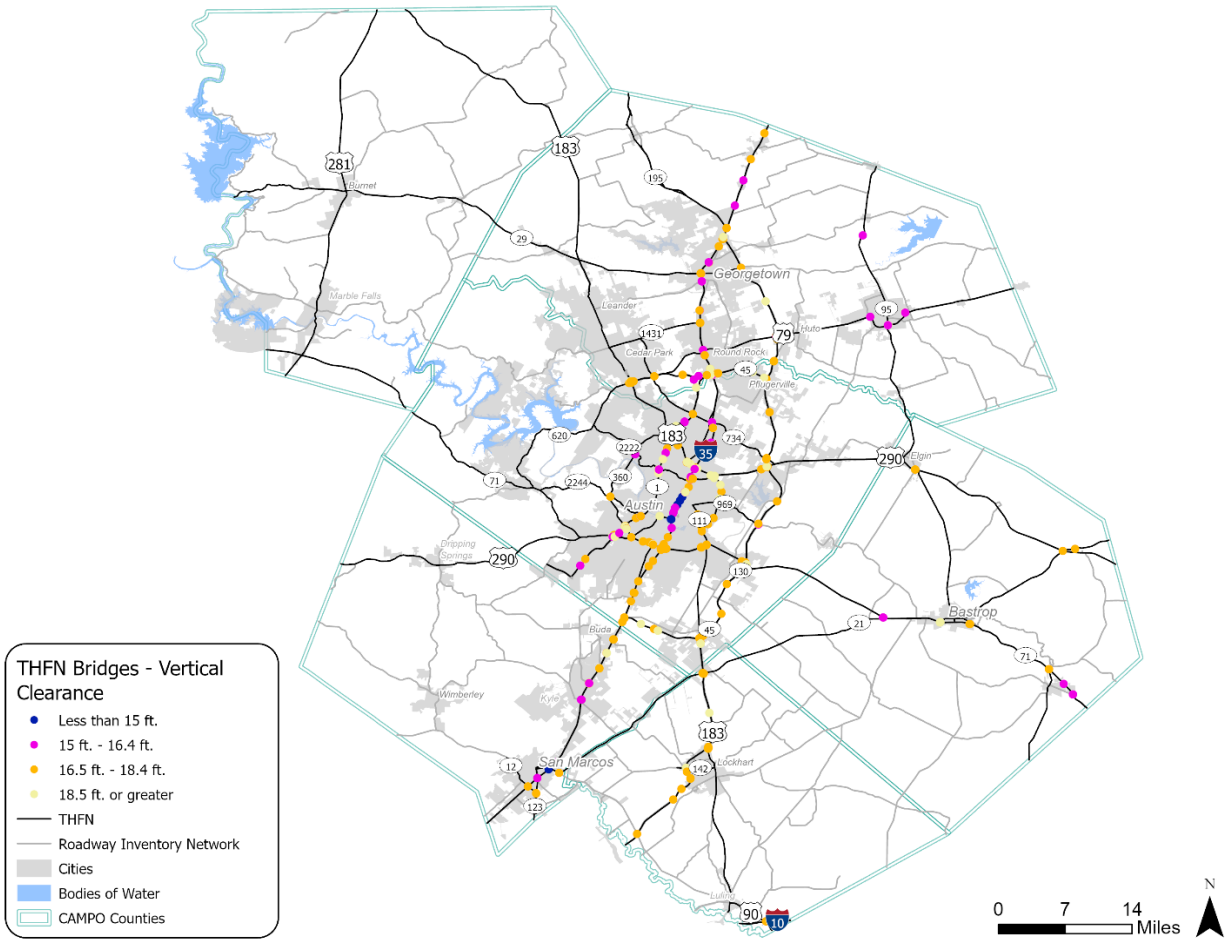
Table 11 summarizes the number of highway and rail underpasses by minimum vertical clearance on the THFN. It is important to note that the totals do not include bridges spanning non-THFN roadways since the vertical clearance standard applies to constructing or reconstructing bridge structures over the THFN. Most bridges (59%) are between 16.5' and 18.4'; 18% meet the 18.5-foot standard for vertical clearance over the THFN. Travis County has the most underpasses on the THFN, with 58% of the total, and has the highest proportion of bridges that meet the vertical clearance standard (21%). Conversely, Hays County has the smallest percentage of bridges that meet the vertical clearance standard at 9% and a greater proportion of bridges under 15 feet (14%). Figure 13 maps the location of the highway and rail underpasses on the THFN.

Table 11: Bridge Vertical Clearance over the Texas Highway Freight Network (THFN)

Vertical Clearance	Bastrop County	Caldwell County	Hays County	Travis County	Williamson County	Total
Less than 15'	0 (0%)	0 (0%)	3 (14%)	5 (3%)	0 (0%)	8 (3%)
15'-16'5"	5 (33%)	0 (0%)	6 (27%)	32 (19%)	18 (28%)	61 (21%)
16'6"-18'5"	8 (53%)	18 (86%)	11 (50%)	97 (57%)	38 (58%)	172 (59%)
18'6" or greater	2 (13%)	3 (14%)	2 (9%)	36 (21%)	9 (14%)	52 (18%)
Total	15 (100%)	21 (100%)	22 (100%)	170 (100%)	65 (100%)	293 (100%)

Source: Texas Department of Transportation (TxDOT). TxDOT Bridges (2021). Available at: https://gis-txdot.opendata.arcgis.com/datasets/txdot-bridges

Figure 13: Bridges Vertical Clearance on the Texas Highway Freight Network (THFN)



Source: Texas Department of Transportation (TxDOT). TxDOT Bridges (2021). Available at: https://gis-txdot.opendata.arcgis.com/datasets/txdot-bridges

Oversize and Overweight Vehicle Permits

Vehicle types and loads over a specific size or weight must apply for oversize/overweight (OS/OW) permits from the Texas Department of Motor Vehicles (TxDMV). Freight vehicles carrying OS/OW loads need to be routed along corridors without impediments to their size, such as low bridges, narrow roads, steep grades, sharp turns, or other restrictions. Overweight vehicles can accelerate wear and tear on roadway networks, so they must be permitted to ensure pavement conditions do not deteriorate under these heavy loads. Some permits carry additional restrictions, such as restricting OS/OW movements during certain hours.

Table 12 summarizes average tonnage and permit counts for single-use trip permits traveling in the CAMPO region for 2022 by county. Super Heavy permits are required for any vehicle exceeding a gross vehicle weight of 250,000 lbs. Overheight permits are required for any vehicle exceeding 16 feet in height. Super Heavy loads had the highest average tonnage and number of permits on roadways in Bastrop County. For overheight loads, the roadways in

Bastrop County had the highest average tonnage and number of permits. Overall, roadways in Hays County saw the highest average tonnage and permits for all types of OS/OW permitted loads.

Table 12: OS/OW Permits Activity in the Capital Area Region, 2022

Permit Type	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	Williamson County
Super Heavy Permit Tonnage	5,552	2,012	3,400	2,828	2,927	4,230
Super Heavy Permit Count	39	15	25	22	22	32
Overheight Permit Tonnage	4,843	3,112	2,128	1,071	1,271	2,140
Overheight Permit Count	98	102	55	33	30	52
All OS/OW Permits Tonnage	44,030	27,936	42,499	88,251	61,435	73,081
All OS/OW Permits Count	1,261	1,013	1,338	2,712	1,966	2,520

Source: TxDMV, Oversize/Overweight Permits Database, 2022; Analysis by the Texas A&M Transportation Institute (TTI).

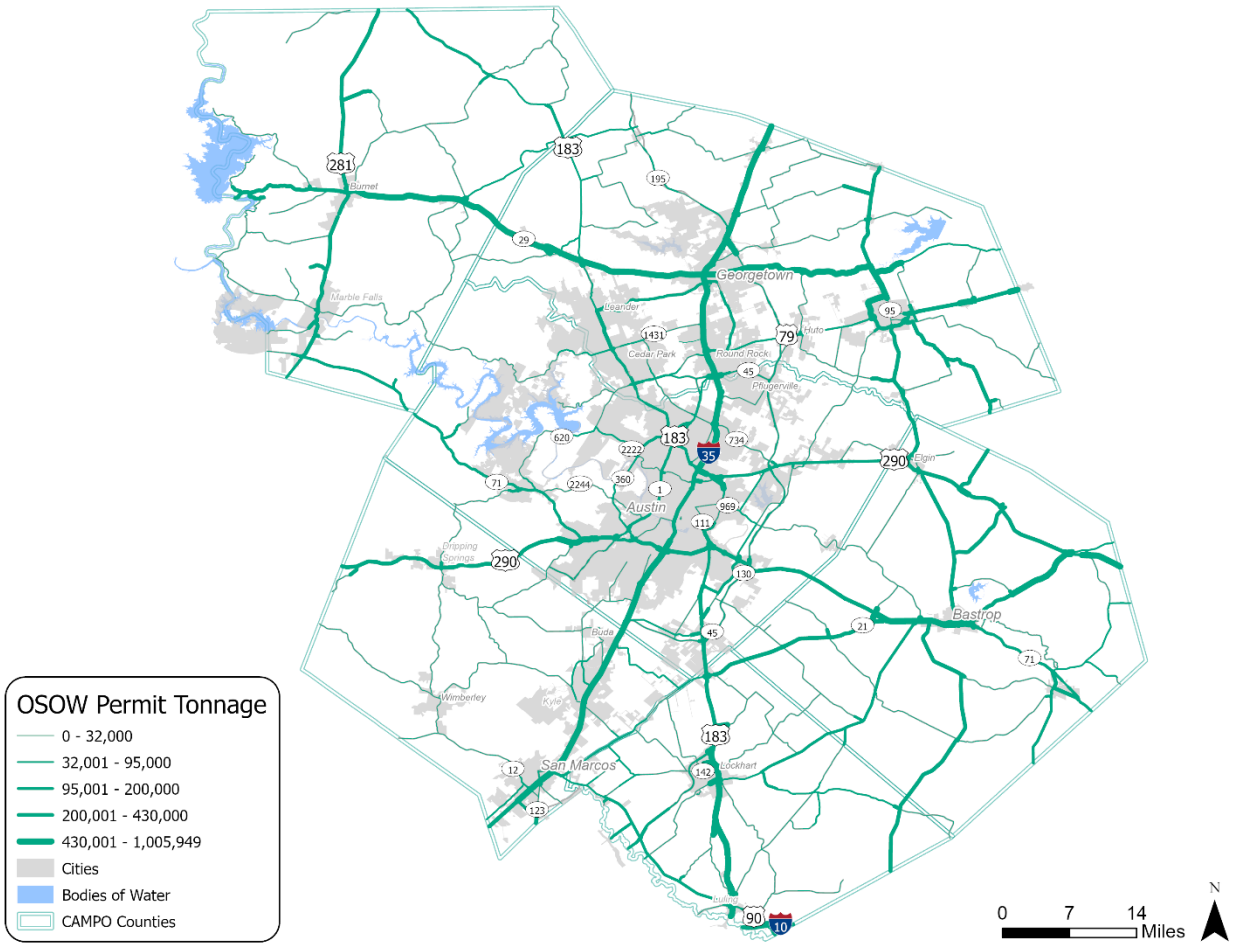
Figure 14 shows the tonnage for all OS/OW permits in the CAMPO region in 2022. Clearly, OS-OW permitted trucks are using major roadways across the region. Major north-south routes with high levels of OS/OW permit activity include:

- IH 35, notably with less tonnage directly within downtown Austin between US-183 and US-290
- US-183, particularly between Lockhart and Luling in Caldwell county
- US 281 in Burnet County
- SH 95, which connects the cities of Bastrop, Elgin, and Taylor in Bastrop and Williamson counties

Major east-west routes include:

- US-290, which passes through southern Austin and connects the cities of Dripping Springs, Austin, and Bastrop
- SH 29, which goes between the cities of Burnet and Georgetown
- SH 71, especially between US-183 and US-290 near the city of Bastrop

Figure 14: Tonnage Transported by all Oversize/Overweight (OS/OW) Permitted Loads, 2022



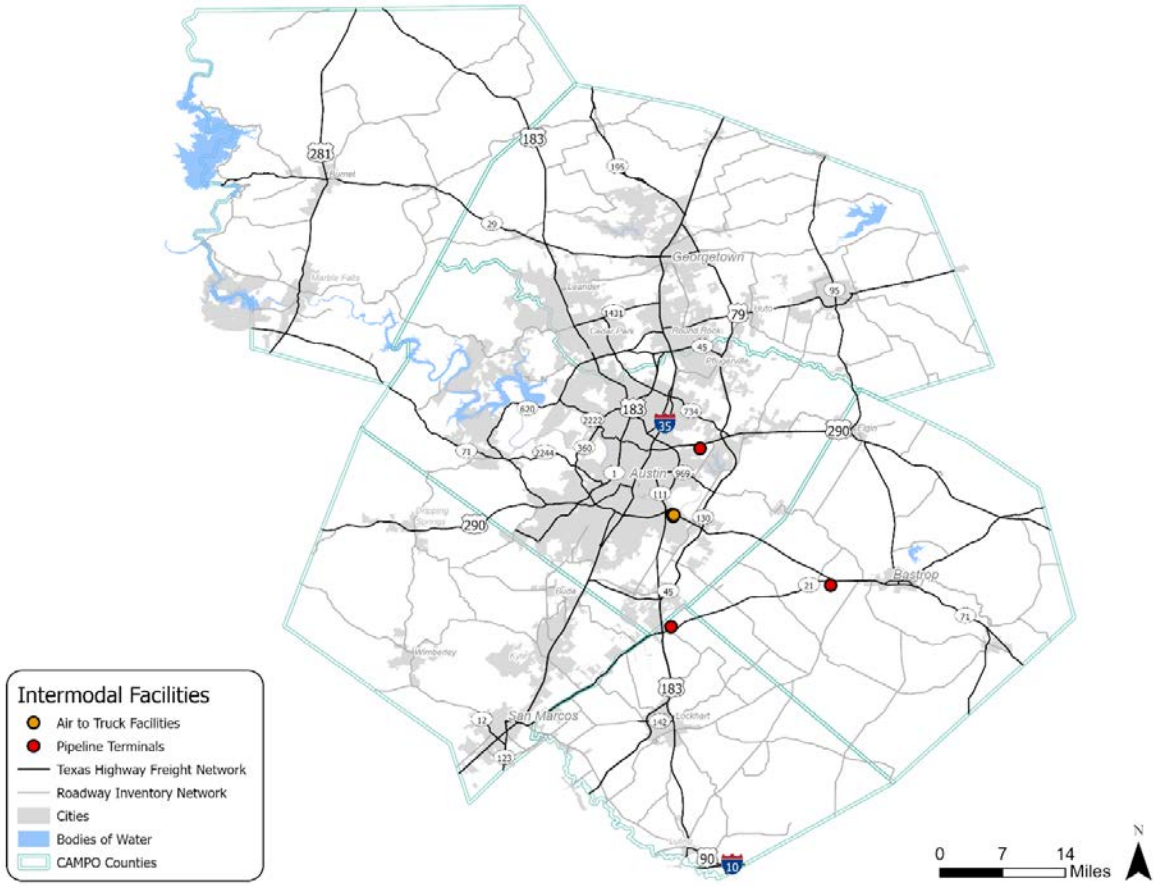
Source: TxDMV, Oversize/Overweight Permits Database, 2022; Analysis by the Texas A&M Transportation Institute (TTI).

Intermodal Freight Facilities

Intermodal facilities allow goods shipped by one transportation mode to be transferred to another. Major intermodal facilities are reported to the FHWA, which maintains a database of all facilities in the U.S. The reported facilities include pipeline terminals, marine roll-on/roll-off facilities, rail trailer-on-flatcar or container-on-flatcar (TOFC/COFC), and air-to-truck facilities.

Figure 15 shows all seven (7) facilities within the CAMPO region comprised of three (3) pipeline terminals and four (4) air-to-truck facilities. Notably, the region lacks any Rail TOFC/COFC facilities despite having a moderate railway infrastructure. All air-to-truck facilities are located at the ABIA. The three pipeline terminals are located in Travis, Bastrop, and Caldwell counties. These terminals store crude and refined petroleum products for transfer from pipelines to rail and trucks.

Figure 15: Intermodal Freight Facilities



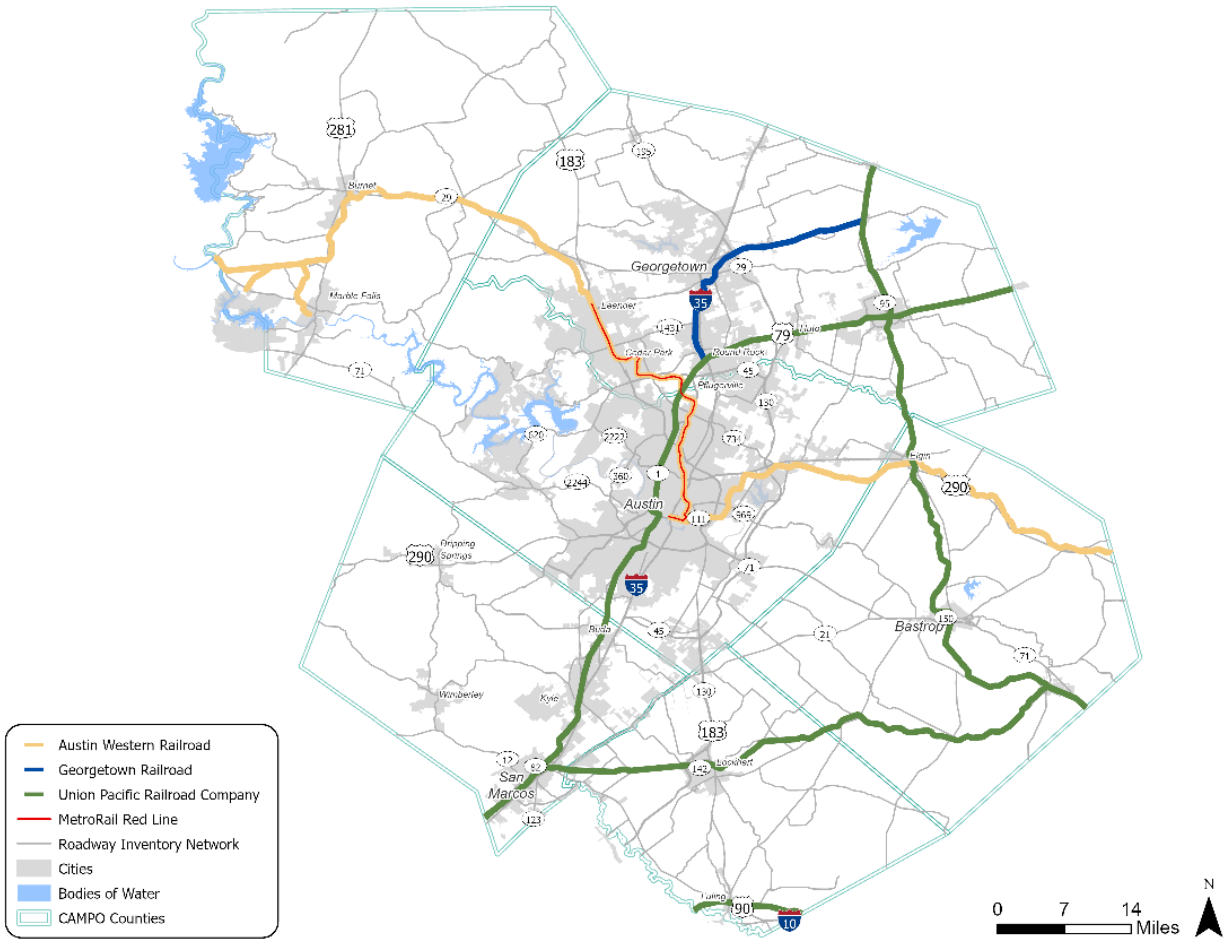
Note: The air-to-truck facilities are in close proximity to each other and appear as overlapping dots due to the extents of the map.
Source: U.S. Department of Transportation (USDOT), Bureau of Transportation Statistics (BTS). Open Data Catalog. Available at: https://geodata.bts.gov/

Rail Assets

Rail is an important element of the multimodal network in the CAMPO region that provides freight transport over longer distances without congesting highways. The CAMPO region is served by Union Pacific (UP), a Class I railroad, and Class III freight railroads. [11] Figure 16 shows the existing active freight rail system within the CAMPO region. Summarized in Table 13, UP operates 260 miles of Class I railroads in the region. In addition, the Austin Western Railroad, known as the Austin Area Terminal Railroad before 2017, and the Georgetown Railroad each operate 156 and 37 miles of Class III railroads, respectively. The Austin Western Railroad also shares 32 miles of track with the Red Line, a passenger rail service operated by the Capital Metropolitan Transportation Authority (CapMetro).

[11] The Surface Transportation Board (STB) classifies rail carriers based on their annual operating revenues. Class I carrier operating revenues are greater than $943.9 million annually, while Class III carriers have annual operating revenues below $42.4 million. https://www.stb.gov/reports-data/economic-data/

Figure 16: Active Freight Rail Networks in the Capital Area Region



Source: Texas Department of Transportation (TxDOT). Open Data Portal. Texas Railroads. Available at: https://gis-txdot.opendata.arcgis.com/datasets/texas-railroads

Table 13: Active Freight Track Miles by Class and Operators

Railroad	Standard Carrier Alpha Code	Railroad Class	Total Miles
Austin Western Railroad	AWRR	Class III	156
Georgetown Railroad	GRR	Class III	37
Union Pacific Railroad	UP	Class I	260
Not Specified	-	-	22
Total Miles			475

Source: Texas Department of Transportation (TxDOT). Open Data Portal. Texas Railroads. Available at: https://gis-txdot.opendata.arcgis.com/datasets/texas-railroads/explore?location=30.965836%2C-100.077132%2C6.55

Within the CAMPO area, there are 47 at-grade crossings that intersect the on-system roadway network. As shown in Table 14, Williamson County has 16 on-system railroad crossings, the most of the six counties, which make up around 34% of all railroad crossings in the study region. With 11 railroad crossings (23%), Bastrop County has the second-highest number in the study area.

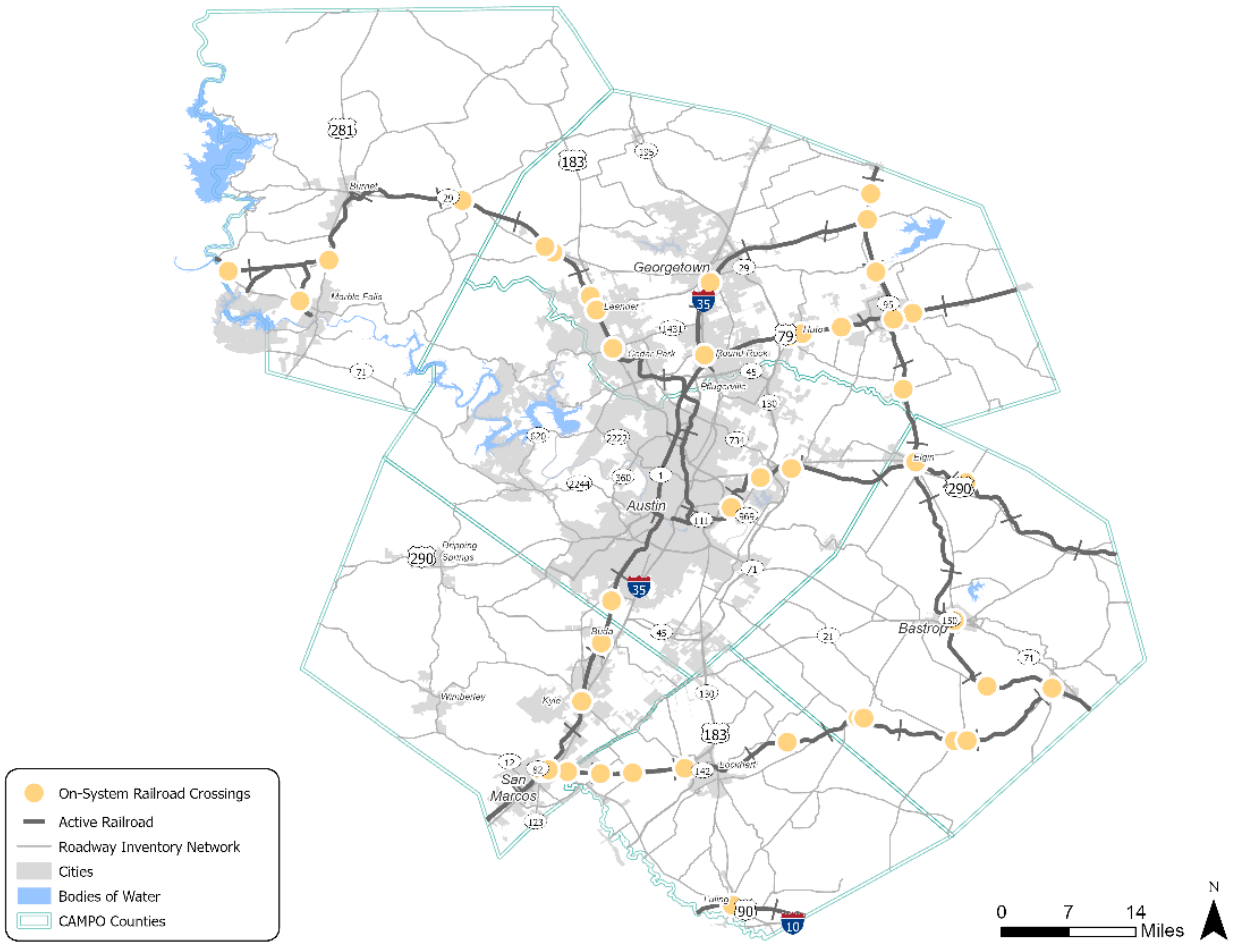
Table 14: Summary of On-System Railroad Crossings by County

County	Number of At-Grade Crossings
Bastrop County	11
Burnet County	5
Caldwell County	5
Hays County	6
Travis County	4
Williamson County	16
Total	47

Source: Federal Railroad Administration (FRA), Highway-Rail Crossing Inventory Data. Available at: https://safetydata.fra.dot.gov/officeofsafety/publicsite/downloaddbf.aspx.

Figure 17 maps the locations of the at-grade crossings that intersect the on-system roadway network.

Figure 17: At-Grade Highway-Rail Crossings on the On-System Roadway Network

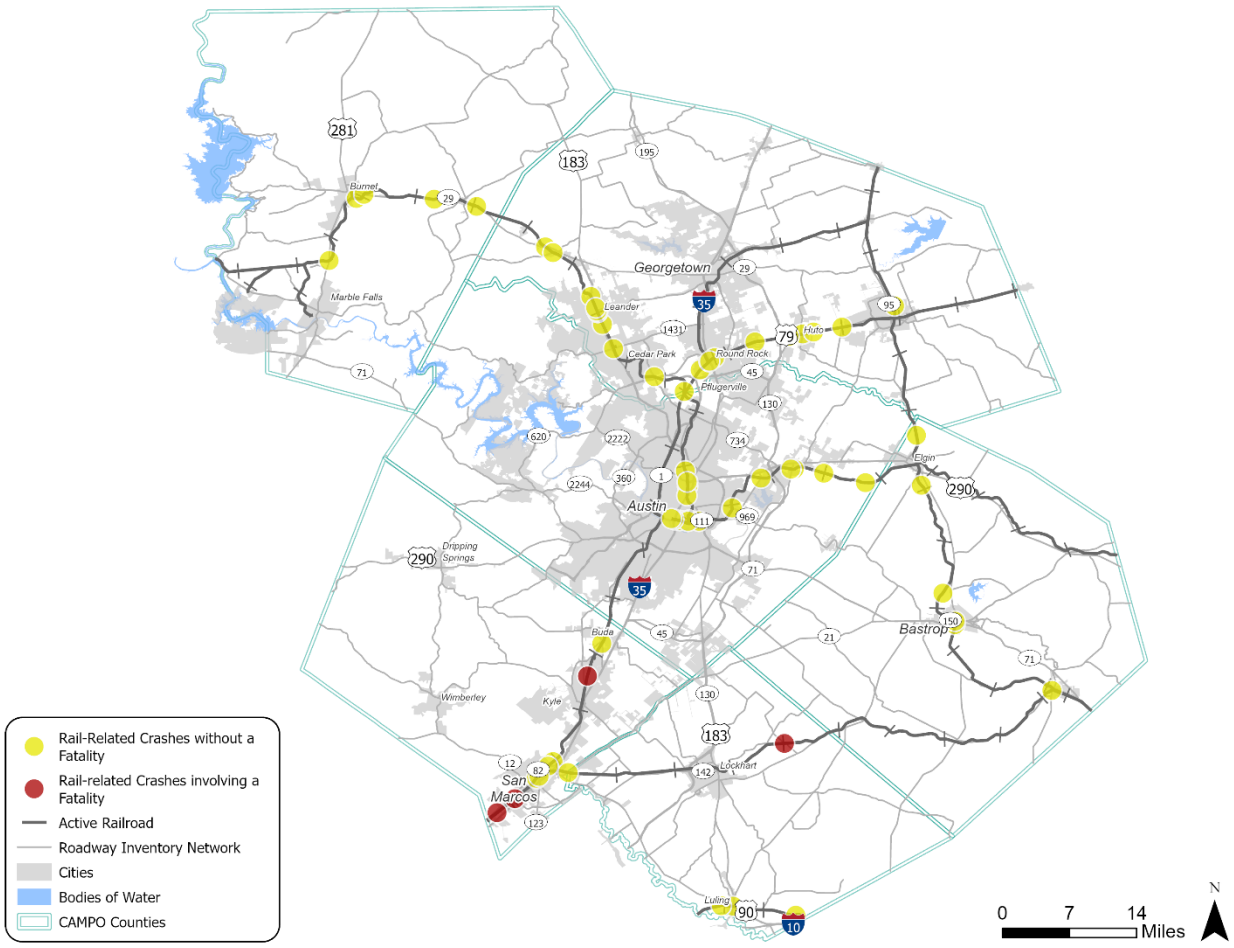


Source: Federal Railroad Administration (FRA), Highway-Rail Crossing Inventory Data. Available at: https://safetydata.fra.dot.gov/officeofsafety/publicsite/downloaddbf.aspx

Rail System Performance

Figure 18 shows the location of 132 rail-involved crashes in the CAMPO region. A crash is rail-involved if it is related to a train, railcar, or a rail crossing. Geographically speaking, Travis County, Williamson County and Hays County each account for 37%, 31%, and 19% of the total crashes in the region, respectively.

Figure 18: Rail-related Crashes in the Capital Area Region, 2018- 2022



Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Table 15 shows the total number of individuals involved in rail-related crashes by severity. From 2018 to 2022, a total of 292 persons were involved in rail-related crashes. Of the 60 persons injured (nearly 21% of total), 5% were seriously injured; during the period there was a total of 4 fatalities. Three fatalities were located in Hays County and one in Caldwell County. Overall, most persons involved in rail-related crashes were not injured (73% of total).

Table 15: Injury Type and Associated Headcounts for Rail-Related Crashes located at At-Grade Crossings, 2018 – 2022

Severity Type	2018	2019	2020	2021	2022	Total
Non-Suspected Serious Injury Count	4	0	3	4	3	14
Possible Injury Count	23	9	1	7	3	43
Suspected Serious Injury Count	1	0	1	1	0	3
Total Injury Count	**28**	**9**	**5**	**12**	**6**	**60**
Crash Death Count	1	0	2	0	1	4
Not Injured Count	38	45	21	83	27	214
Unknown Injury Count	1	3	1	5	4	14
Total Personnel Involved In Crash	**68**	**57**	**29**	**100**	**38**	**292**

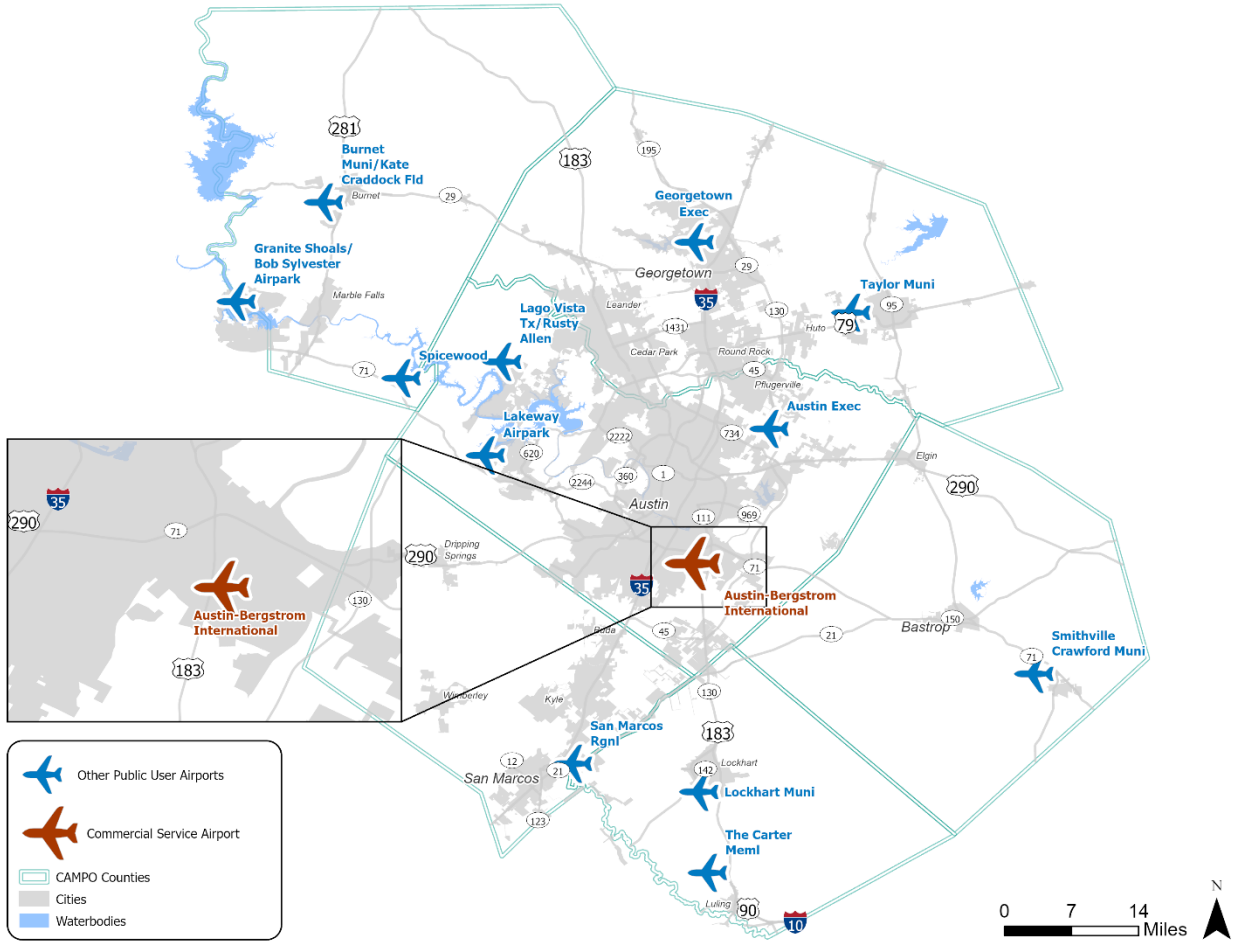
Source: Texas Department of Transportation (TxDOT). Crash Records Information System (CRIS) Query. Available at: https://cris.dot.state.tx.us/public/Query/app/home

Airport Assets

Commercial Service and Public-Use Airports

Texas has one of the largest state airport systems with nearly 400 public-use airports and 24 commercial service airports. As shown in Figure 19, there are 13 public-use airports in the CAMPO area. ABIA, considered part of the National Multimodal Freight Network (NMFN) and TMFN, is the only commercial service airport in the region. In addition, the San Marcos Regional Airport is located between the Austin and San Antonio metropolitan areas and is the designated reliever airport for the commercial airports situated there.

Figure 19: Public Use and Commercial Service Airports



Source: Federal Aviation Administration (FAA). Airports. Available at: https://adds-faa.opendata.arcgis.com/datasets/faa::airports-1/explore?location=1.244470%2C-43.129815%2C1.84

Airport Conditions and Performance

Due to the substantial weight of aircraft resulting from a fuel load and cargo, runway length is critical for air cargo plane takeoff. Generally, 8,000 feet is required for most large domestic cargo aircraft and 10,000 feet for most international operations.[12] With two runways, the longest of which has a maximum length of 12,248 feet and a width of 150 feet, ABIA is the only airport qualified for the runway length requirements for large cargo aircraft. Other airports in the CAMPO region may handle on-demand cargo or package service via small aircraft; however, this data is generally not reported. Some of these airports may handle small amounts of cargo or provide feeder service to larger airports.

ABIA is five miles southeast of the City of Austin, next to SH 71 to the north, U.S. 183 to the west, and within minutes of IH 35. This convenient location allows the airport to transport cargo easily

[12] https://ftp.txdot.gov/pub/txdot/move-texas-freight/resources/texas-delivers-2050.pdf

via ground transportation. The airport has two parallel runways: a 12,248-foot 17R/35L runway and a 9,000-foot 17L/35R runway.[13] Aeroterm and the City of Austin's Department of Aviation DOA operate the air cargo facilities at ABIA, located on the northeast side of Runway 17R.[14]

- Aeroterm is a property investment firm. It has 51,000 square feet of freight facility space (building #6040). The City of Austin's DOA, United Parcel Service (UPS), Air General, and Worldwide Flight Services (WFS) all have facility leases from Aeroterm.
- The City of Austin's DOA manages Buildings #6029, #6030, and #6035. The total area adds up to 194,500 square feet. FedEx, DHL, UPS, and certain non-cargo activity companies lease the space.

As one of the major commercial airports in Texas, ABIA handled approximately 260 million pounds of cargo in 2022, including both on-flight freight enplaned and mail enplaned. Table 16 summarizes enplaned cargo that arrived at and departed from ABIA. As the trend shows, from 2018 to 2022, the enplaned mail fluctuated slightly and reached its peak weight in 2019. The enplaned freight generally indicates an increasing trend but decreased slightly between 2018 and 2019; arriving and departing freight grew by an average rate of 8% per year between 2020 and 2022. Additionally, ABIA appeared to have more arrival freight and mail than departure during the reporting period.

Table 16: ABIA Enplaned Freight and Mail, 2018 - 2022

Type	2018	2019	2020	2021	2022
Arrival-Mail	5,609,865	8,289,574	5,329,591	6,985,945	5,448,213
Departure-Mail	2,424,463	2,635,866	2,186,154	1,899,467	311,540
Arrival-Freight	115,733,867	113,431,549	124,655,767	126,293,710	135,722,607
Departure-Freight	85,597,381	87,532,956	90,445,778	102,168,878	118,340,558
Total Enplaned (lbs.)	209,365,576	211,889,945	222,617,290	237,348,000	259,822,918

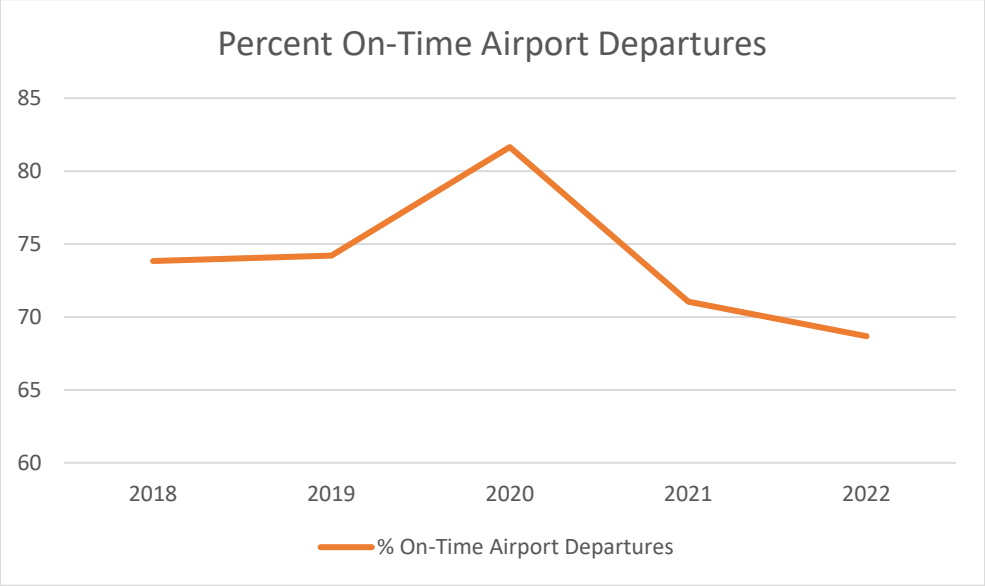
Source: United State Department of Transportation (USDOT). Bureau of Transportation Statistics (BTS). T-100 Market (all-carrier). 2018-2022.Available at: https://www.transtats.bts.gov/Fields.asp?gnoyr_VQ=FMF

ABIA is the only airport in the CAMPO region that is required to report performance data to the FAA. Figure 20, Figure 21, and Figure 22 show the percent on-time departures, average departure delay, and the taxi-in delay measures generated from Aviation System Performance Metrics (ASPM) database, respectively. The calendar year 2020 shows an abnormal trend as compared to other years. The percent on-time departure is the highest, and departure and taxi-in delays were the lowest for 2020. This is likely due to the reduction in flights caused by COVID-19. The on-time departure rate dropped sharply after 2019, likely due to the labor shortages and early retirement phenomena among workers in the transportation industry influenced by the pandemic.[15] Since 2020, the figures show declines in the percentage of on-time departures and increases in departure and taxi-in times, which suggest that ABIA is getting

[13] https://ftp.dot.state.tx.us/pub/txdot-info/avn/airport-directory-list.pdf
[14] https://www.austintexas.gov/sites/default/files/images/Airport/business/AUS_Master_Plan/c2_Master Plan.pdf
[15] https://ftp.txdot.gov/pub/txdot/move-texas-freight/resources/texas-delivers-2050.pdf

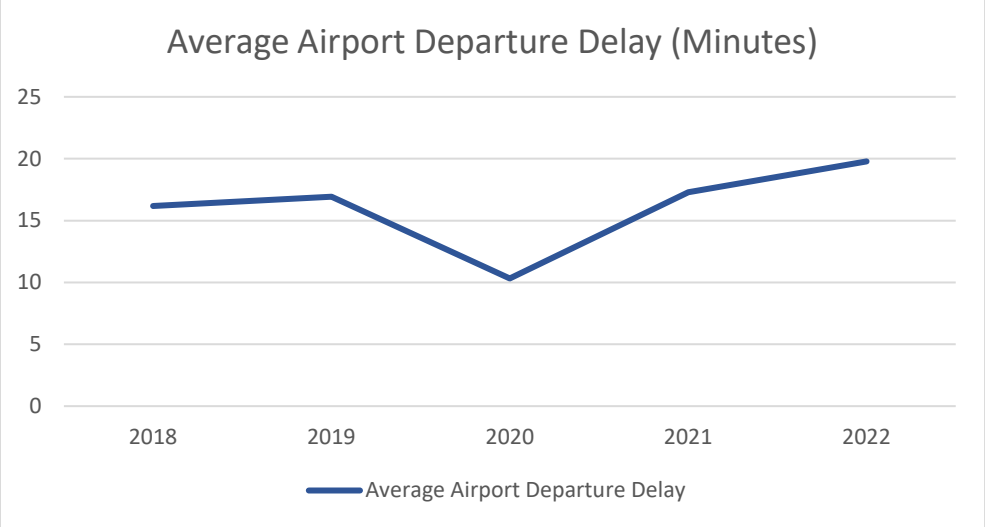
more congested; the delays are also attributed to a shortage of airport staff to handle security screening and baggage.

Figure 20: Percent On-Time Airport Departures at ABIA, 2018 - 2022



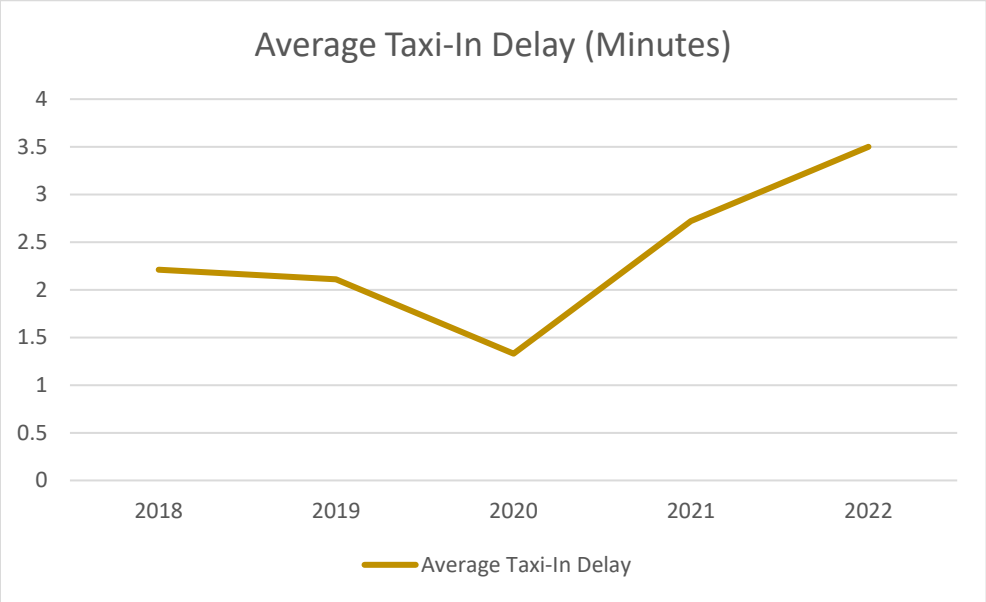
Source: Federal Aviation Administration (FAA). Aviation System Performance Metrics (ASPM) database. Available at: https://aspm.faa.gov/apm/sys/main.asp

Figure 21: Average Airport Departure Delay at ABIA, 2018 - 2022



Source: Federal Aviation Administration (FAA). Aviation System Performance Metrics (ASPM) database. Available at: https://aspm.faa.gov/apm/sys/main.asp

Figure 22: Average Taxi-In Delay at ABIA, 2018 - 2022



Source: Federal Aviation Administration (FAA). Aviation System Performance Metrics (ASPM) database. Available at: https://aspm.faa.gov/apm/sys/main.asp

Pipeline Assets

Pipelines are involved in many aspects of supply chain operations for the petroleum industry – from initial extraction to refinement, processing, storage, and last-mile distribution to customers. While most products are transported by gathering and transmission pipelines, pipelines interface with other modes (i.e., truck rail and water) on the multimodal network.

Table 17 breaks down pipeline mileage by the major commodity types transported by petroleum industry supply chains. Texas pipeline systems transport crude oil, natural gas, and hydrocarbon gas liquids (HGLs) from sources of energy production,[16] traversing the CAMPO region to reach refineries and petrochemical complexes on the Gulf Coast. These transmission pipelines tend to span larger areas with fewer branches and terminals, which is the case in the CAMPO region. Petroleum product pipelines, in turn, transmit refined products such as motor gasoline and various fuels to urbanized areas where product is stored and distributed from terminals for last-mile deliveries by truck to fueling stations, industrial establishments, airports, and other consumption points. In addition, processed, or dry natural gas is delivered directly to homes and businesses via distribution pipelines.

Travis and Bastrop counties are traversed by the most pipeline mileage in the region consisting primarily of natural gas and petroleum product pipelines.

[16] Hydrogen gas liquids (HGLs) are extracted at natural gas processing plants to produce natural gas plant liquids such as propane and butane used for heating or cooking. Ethane is a key natural gas liquid that is converted to ethylene and propylene at "cracking" plant facilities. These products are feedstocks for petrochemical manufacturing to make plastics and synthetic rubber.

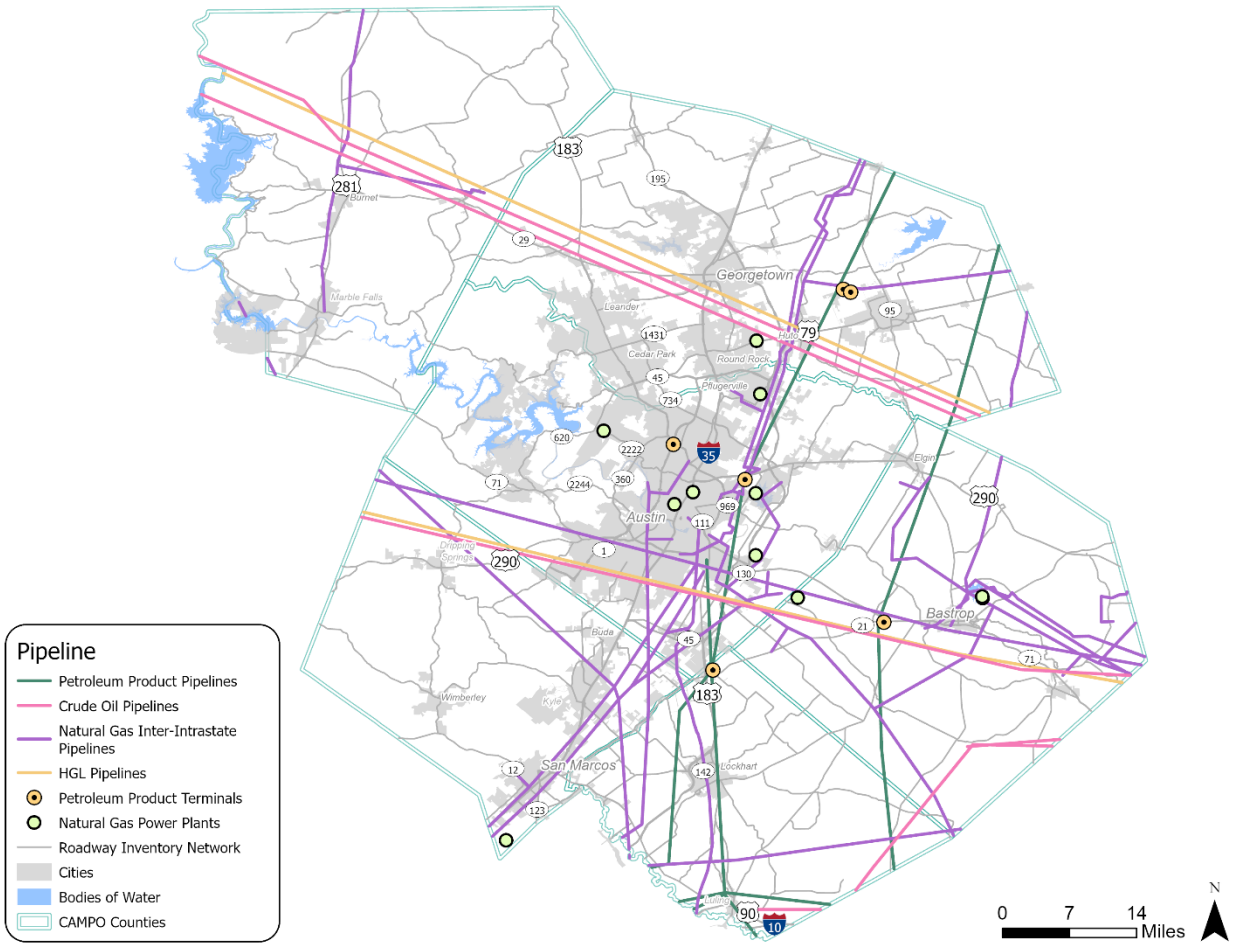
Table 17: Pipeline Mileage by Commodity Type

Type	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	Williamson County
Crude Oil	105 (19%)	156 (50%)	32 (10%)	71 (15%)	71 (12%)	156 (32%)
Natural Gas	249 (44%)	80 (25%)	85 (27%)	266 (56%)	282 (46%)	116 (24%)
Petroleum Products	137 (24%)	0 (0%)	200 (63%)	71 (15%)	188 (31%)	143 (29%)
Hydrocarbon Gas Liquids	71 (13%)	77 (25%)	0 (0%)	71 (15%)	71 (12%)	77 (16%)
Total	562 (100%)	313 (100%)	318 (100%)	478 (100%)	612 (100%)	493 (100%)

Source: U.S. Energy Information Administration (EIA). US Energy Atlas. Available at: https://atlas.eia.gov/

Figure 23 maps the pipeline networks in the CAMPO region, power plants, and product terminals. Several natural gas power plants are within Austin limits, with a few other plants in Bastrop and Hays counties. In addition, the map shows the location of product terminals. The single terminal within Austin city limits with no obvious pipeline connection is an asphalt plant receiving product deliveries by rail and truck. The other terminals shown in Travis, Williamson, Bastrop, and Caldwell counties serve regional demand for fuel.

Figure 23: Pipeline Infrastructure in the Capital Area Region



Source: U.S. Energy Information Administration (EIA). US Energy Atlas. Available at: https://atlas.eia.gov/

Equity

The equity analysis in this section identifies the locations of historically marginalized communities in the CAMPO region in order to better understand where freight activity is likely to impact these populations. Consistent with the definitions in CAMPO's 2045 Regional Transportation Plan, census tracts representing equity focus areas were identified based on socioeconomic characteristics. The definitions include any census tract with 50% of its population earning less than 80% of the county median family income and/or having at least 25% of its population earning an income below the national poverty threshold or any census tract with 50% of its population not identifying as non-Hispanic white.

Table 18 identifies the equity populations in the CAMPO region by county. Across the region, the population living in equity census tracts represented nearly 30% of the overall population of 2.3 million. Travis County has the highest number of people living in equity census tracts and by

proportion (33% of the county total); Hays County follows closely with the second highest proportion of its population living in equity census tracts (32%).

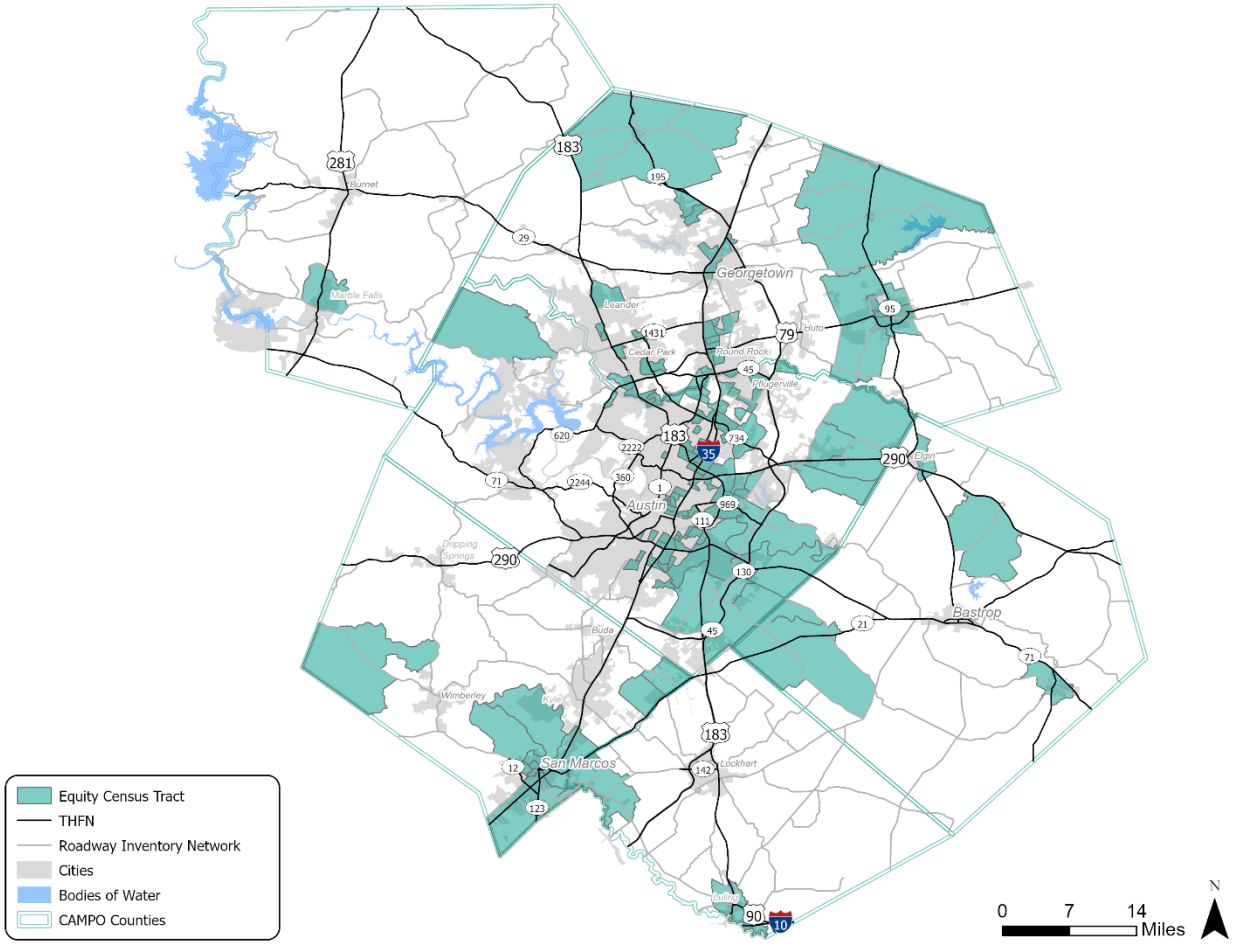
Table 18: Equity Populations in the Capital Area Region

Equity Populations	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	William. County
Minority Population (non-Hispanic white)	35,848	7,078	13,725	54,870	428,955	166,538
Below County Median Income Population	12,398	6,466	5,578	29,925	181,992	84,347
Below National Poverty Line Population	10,089	3,403	5,737	30,917	139,464	36,983
Equity Census Tracts	6	1	3	18	98	35
# of Census Tracts	21	15	11	46	290	135
Equity Tract Population	**27,297**	**4,079**	**10,895**	**75,176**	**424,206**	**125,655**
Total Population	**94,887**	**48,424**	**45,286**	**234,573**	**1,267,795**	**591,759**

Source: US Census Bureau 2021 5-year American Community Survey. Available at: https://www.census.gov/

Figure 24 maps the location of the equity census tracts. Where the tracts intersect, the THFN highlights areas where concentrated freight activity can come near equity populations. Nearly 30% of the total mileage on the THFN is intersecting the equity census tracts. Frequent truck movements along those corridors can impact the quality of life for these communities from increased exposure to tailpipe emissions, noise, and pollution.

Figure 24: Equity Populations in the Capital Area Region



Source: US Census Bureau 2021 5-year American Community Survey. Available at: https://www.census.gov/

Table 19 summarizes the overlap between certain freight infrastructure assets and metrics discussed in previous sections with the equity and non-equity census tracts. If a piece of infrastructure/metric fell within a census tract, then the entire population of that census tract was considered to be affected by the infrastructure/metric. Proximity to freight infrastructure has positive and negative externalities for local populations that can be difficult to balance. Freight infrastructure is often associated with increased exposure to pollutants, noise, and safety risks and may create access barriers (e.g., rail lines with limited crossings) or decrease the utility of other infrastructure (e.g., roads with heavy truck volumes.) However, freight infrastructure is a vector for economic activity in terms of the investment that can be leveraged to improve local infrastructure and create jobs.

Truck exposure is heavily skewed towards equity populations. Despite having less THFN mileage per population, equity tracts have a higher average AADTT, higher average TTTR, a significantly higher truck Vehicle Miles Traveled (VMT) per capita (around 35%), and nearly twice as many truck-involved accidents per capita including higher numbers of fatal and serious injury crashes.

Railroad mileage and crossings per equity and nonequity populations are very similar, with nonequity populations having only slightly more mileage and crossings per capita. Pipeline mileage is skewed towards nonequity populations with around 5 additional miles per 10,000 people in nonequity tracts. Comparison of pipeline terminals and power plants is somewhat difficult due to the low numbers of terminals in the region. For instance, three petroleum product terminals are located in equity and nonequity tracts each. However, the total nonequity population exposed to terminals is more than four times larger than the equity population. Eight natural gas power plants are located in equity tracts and 16 are located in nonequity tracts mirroring the population exposure which is about twice as large for nonequity tracts as equity tracts.

Table 19: Summary of Freight Equity Indicators for Equity and Nonequity Census Tract Populations

Freight Equity Indicators	Equity Census Tracts	Nonequity Census Tracts
THFN Mileage per 10,000 population	5.18	5.66
Mileage weighted AADTT on THFN	4,787	3,257
Mileage weighted TTTR on THFN	4.44	3.96
Truck VMT per Capita on THFN	905	672
Truck Involved Crashes per 10,000 population	48.4	27.6
Fatal and serious injury Truck-Involved crashes per 10,000 population	2.8	1.9
Railroad Mileage per 10,000 population	7.1	8.7
Railroads Crossings per 10,000 population	11.8	11.9
Pipeline Mileage per 10,000 population	11.6	16.0
Population near a Petroleum Product Terminals	4,505	19,076
Population near a Natural Gas Power Plant	37,056	74,301

Source: Cambridge Systematics Analysis, 2023

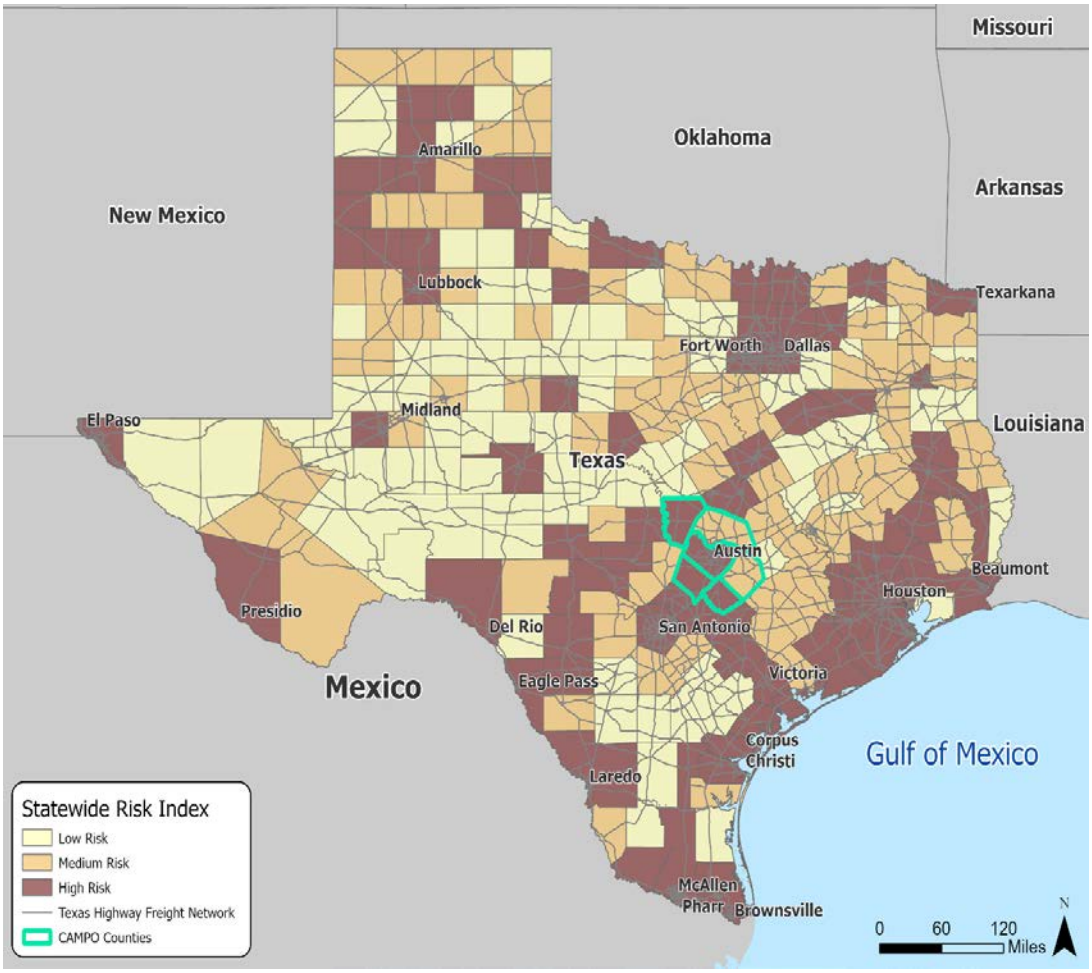
Resiliency

Resiliency needs on the THFN were evaluated for Texas Delivers 2050 using the Statewide Risk Index (SRI), which scores the level of likely impacts for various natural disaster risks. The SRI was calculated for each county in Texas based on the National Risk Index (NRI) provided by Federal Emergency Management Agency (FEMA). Natural disasters include coastal flooding, cold

waves, drought, earthquakes, hail, heat waves, hurricanes, ice storms, landslides, lightning, riverine flooding, strong wind, tornados, wildfire, and winter weather.

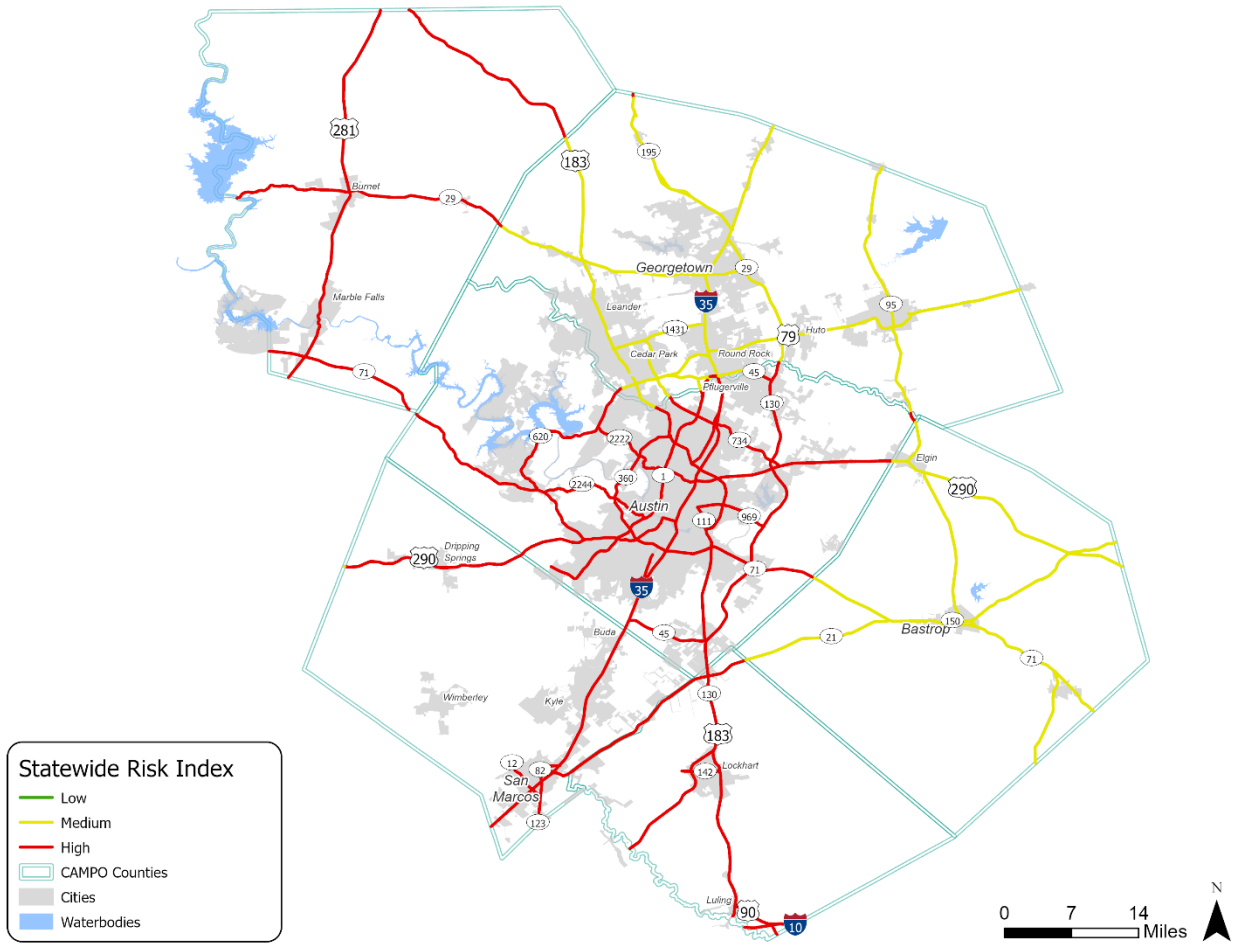
Figure 25 shows the hazard risk index for each county in Texas. The risk is categorized into Low, Medium, and High. Overall, 84 out of the 254 counties in Texas are classified as having high-hazard risk, and 85 are low-hazard risk. As the map shows, counties along the coast are likely more vulnerable than inland counties, and most major cities in Texas are located in high-hazard risk counties. In the CAMPO area, Burnet County, Travis County, Hays County, and Caldwell County are classified as having high hazard risk, while Williamson County and Bastrop County are characterized as having medium hazard risk. Figure 26 shows the THFN classified based on the SRI in the CAMPO area. As the figures show, all segments of THFN within the CAMPO area are classified as either medium or high-risk index. Approximately 526 miles, accounting for more than 61% of total THFN in the area, have a high hazard risk index.

Figure 25: State Hazard Risk Index for Texas Counties



Source: TranSystems analysis of FEMA National Risk Index (NRI) data prepared for Texas Delivers 2050.

Figure 26: Texas Highway Freight Network (THFN) Classified by the Statewide Risk Index



Source: Prepared by Cambridge Systematics based on Transystems analysis of FEMA National Risk Index (NRI) data.

Freight Trip Origins and Destinations

Developed for Texas Delivers 2050, the Texas Truck Analysis Tool uses INRIX commercial vehicle GPS data from 2022 to report the origin and destination flows for truck movements in the state. As outlined in Table 20, there is an average of 43,860 truck trips entering and leaving the CAMPO region each day. Approximately one-third of these trips originate or end in Travis County, followed by Williamson and Hays counties. Caldwell, Bastrop and Burnet counties have the smallest share of truck trips, accounting for about 7%, 6%, and 6% of daily trips, respectively.

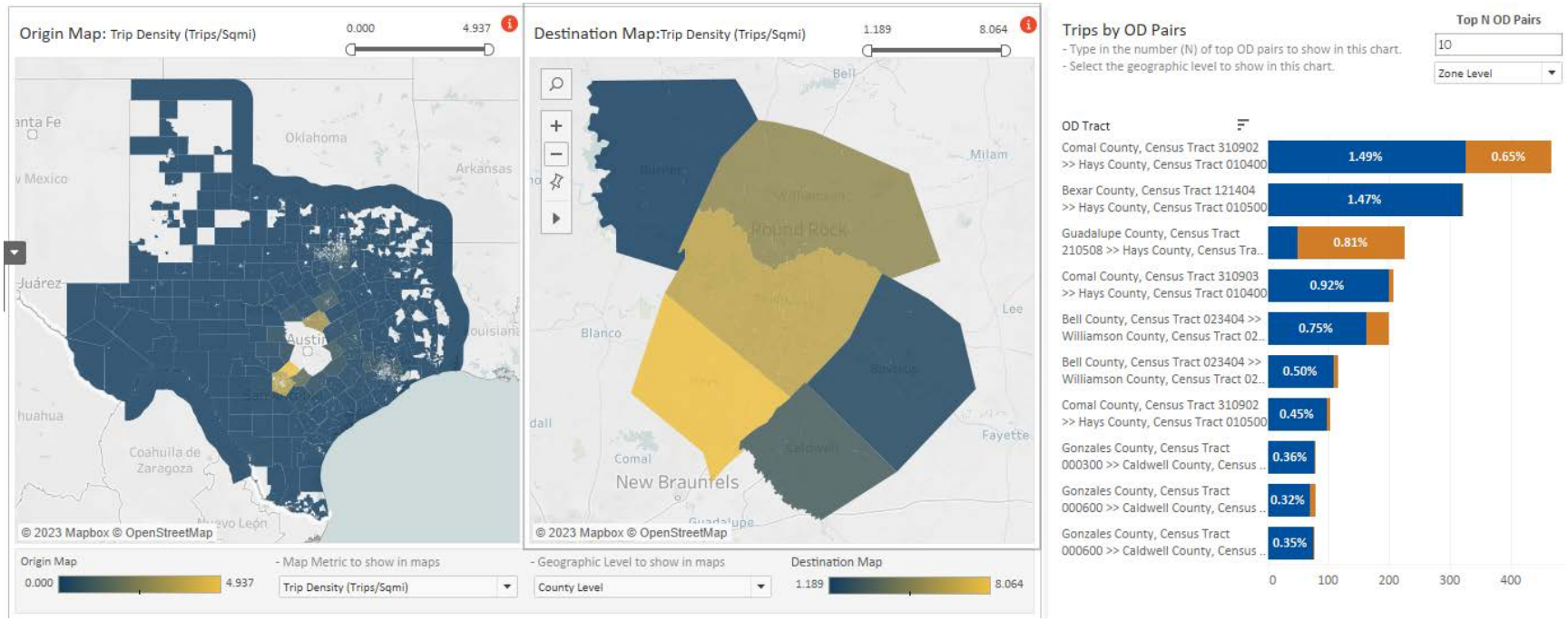
Table 20. Total Inbound and Outbound Trip Trips by County

County	Average Daily Trips (Inbound & Outbound)
Bastrop	2,681 (6%)
Burnet	2,522 (6%)
Caldwell	2,902 (7%)
Hays	9,871 (23%)
Travis	13,349 (31%)
Williamson	11,749 (27%)
Total	43,074 (100%)

Source: Texas Department of Transportation (TxDOT). Texas Truck Analysis Tool (2022).

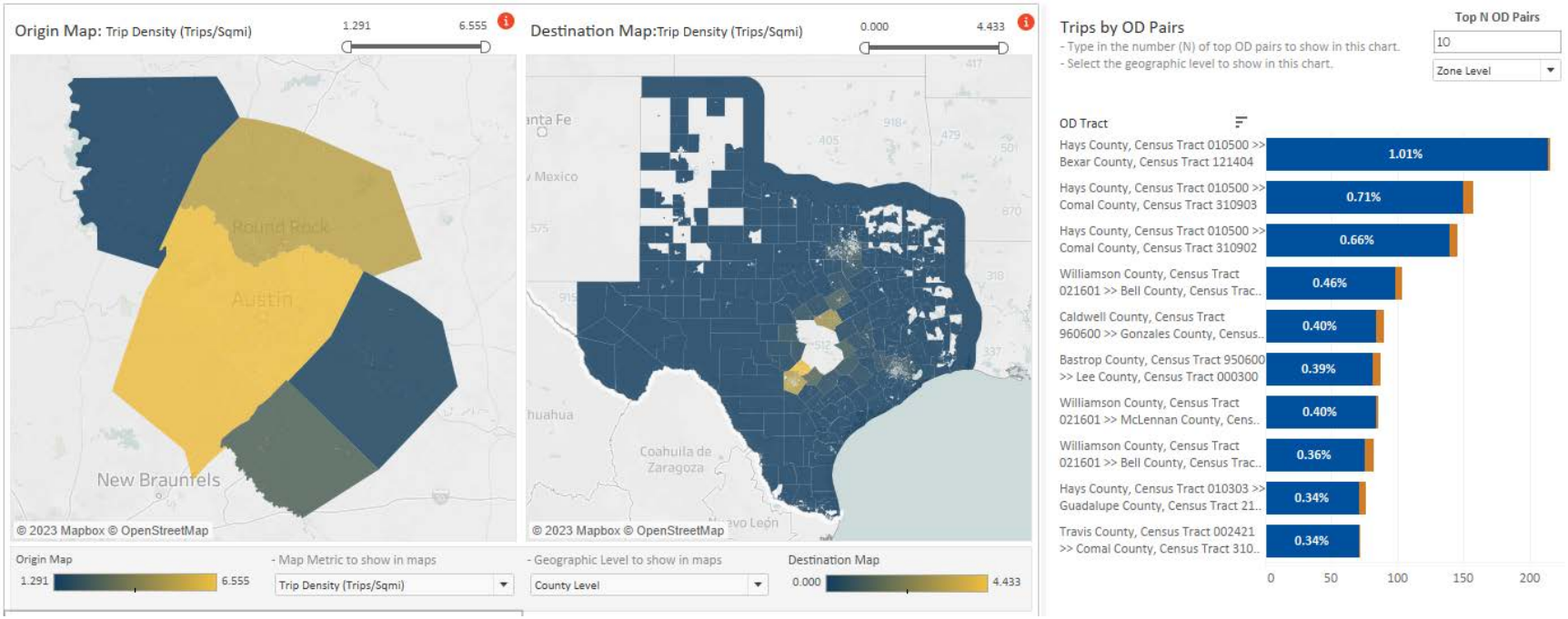
Figure 27 and Figure 28 shows the dashboard from the Texas Truck Analysis tool displaying information on the daily trip flows between the rest of Texas and the CAMPO region. For both inbound and outbound flows, most truck trips are associated with the counties surrounding the CAMPO region such as Bell County to the north and Comal and Bexar counties to the south. The figures show the top 10 origin-destination (O-D) pairs. The top 5 inbound and outbound O-D pairs include Comal, Bexar, Guadalupe, Bell, and Gonzales counties, all of which are adjacent to the CAMPO region. The top 10 O-D pairs are distinguished by vehicle class – blue for heavy-duty trucks and orange for medium-duty. Most of the O-D pairs shown are comprised of trips by heavy-duty trucks.

Figure 27: Daily Inbound Truck Trips to the Capital Area Region, 2022



Source: Texas Department of Transportation (TxDOT). Texas Truck Analysis Tool (2022). Note: In the chart shown (Trips by OD Pairs), trips by heavy-duty trucks are denoted in blue and medium-duty trucks are denoted in orange.

Figure 28: Average Daily Outbound Trips from the Capital Area Region, 2022



Source: Texas Department of Transportation (TxDOT). Texas Truck Analysis Tool (2022). Note: In the chart shown (Trips by OD Pairs), trips by heavy-duty trucks are denoted in blue and medium-duty trucks are denoted in orange.

As shown in Table 21, most truck trips, over 162,000 a day, occurred entirely within the CAMPO region. For trips entering the CAMPO region, 43% originated from the rest of the state of Texas, excluding the Killeen-Temple Metropolitan Planning Organization (KTMPO) and Alamo Area Metropolitan Planning Organization (AAMPO) regions; 39% was from the AAMPO region, 17% from the KTMPO region, and 1% from outside of Texas. Regarding outbound trips from the CAMPO region, 46% of trips terminated within the rest of Texas, excluding the KTMPO and AAMPO regions; 36% went to the AAMPO region, 17% went to the KTMPO region, and 1% went outside of Texas.

Table 21. Trip Distribution Summary for the Capital Area Region

Origin	Destination	Average Daily Trips (% of directional total)
Internal		
CAMPO Region	CAMPO Region	162,715 (100%)
Inbound Trips		
Rest of Texas (excluding KTMPO and AAMPO Regions)	CAMPO Region	9,361 (43%)
Outside of Texas	CAMPO Region	244 (1%)
KTMPO Region	CAMPO Region	3,766 (17%)
AAMPO Region	CAMPO Region	8,519 (39%)
Outbound Trips		
CAMPO Region	Rest of Texas (excluding KTMPO and AAMPO Regions)	9,756 (46%)
CAMPO Region	Outside of Texas	243 (1%)
CAMPO Region	KTMPO Region	3,608 (17%)
CAMPO Region	AAMPO Region	7,580 (36%)

Source: Texas Department of Transportation (TxDOT). Texas Truck Analysis Tool (2022).

Freight Generators

The CAMPO region has experienced rapid population growth, as well as the growth of key industry sectors. As a result, demand on the regional freight network is increasing. This section looks at the intersection of freight activity and land use to identify where freight-intensive industries are clustered and where freight compatible uses are located in the region.

Freight Intensive Industries

The following uses Texas Labor Market Information (LMI) data from the Texas Workforce Commission (TWC) that categorizes employment in the state using North American Industry Classification System (NAICS) codes. Table 22 summarizes employment for particular industries that generate large amounts of freight traffic according to the NAICS classification. With a workforce of nearly 350 thousand, the CAMPO region represents nearly 8% of all freight-intensive industry employment in Texas. Travis County has by far the largest workforce in the

CAMPO region across all industries, with about 877 thousand total jobs. Travis County's workforce is more diverse than the rest of the region, where freight-intensive employment represents the smallest share of the county total (25%). Outside of Travis County, which is the most populated and urbanized in the region, freight-intensive industries account for a greater share of the employment total. The percentage of jobs in freight-intensive industries is 34% in Bastrop, 39% in Burnet, 37% in Caldwell, 40% in Hays, and 38% in Williamson County. Retail trade and construction employment account for each county's highest share of freight-intensive employment.

Table 22: Freight-Intensive Industry Employment in the Capital Area Region, 2022

Industry	Bastrop County	Burnet County	Caldwell County	Hays County	Travis County	William. County	Total
Ag., Forestry, Fishing, Hunting (NAICS 11)	207	135	160	155	600	228	1,485
Energy (NAICS 2111, 2131, 2211, 2212)	310	224	232	274	5,520	1,039	7,599
Construction (NAICS 23)	1,577	1,818	800	7,144	51,970	18,413	81,721
Advanced Manufacturing (NAICS 326, 331, 332, 333, 334, 335, 336)	234	506	65	2,163	33,517	11,599	48,082
Wholesale Trade (NAICS 42)	240	829	171	2,168	32,085	13,907	49,400
Retail Trade (NAICS 44-45)	3,963	2,343	1,653	12,552	68,410	27,563	116,484
Transportation, Warehousing, Waste Mgmt. (NAICS 48-49, 562)	493	262	380	8,560	23,724	5,170	38,589
Food, Beverage, and Tobacco Product Manuf. (NAICS 311-312)	216	124	81	919	4,237	562	6,139
Total, Freight-intensive industries	**7,238**	**6,240**	**3,542**	**33,935**	**220,062**	**78,481**	**349,497**
Total, All Industries	**21,052**	**16,103**	**9,529**	**84,527**	**876,985**	**207,923**	**1,216,118**

Source: Texas Workforce Commission (TWC). Texas Labor Market Information. Available at: https://texaslmi.com/LMIbyCategory/QCEW

Land Use

Understanding the linkages between freight and land use is crucial for developing the CAMPO regional freight plan. Land use is important in an existing conditions context since it influences where freight generators and employment are located. The ability to accommodate freight-generating businesses and industries is important for contributing to tax revenues and increasing economic output at state and local levels. This section identifies the region's existing land uses compatible with freight and can help develop a baseline for future land use considerations and freight trends and forecasts.

The land use assessment looks at parcels located within incorporated city limits, which carry three designations that will influence where each type of land use is: Current, Zoning, and Future. Additionally, parcels in a city's extraterritorial jurisdiction (ETJ) are considered. The ETJ is where cities plan for future growth and how they anticipate using those parcels.

These designations influence land use planning, providing insights for formulating recommendations for improving freight access and mobility and supporting economic development. Land use is essential in freight planning, specifically analyzing freight-intensive uses' current and potential future locations. An understanding of future freight trends and needs can be used to inform policies and strategies, such as reserving the most compatible parcels for freight-intensive uses, or prioritizing freight-intensive developments in locations with minimal impacts to surrounding communities and natural resources yet near the multimodal freight network which provides efficient access and connectivity.

Approach

Several steps were taken to gather information concerning land use. First, freight-intensive establishments were mapped within the CAMPO region using Data Axle data. The freight-intensive industries were identified using NAICS codes that correspond to the following industries and are consistent with the definitions used to analyze supply chains for Texas Delivers 2050:

- **Agriculture** (crop, livestock, and food manufacturing)
- **Energy** (oil & gas production and product manufacturing)
- **Mining** (construction materials such as aggregates and cement)
- **Advanced manufacturing** (automotive, electronics, and aerospace)
- **Warehousing, transportation, and retail trade**

Second, to identify existing freight-related land use in each city and county, several sources were referenced, such as land use maps, zoning maps, and economic development corporation websites. Digital news articles were also used to gather information about recently approved or built industrial parks and developments.

Finally, studies were available as additional sources to gather existing land use data. For example, the CAMPO 2045 Regional Arterials Study provided existing land use information along RM 1431, FM 734 (Parmer Lane), RM 12, and SH 21, which will be discussed further in the

County/City Analysis section.[17] Another study available was the City of Austin's Planning and Zoning Department's "Analysis of Industrial Land Use and Zoning," which reviewed the current state of Austin's industrially zoned land.[18]

The total land area for the six-county region is 5,215 square miles. There are numerous municipalities in the region, each with its own land use and zoning maps. **Appendix A** provides a summary assessment of existing industrial land uses and is organized by county. In addition, cities with notable freight-intensive uses are described in further detail within their respective county. Land use maps are provided in **Appendix B**.

Summary

The CAMPO region has experienced significant growth, and vacant or industrial-zoned land should be preserved to accommodate and encourage freight-related growth. Municipalities with suitable access to the freight network that plan for industrial uses within city limits and ETJ will attract freight-intensive users. The economic benefits of industries are numerous – creating jobs, increasing the tax base, promoting business diversity, and catalyzing growth in the surrounding area.

Travis County and Williamson County currently have the highest concentration of freight-intensive uses. Smaller municipalities with existing land use designated as industrial, near major roadways, and without environmental constraints are well-positioned for increased freight-intensive uses. The remaining vacant land designated for industrial uses will be critical to CAMPO's economic growth opportunities to redevelop areas located near major highways that may not have an industrial land use designation and preserve land for agricultural uses. In these developing areas, the roadway networks may not be designed initially to handle frequent truck traffic and oversized/overweight loads. The following are considerations for integrating freight-intensive land uses with the multimodal freight network across the region:

- Access management
- Rural highway safety
- Bridge and pavement asset management
- Presence of low-clearance or load-restricted bridges
- Roadway design criteria
- Connectivity with the Texas Highway Freight Network (THFN)

The Forecasts and Trends section in the CAMPO regional freight plan will identify major planned projects, examine economic development priorities, and review land use policies to create a conceptual map of freight growth areas. Most importantly, stakeholder input will be critical for proposing future freight-intensive land use designations and identifying preferred growth areas. These areas will also depend on identifying multimodal freight roadway networks for

[17] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 318. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[18] Water, M., & Engstrom, J. Analysis of Industrial Land Use and Zoning in Austin, Texas, September 2020. Accessed at Presentation to Planning Commission

improvements. This comprehensive approach will address growth and development for one of the nation's fastest-growing regions.

Key Supply Chains

With the national focus on supply chains and their sensitivity to disruption, Texas Delivers 2050 informed freight transportation investments and decision-making by analyzing the TMFN's role in the State's critical supply chains. In coordination with the Texas Freight Advisory Committee (TxFAC) and targeted industry clusters identified by the Texas Governor's Office on Economic Development, critical supply chains contribute to key areas of the Texas economy. The supply chains and subsectors listed below have major clusters located in Central Texas and generate significant freight activity.

- **Agriculture**: animal and crop production and food manufacturing
- **Construction**: mining and production of non-metallic minerals and aggregates
- **Electronics**: production of electrical components and semiconductors
- **Petroleum**: midstream distribution and downstream production of petroleum-based products
- **Transportation Equipmen**t: automobile parts manufacturing and vehicle assembly
- **Warehousing and Distribution**: general warehousing and retail distribution

The sectors above represent the high-profile investments fueling the rapid growth and transformation of the regional economy in Central Texas. On the manufacturing front, recent investments by Tesla and Samsung in Travis and Williamson counties are closely identified with the growth of the region's semiconductor manufacturing, automotive production, and other high-value sectors. Those industries have been attracted to the CAMPO region with its strong manufacturing base, access to skilled and talented labor, and connectivity with markets and trade gateways through the multimodal freight network.

The following section references the supply chain analysis conducted for Texas Delivers 2050 to highlight clusters of key freight generators and land uses in the CAMPO region. The commodity flow analysis for Texas Delivers 2050 includes using the Transearch database from IHS Markit (now S&P Global) for Texas. This database has the base year of 2019 and was enhanced to improve how some important flows in Texas are captured, including cross-border trade, maritime trade, and energy-related commodities. The analysis also references the location of business establishments for the six supply chains using the Business Data product from Data Axle (formerly InfoUSA). The locations were filtered to the industry sectors represented by the supply chains using NAICS codes that correspond to the types of commodities for the sectors outlined earlier.

Agriculture

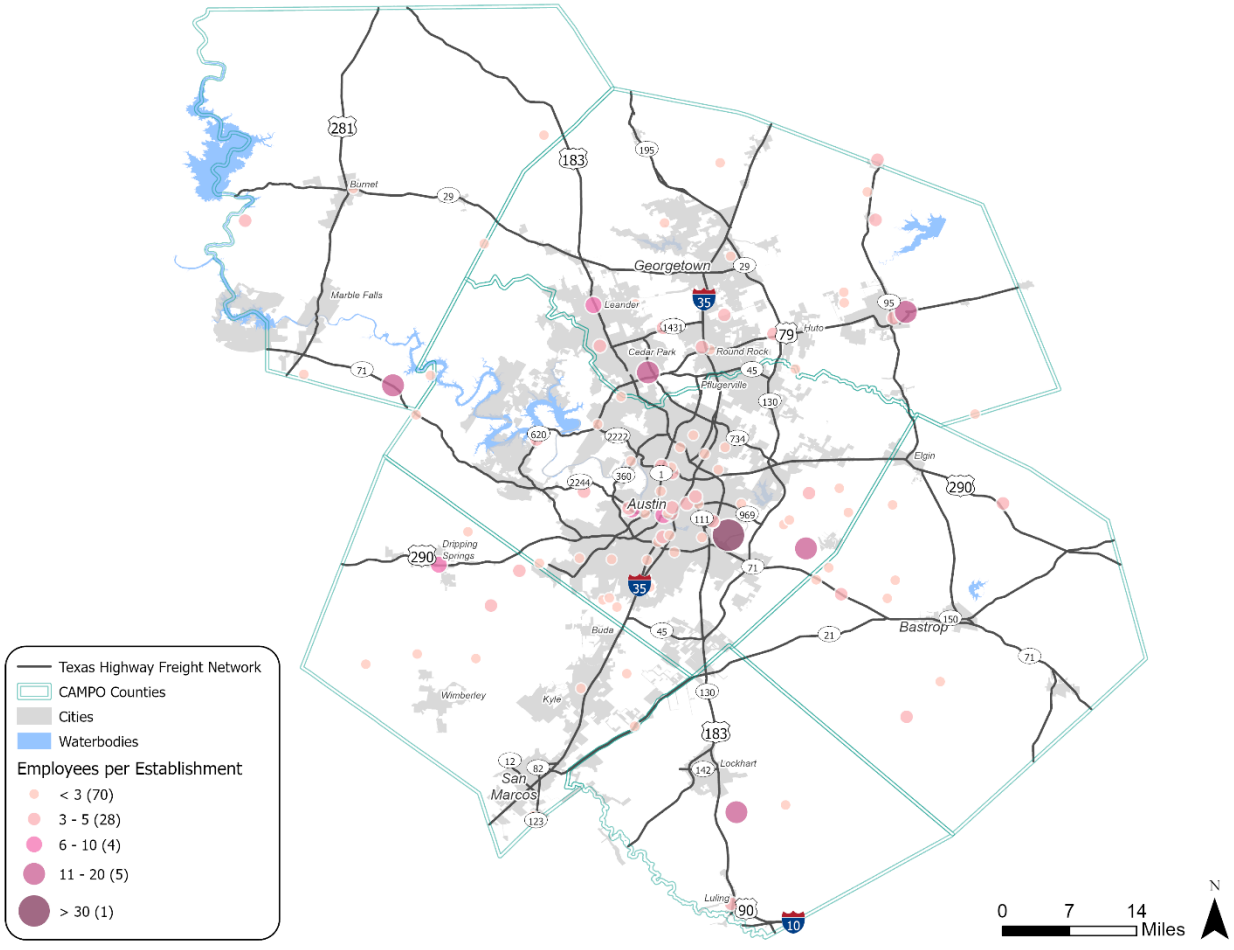
This section discusses the location of supply chains in Central Texas that support the state's agriculture and food manufacturing industries. The sector includes establishments in agriculture crop production, animal livestock production, and food manufacturing. Crop production includes crops that are farmed, harvested, and sent to market. Animal livestock production

includes livestock breeding, farming, and slaughter. Finally, food manufacturing is associated with the production of food products.

Crop Production Sector

The location of agricultural crop production establishments is shown in Figure 29. Crops produced in the CAMPO region include corn, hay, and wheat. Most establishments are located in Travis and Williamson counties, especially in the parts east of the IH 35 corridor where most cultivated land is situated. For example, the cluster shown in central Austin includes small-scale urban farms, orchards, and nurseries located in the city's eastern part. Outside of urbanized Travis County, roadways such as SH 95, SH 71, US 290, and US 79 provide access to the THFN for agricultural production establishments.

Figure 29: Agricultural Crop Production Establishments by Employee Size in the Capital Area Region, 2020



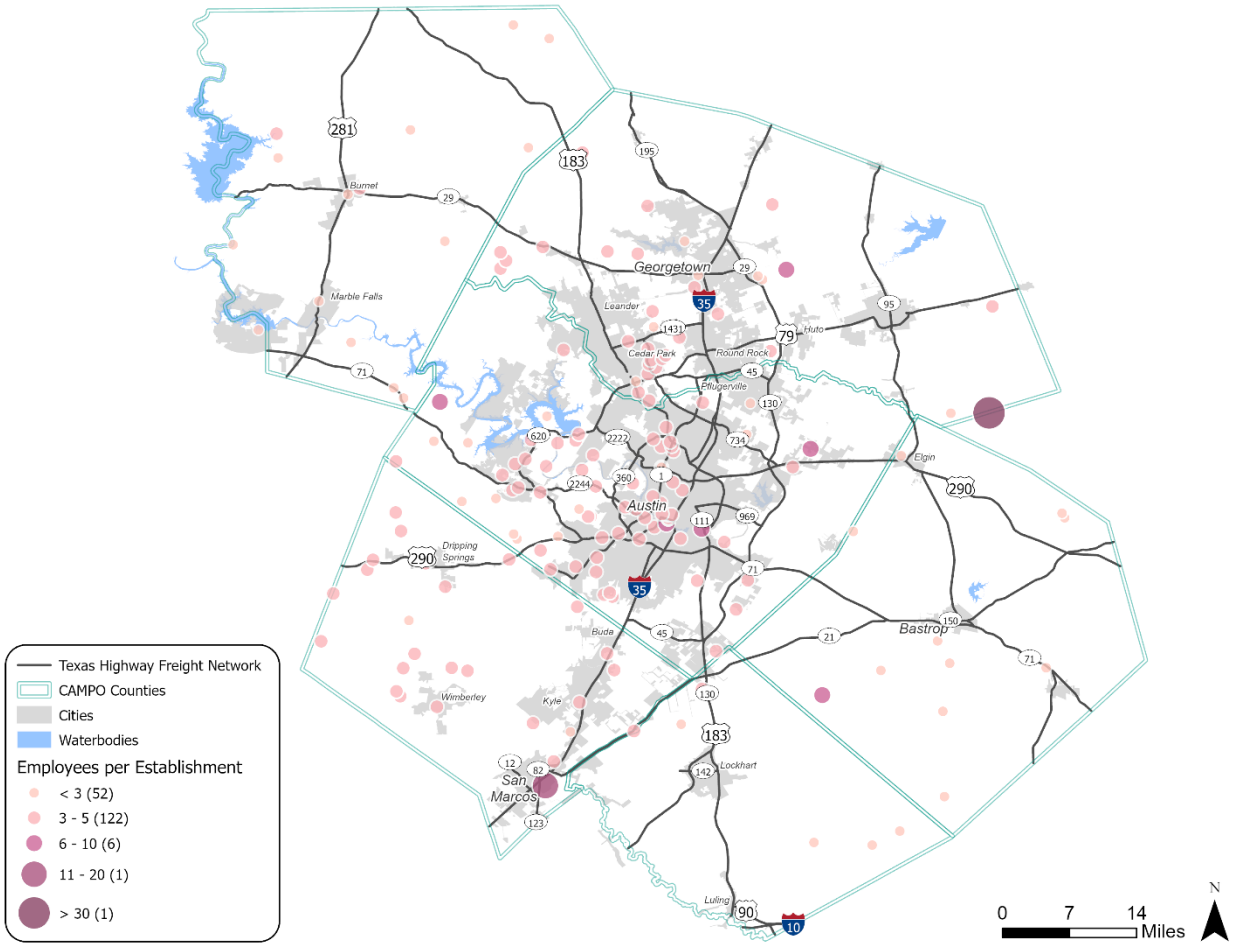
Source: Prepared by Cambridge Systematics using data provided by Data Axle. (2021). Business Data (2020)

Animal Livestock Production Sector

The location of establishments in the animal production industry is shown in Figure 30. Compared to the previous figure for crop production, most establishments in Travis, Hays, and

Williamson counties, especially in the parts west of the IH 35 corridor where many ranches are located in the Hill Country area. Roadways such as SH 29, RM 620, RM 2244, US 290, and SH 71 provide access to the THFN for animal production establishments in Hays County and the western parts of Travis and Williamson counties.

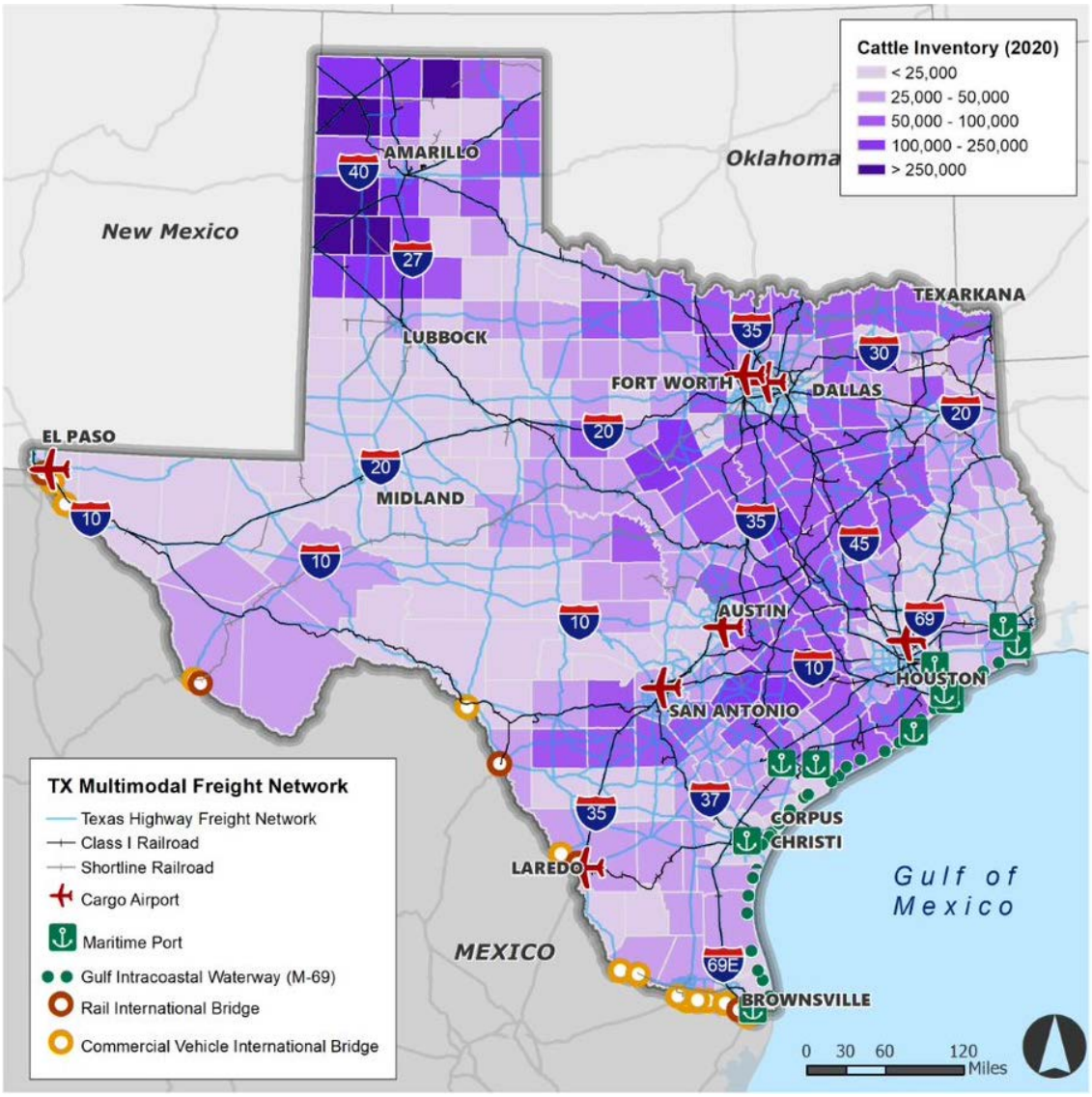
Figure 30: Animal Production Facilities by Employee Size in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle. (2021). Business Data (2020)

The livestock cattle supply chain consists of multiple well-defined clusters, especially within Texas. However, it also consists of numerous small farms dispersed throughout the majority of the state. For Texas-born cattle, large concentrations of early-stage farms can be found throughout the state, but especially in eastern Texas (Figure 31). Williamson and Bastrop counties have the highest cattle inventory within the CAMPO region.

Figure 31: Cattle Inventory by County in 2020

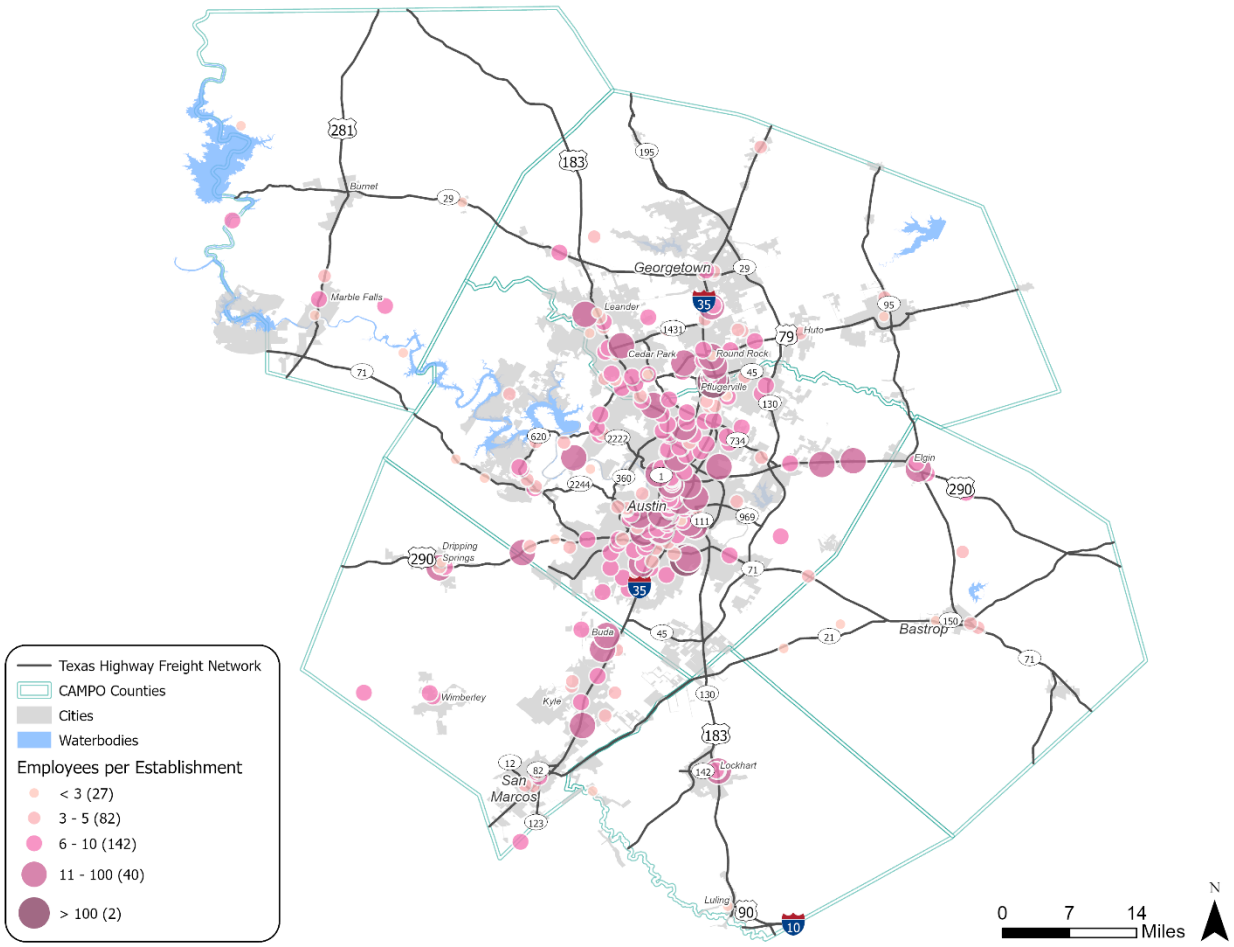


Source: Prepared by Cambridge Systematics using data provided by USDA, Texas Agricultural Statistics 2020, Available at- https://www.nass.usda.gov/Statistics_by_State/Texas/Publications/Annual_Statistical_Bulletin/index.php

Food Manufacturing Sector

The location of establishments in the food manufacturing industry is highlighted in Figure 32. Many establishments are close to roadways such as US 183, FM 734, and IH 35 in Austin's north and central parts. Some of the larger establishments by employee size are outside of the urban areas of Austin along US 290 and IH 35 in Hays County and along US 290 in the western and eastern parts of Travis County.

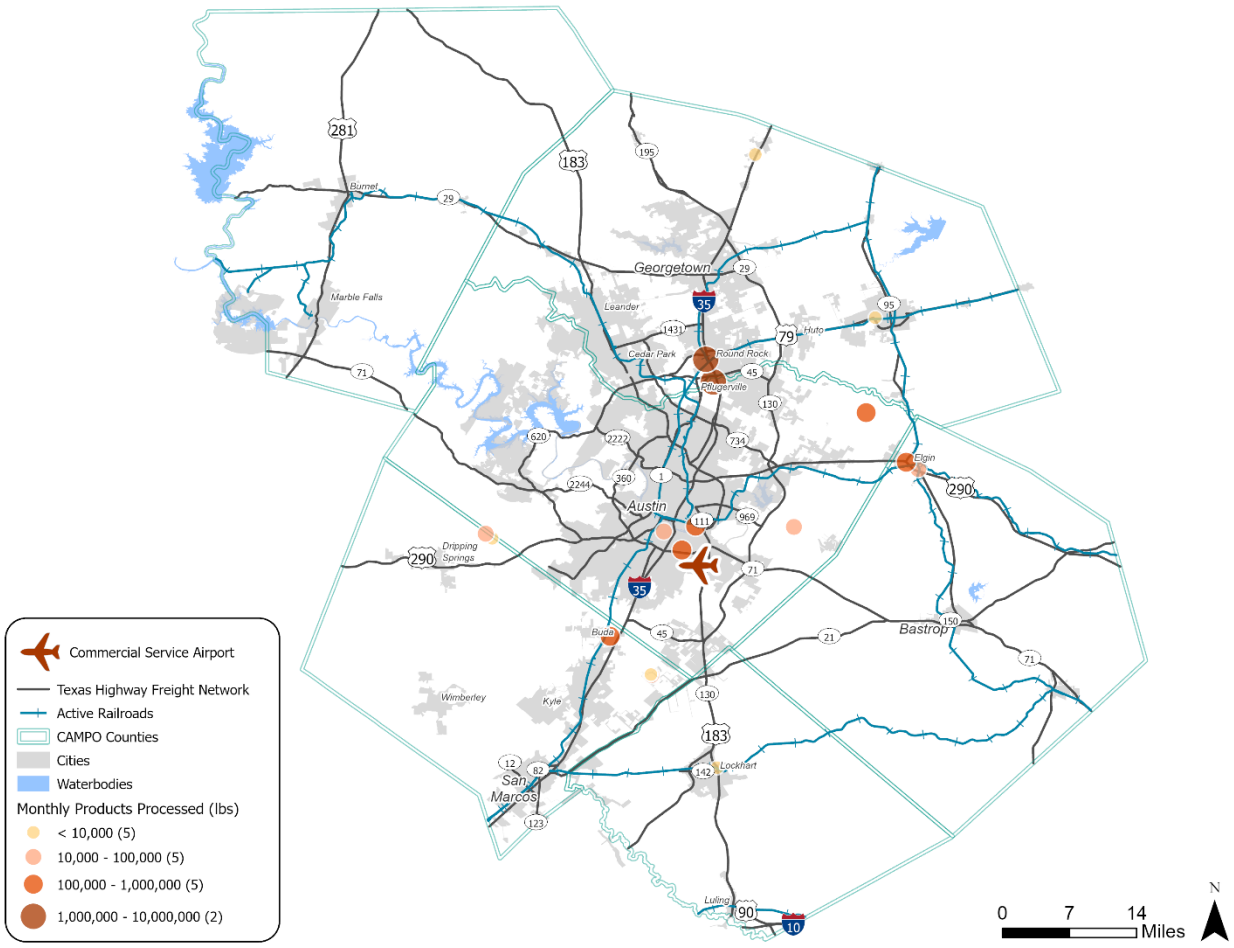
Figure 32: Location of Food Manufacturing Establishments in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle. (2021). Business Data (2020)

Figure 33 shows the location of meat, poultry, and egg product manufacturing plants in the CAMPO region by volume of monthly processed products. Much of the food manufacturing activity in the region is located in the area of IH 35 and US 79, and SH 45 in the northern part of Austin and to the south near the airport. Other locations with a high production volume are near Elgin in Bastrop County and Buda in Hays County.

Figure 33: Meat, Poultry, and Egg Manufacturers in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by USDA's Food Safety and Inspection Service (FSIS).

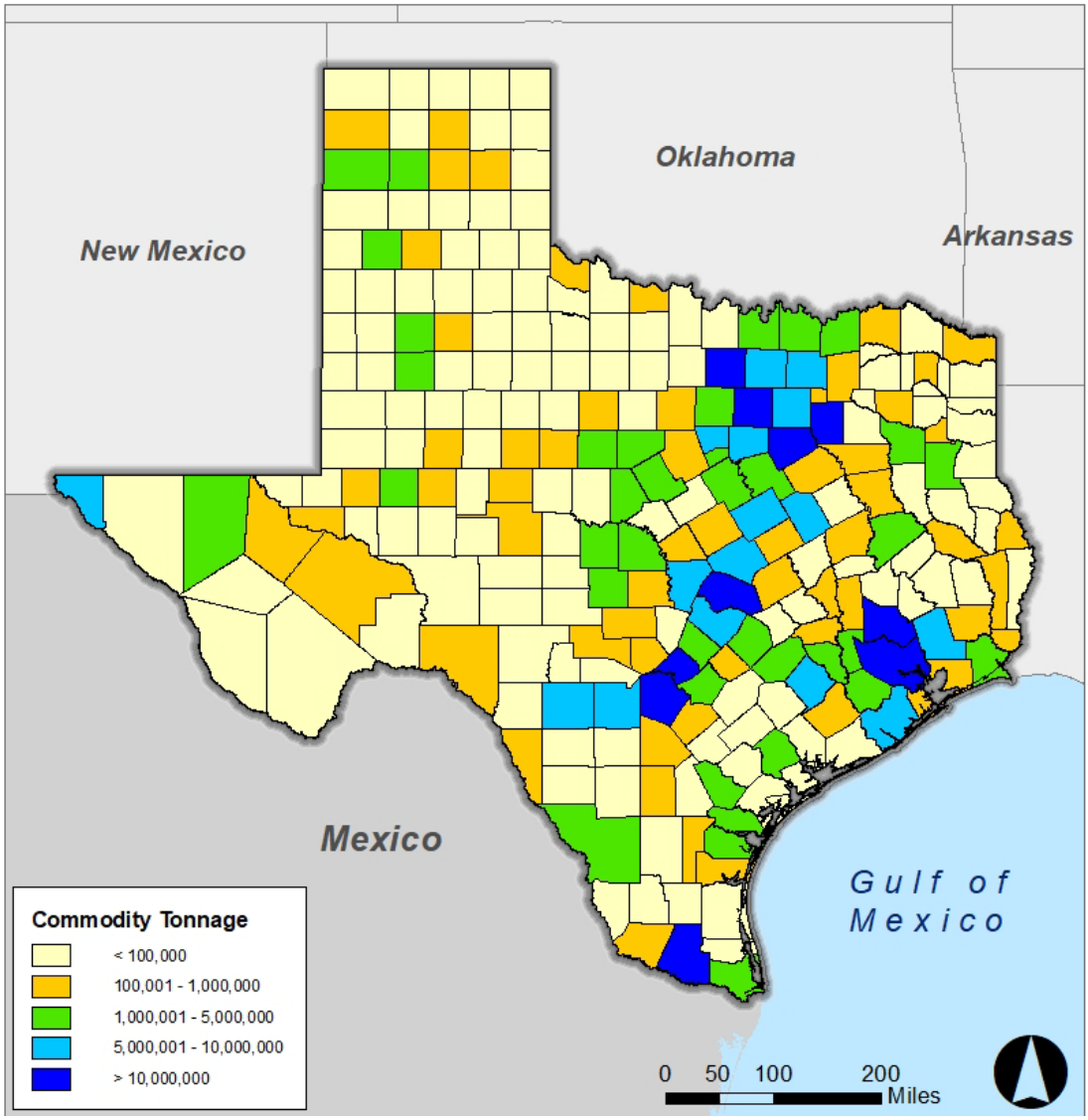
Construction

This section discusses the location of supply chains in Central Texas that supports construction industries in the state. The sector includes nonmetallic mineral production establishments, including raw materials, such as aggregates and limestone originating from quarries and mines, and finished materials, such as cement and concrete, either brought to or manufactured in Texas. Central Texas is both a producer and consumer of nonmetallic minerals; the region has the requisite geological formations to produce limestone and sandstone.

Nonmetallic Mineral Production Sector

Nonmetallic mineral products have a low value per ton and are expensive to transport, so they tend to be sourced from locations close to where they are consumed. Since much of the construction occurs in urban metropolitan areas, the highest concentrations of nonmetallic mineral production in Texas are located near metropolitan areas, as shown in Figure 34. Within the CAMPO region, Williamson County has the highest level of originating tonnage, followed by Williamson, Travis, and Burnet counties; production is concentrated on the west side of IH 35.

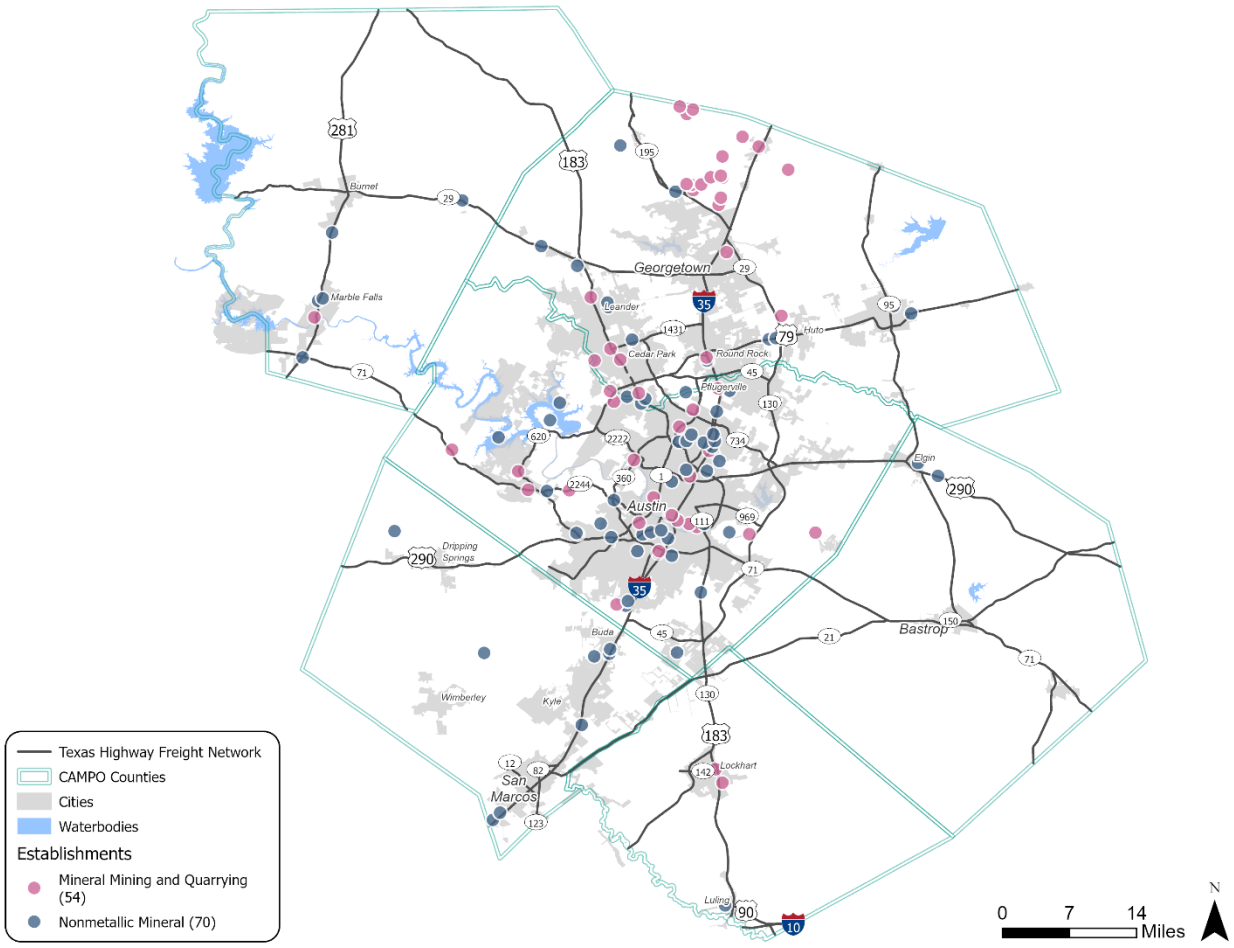
Figure 34: Origins of Commodity Flow Tonnage for Nonmetallic Mineral Production, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Figure 35 displays mining and quarrying establishments and nonmetallic mineral manufacturing establishments, which use nonmetallic minerals to make products like cement, concrete, and precast concrete items. Establishments are mainly clustered to the west of IH 35 in Williamson and Travis counties. These locations are near roadways on the THFN, such as SH 195, US 183, and SH 71, and in proximity to the freight rail network.

Figure 35: Location of Nonmetallic Mineral Product Manufacturing and Quarrying Establishments, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle (2021). Business Data (2020).

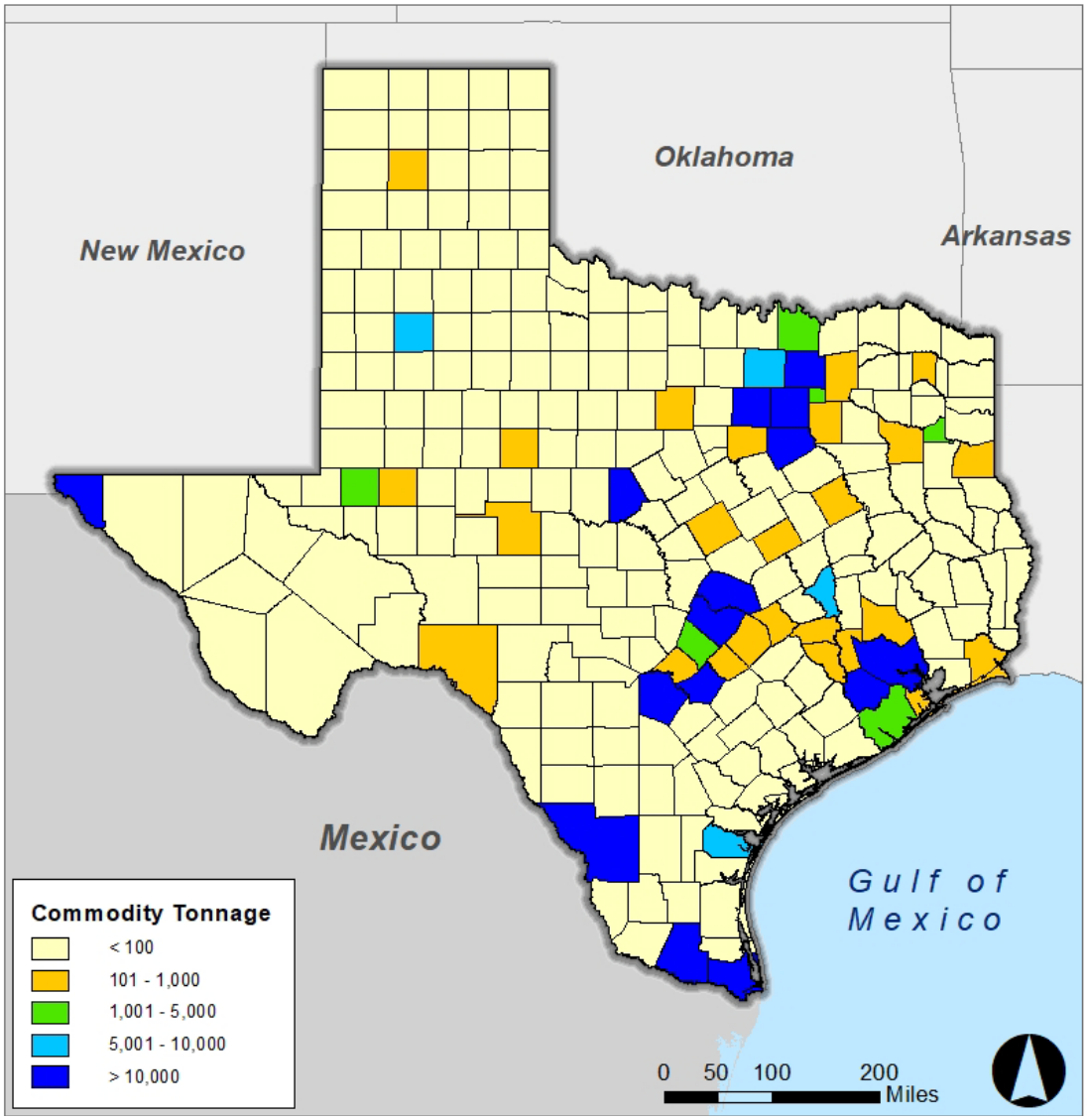
Electronics

This section discusses the location of supply chains in Central Texas that supports electronics industries in the state. The sector includes establishments that manufacture electronic components and semiconductors. Electronic commodities include consumer products such as televisions, radios, phones, and equipment used in industrial and commercial settings; the sector also produces components such as batteries and semiconductors. Semiconductors are a key sector comprising a broad set of intermediate products, including diodes, computer logic modules, and transistors, essential components of most electronic circuits. All items in this category are critical building blocks of the components that go into computers, cell phones, automobiles, and many other products.

As shown in Figure 36 the largest concentrations of electronics commodities originate in the Texas Triangle (Austin, Dallas-Fort Worth-Arlington, Houston, and San Antonio). Within the CAMPO region, Williamson and Travis counties have the highest levels of originating tonnage for electronics commodities. Overall, production facilities are primarily centered in the Texas

Triangle. However, the concentration in Houston is likely attributed to imports through Port Houston. Likewise, the tonnage along the border in El Paso, Laredo, McAllen, and Brownville is likely attributed to imports from Mexico.

Figure 36: Origination of Commodity Tonnage for Electronics, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

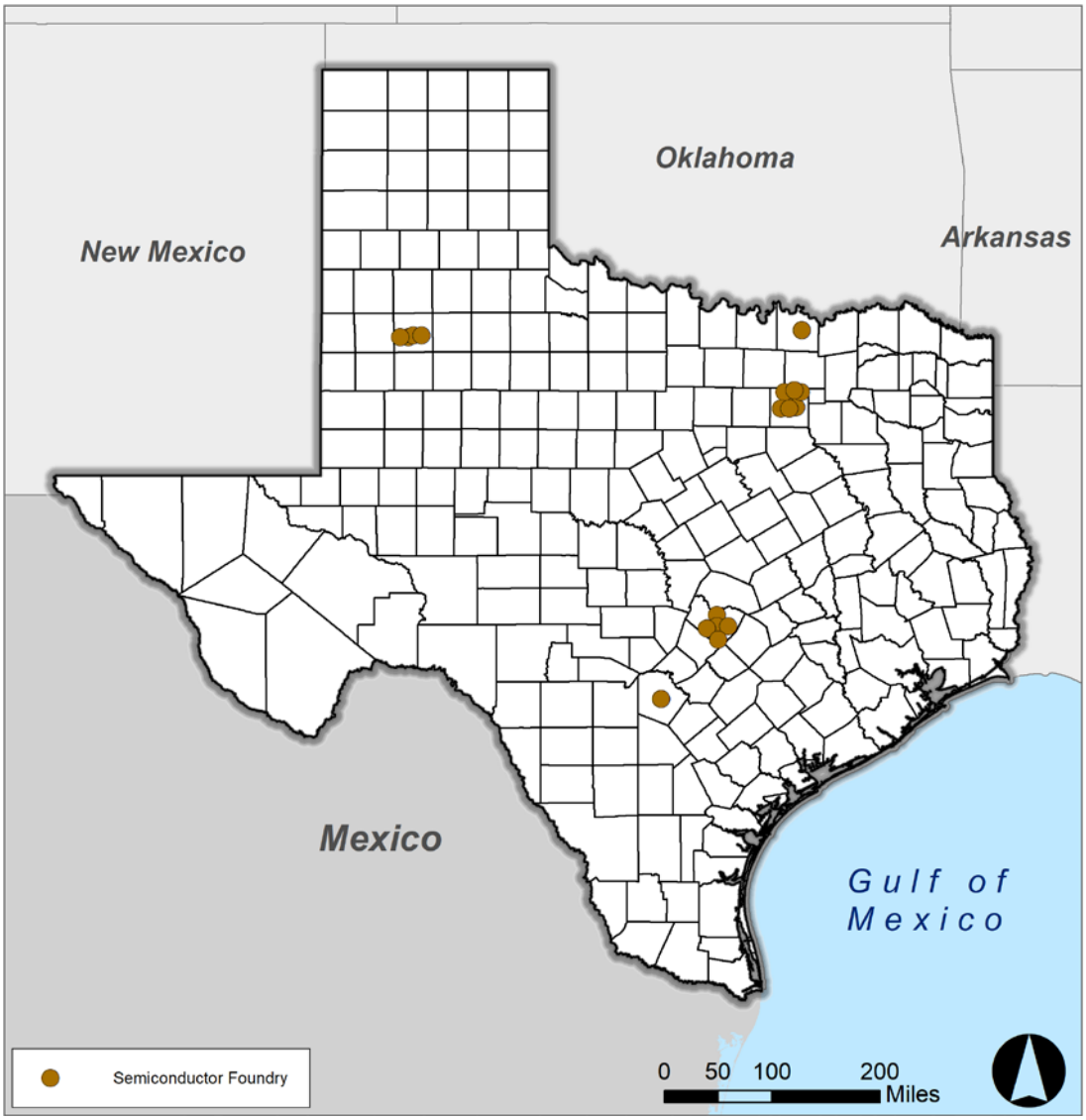
Semiconductor Sector

Semiconductors are an important part of the U.S. and Texas economies. Moreover, they are an integral part of the technology used in everyday life, and they go into everything from light switches and refrigerators to computers, automobiles, and cell phones. The term semiconductor for the purpose of this supply chain analysis is a broad term that includes items such as solid-state electronic devices, diodes, computer logic modules, and transistors.

Semiconductor foundries are high-tech plants that are a vital part of the chip manufacturing process. These large facilities use a tremendous amount of electricity at rates higher than automotive plants and oil refineries. Additionally, the amount of water used by these plants is very substantial. Further, the manufacturing of semiconductors is a complex process that includes hundreds of inputs, a large portion of which are raw materials such as chemicals and gases. Raw materials and intermediate materials are sourced both domestically and internationally. However, while there are domestic sources of some of these materials (such as gases and wet chemicals), a large portion of materials, including intermediate products (such as silicon wafers, photomasks, and photoresists), are imported from abroad, especially Asia. For these reasons, as well as the cost of labor, most semiconductors are currently produced in Asia. However, Texas has a growing number of semiconductor facilities, with newer arrivals such as Samsung joining well-established companies such as Texas Instruments, Advanced Micro Devices (AMD), and National Instruments, which have long-standing design and fabrication facilities in Central Texas.

Within Texas, two main areas produce a large portion of the state's semiconductors: Dallas-Fort Worth-Arlington to the north and Austin-Round Rock in the CAMPO region. These two metro areas are home to 12 of the 15 semiconductor foundries within the state, as shown in Figure 37. In the CAMPO region, the foundries are concentrated in Travis County.

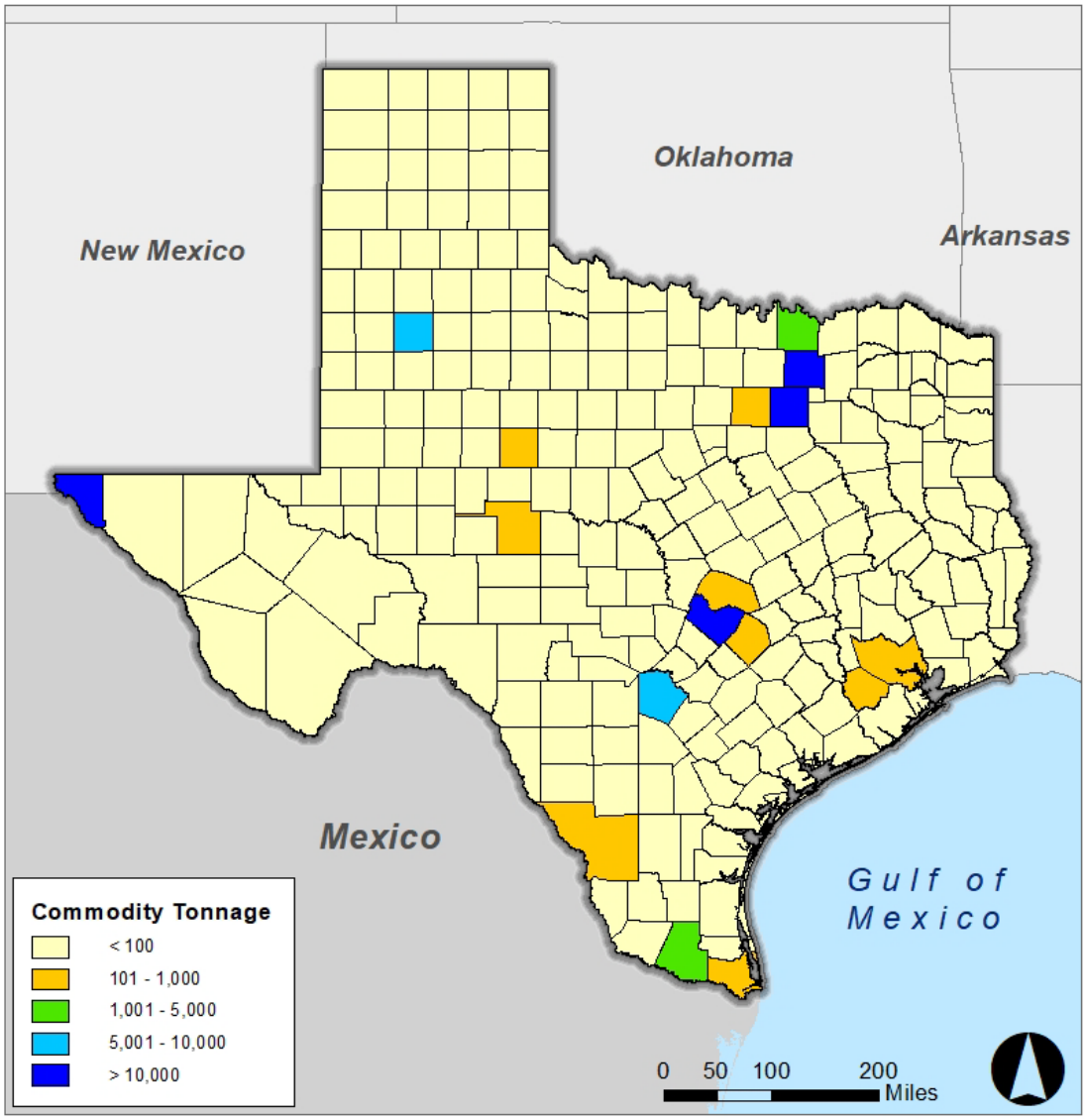
Figure 37: Semiconductor Foundry Locations in Texas, 2021



Source: Semiconductor Industry Association

As shown in Figure 38, Travis County is among the Texas counties with the highest originating tonnage for semiconductor commodities. Williamson and Bastrop counties are also among the counties that produce originating tonnage. However, these are more likely to be diodes and other smaller components categorized with semiconductors.

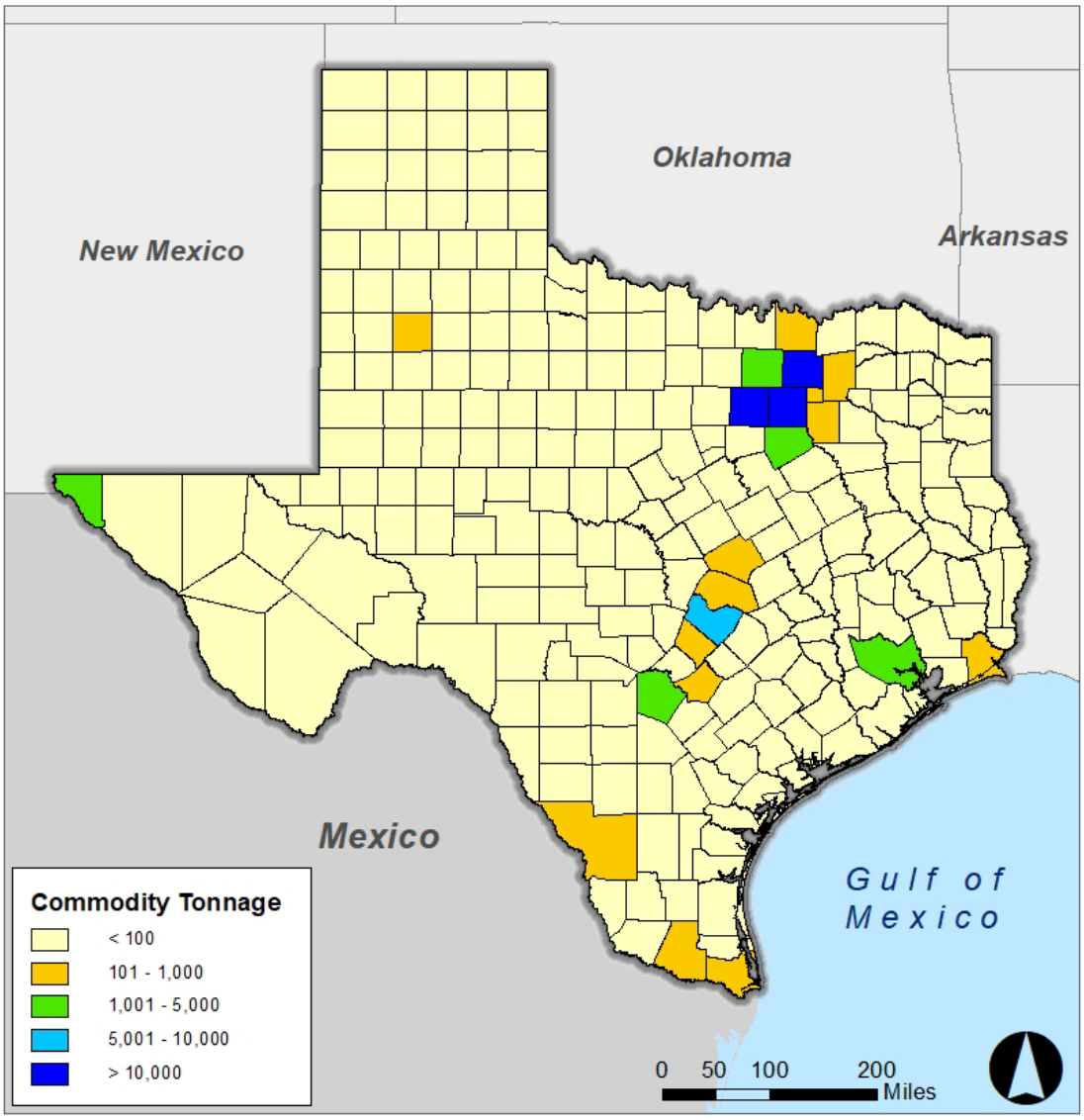
Figure 38: Origins of Commodity Tonnage for Solid-State Semiconductors, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

As shown in Figure 39, the demand for semiconductors is concentrated in the Texas Triangle since this area serves as input to computers and other electronics products manufactured in these areas. Along with the Dallas-Fort Worth-Arlington metropolitan area, counties in the CAMPO region have the highest concentration of semiconductor demand. The high-value shipment of semiconductors requires access to air freight. Airports such as DFW and Austin-Bergstrom provide global gateways to manufacturing materials, intermediate products, and finished semiconductors. Semiconductors are extremely fragile, and the vibrations from truck travel can easily damage them. Thus, they are predominately trucked to an airport and shipped via air to locations domestically and internationally.

Figure 39: Destinations of Commodity Tonnage for Solid-State Semiconductors, 2019



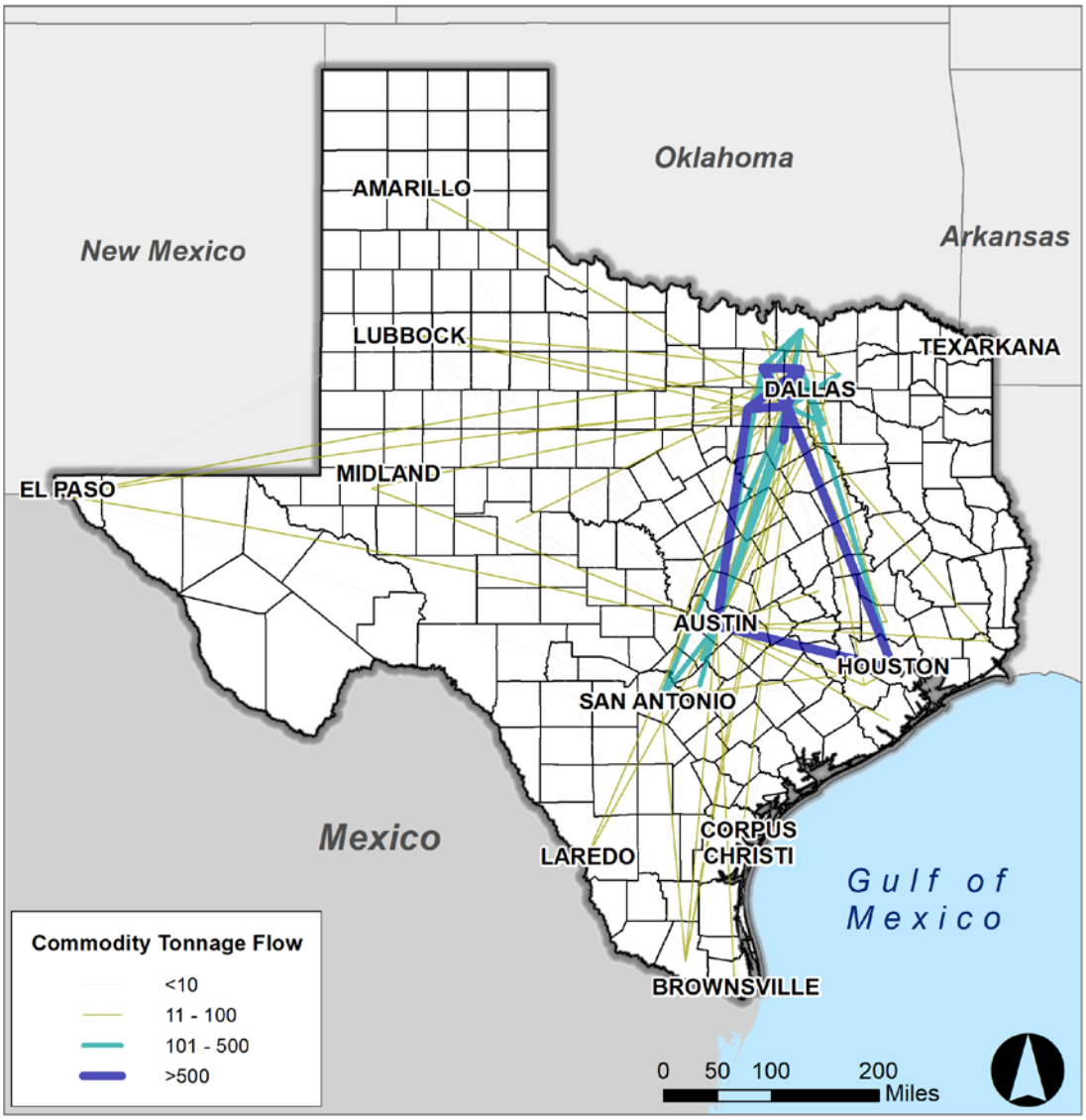
Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

According to Transearch, the predominant inbound flows are from California, Oregon, and Colorado, which includes semiconductors manufactured in those states but, importantly, the flows from ports of entry which, in this case, include significant flows from airports. In addition, international air cargo consists of flows from Asia with suppliers and semiconductor manufacturing in countries such as Taiwan, South Korea, and Malaysia.

For outbound flows, large portions go domestically to states such as Illinois, Florida, and New York. Internationally, there are large flows that go to Mexico and Central America and considerable flows to Europe. International air cargo flows also connect manufacturers and suppliers in Texas with East Asia. Figure 40 shows the commodity flows for semiconductors

within Texas. The flows connecting the urban areas of the Texas Triangle highlight the importance of the CAMPO region as a primary consumer and producer of semiconductors.

Figure 40: Commodity Tonnage Flows within Texas for Solid-State Semiconductors, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Petroleum

This section discusses the location of supply chains in Central Texas that supports petroleum industries in the state. The sector includes establishments in petroleum product distribution and the downstream production of plastics and rubber derived from petrochemicals. Texas is the leading domestic producer of crude oil and natural gas, and Central Texas has several transmission pipelines crossing the region. The sector includes establishments involved in storing and distributing finished products such as motor gasoline, diesel, and other liquified fuels

and gasses refined and processed in other parts of the state. The plastics and rubber manufacturing sector uses resins that are a byproduct of petroleum refining and polymerization to create pellets that are key components for the other manufacturing industries, namely automotive, which has a major cluster in the CAMPO region.

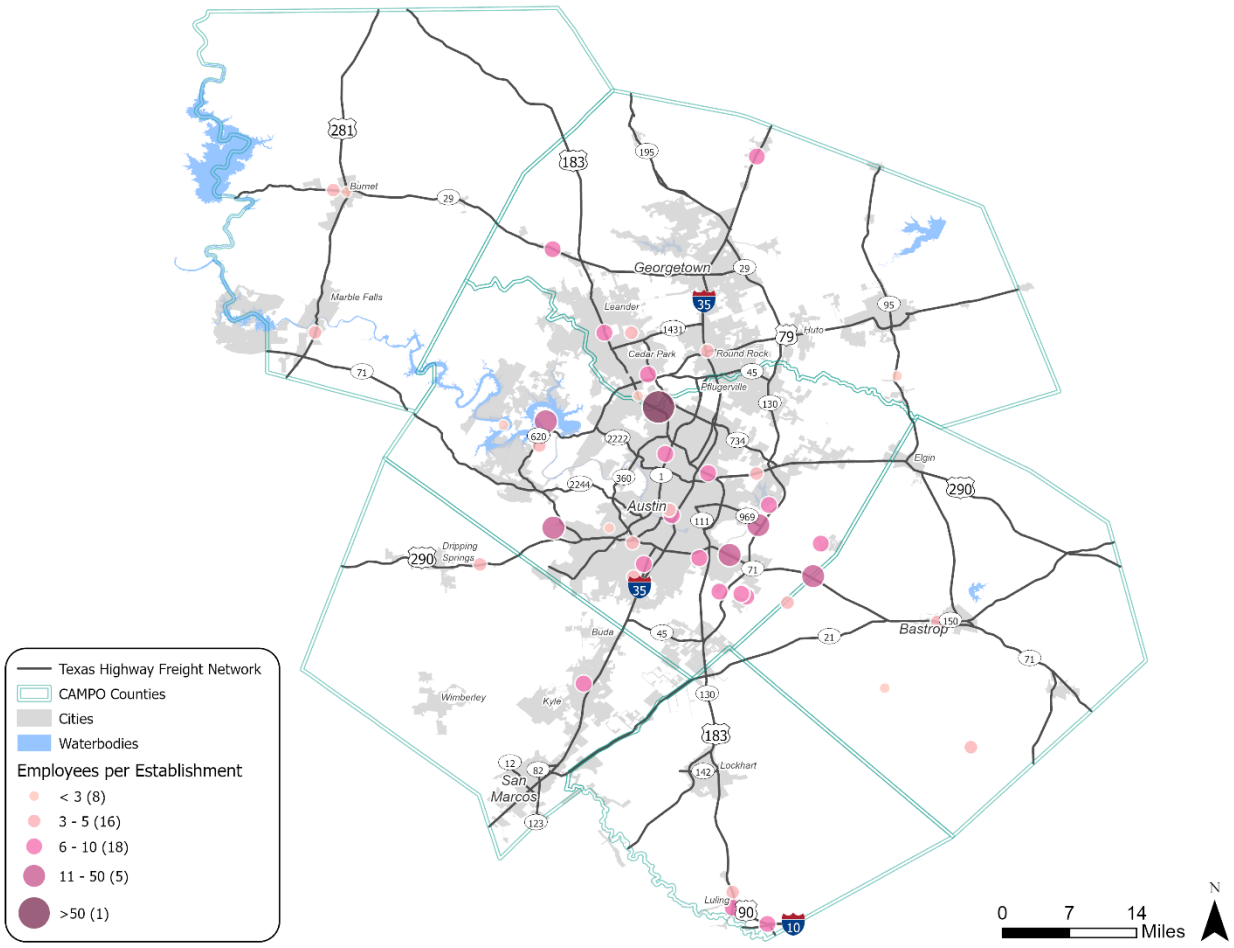
Petroleum Product Distribution Sector

The distribution part of the supply chain refers to the midstream operations of the petroleum industry. This sector provides the logistical networks and the storage and handling facilities that link upstream oil & gas producers with downstream operators that refine and process petroleum into various products. For example, pipelines transport crude products in bulk from shale gas-producing regions such as the Permian Basin in West Texas to storage terminals closer to urban areas and ports. There, products are redistributed by pipeline, tanker truck, or tanker ship to downstream oil refineries, natural gas processing plants, and petrochemical manufacturers.

Most of Texas's refining and petrochemical manufacturing is clustered in complexes along the Gulf Coast in Houston, Beaumont, Port Arthur, and Corpus Christi. From there, finished products such as motor gasoline, diesel fuel, dry natural gas, and propane are transported by pipeline and rail to the state's population centers and delivered to end users at homes, gasoline stations, power plants, airports, and other sources of energy demand. Other products, such as petrochemicals, are diverted downstream to produce resins for various rubber and plastic materials and goods.

Petroleum distribution in Texas is classified under several NAICS codes, including the movement of crude oil and petroleum products via pipelines and terminals. They specifically include petroleum bulk stations and terminals, crude oil transportation, refined petroleum products, and fuel dealers. Therefore, NAICS codes were combined, and employment was mapped for the CAMPO region, as shown in Figure 41.

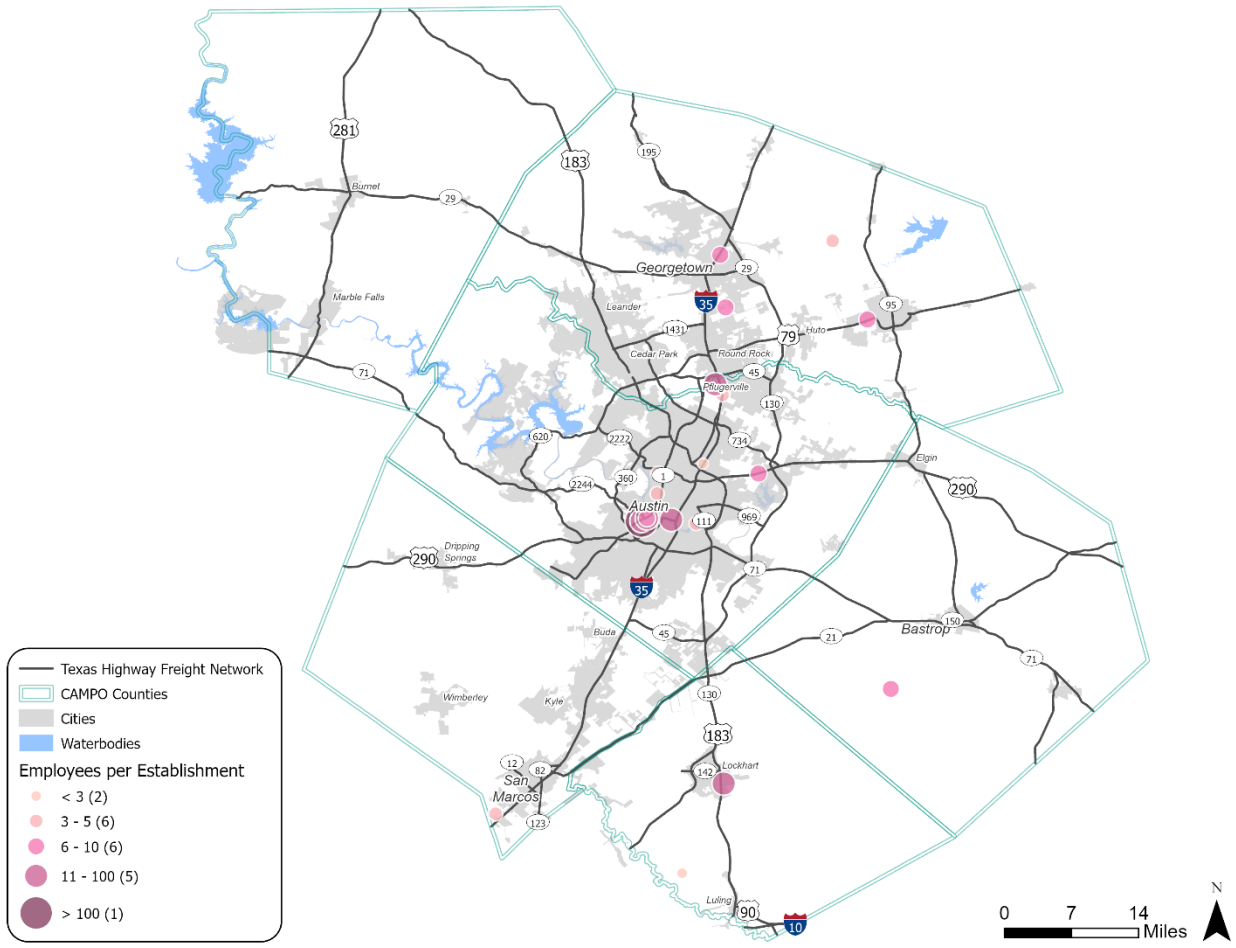
Figure 41: Location of Petroleum Distribution Establishments in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle (2021). Business Data (2020).

Figure 42 shows the location of establishment involved in the pipeline transport and distribution of natural gas. The main cluster is surrounded by RM 2244, SL 360, and SL 1 (MoPac Expressway).

Figure 42. Location of Natural Gas Distribution Establishments in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle (2021). Business Data (2020).

Plastics and Rubber Manufacturing Sector

The plastic and rubber manufacturing supply chain involves many complex chemical processes resulting in consumer products. Before plastic and rubber products reach consumers, the raw resources and processed materials change hands often amongst various modal alternatives.

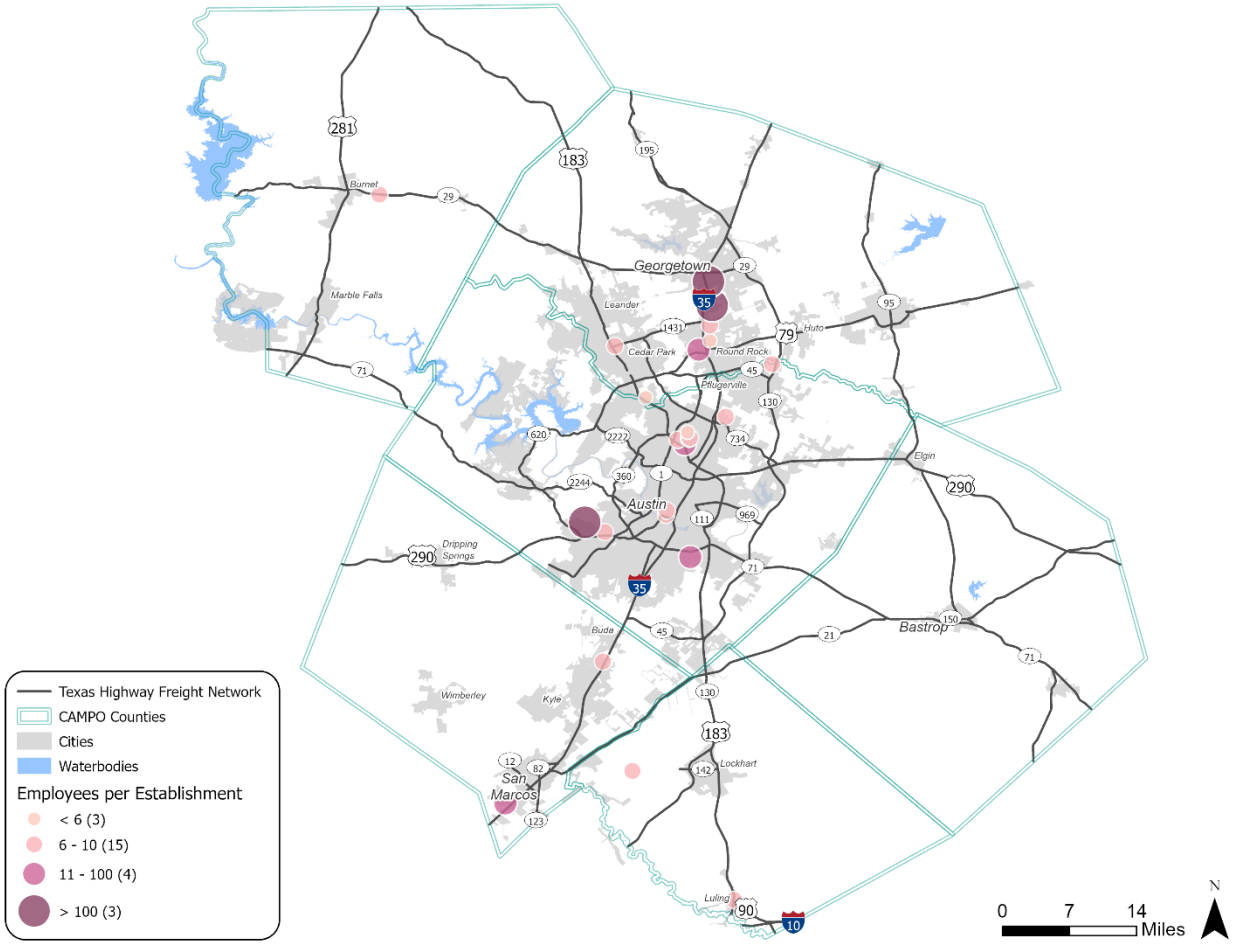
Plastic resin is the primary staging point for many plastic and synthetic rubber products. The resin, as a byproduct of petroleum refining and polymerization, exists in its raw form as plastic pellets that are easily hoppered, or bagged and containerized, for distribution to manufacturing facilities. Overseas manufacturers import resins as primary inputs for plastic and rubber product manufacturing. International, and often domestic, distribution of plastic pellets requires it to be shipped by container to the manufacturing facility. This almost exclusively involves transport by rail and sometimes trucks to domestic manufacturing facilities or maritime ports of entry.

Once the resin has reached manufacturing facilities, the plastic and rubber products are fabricated and shipped to down-chain manufacturers or end-users through direct transactions

or wholesale purchasers and distributors. Downstream manufacturing includes the shipment of multiple plastic and rubber products, both domestic and international, to facilities that require multiple inputs to manufacture the ultimate end-used product, as is the case with car parts or other assembly-type manufacturing.

Figure 43 shows the locations and approximate employment for plastic and rubber manufacturing establishments. The larger establishments by employee size are near SH 71 in the southwestern part of Travis County and IH 35 near Georgetown.

Figure 43: Location of Plastic and Rubber Product Manufacturers in the Capital Area Region, 2020



Source: Prepared by Cambridge Systematics using data provided by Data Axle (2021). Business Data (2020).

Warehousing and Distribution

This section discusses the location of supply chains in Central Texas that supports warehousing and distribution industries in the state. The warehousing sector includes facilities dedicated to storing raw materials before production, maintaining work in progress through the production cycle, and collecting finished goods ready for delivery to the point of final consumption by

businesses or consumers. Warehouse establishments are considered an intermediate stage in the consumer goods supply chain.

Distribution and fulfillment centers play an important role in the final stages of the warehousing supply chain, ensuring that goods move from convenient storage facilities to retail locations and consumers. Distribution and fulfillment centers tend to store goods for shorter periods than general warehouses. Distribution centers typically serve as transit hubs for goods, whereas fulfillment centers store products before they are shipped to customers. However, the distinction between these facilities is becoming less clear over time, as fulfillment centers increasingly provide transit services while some distribution centers offer storage and direct shipment to customers. Retail Distribution includes facilities primarily engaged in selling goods or services to consumers or end users. Retail distribution establishments are considered the final stage of the consumer goods supply chain.

Warehousing Sector

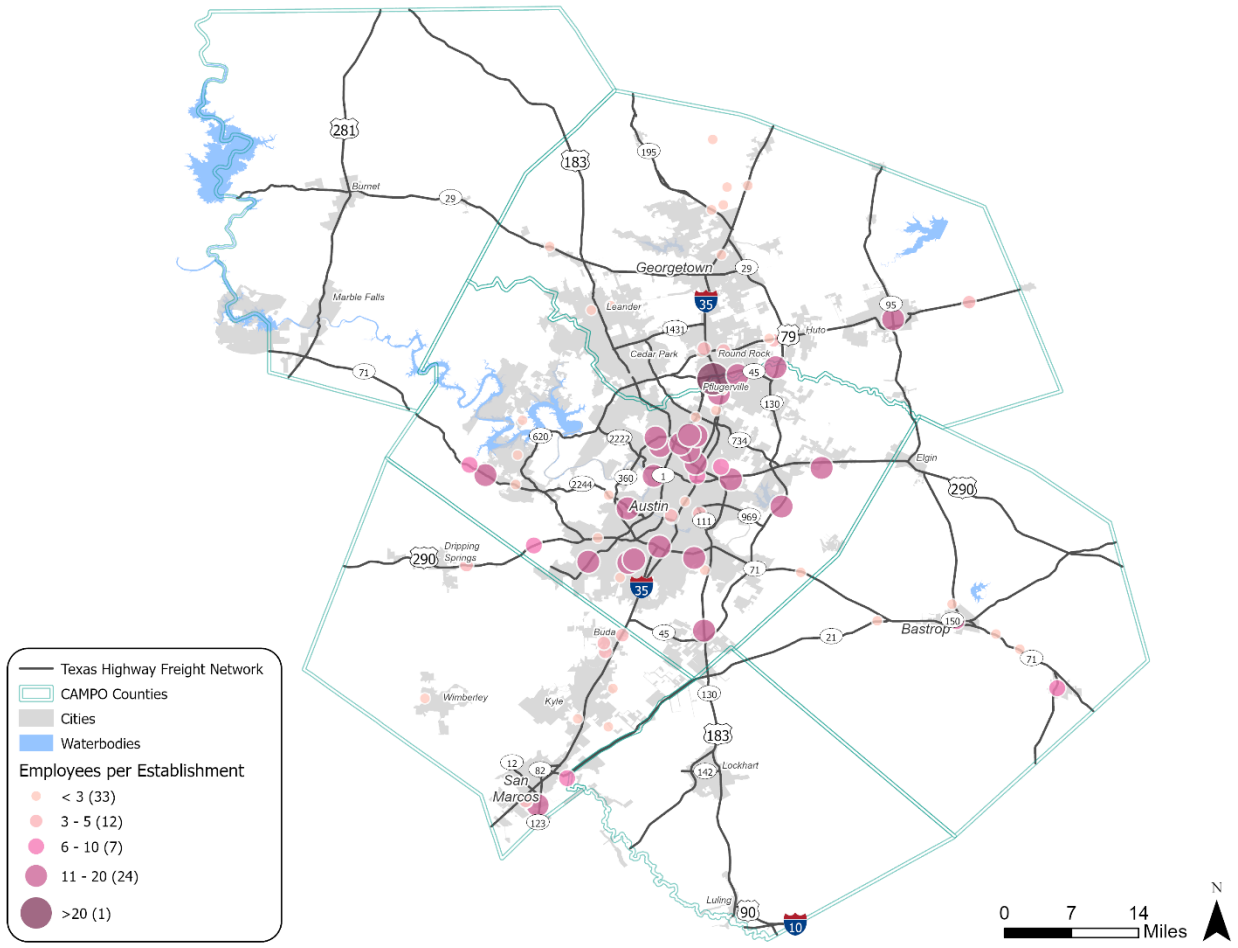
General warehouses are ideally suited for storing bulk quantities of consumer products that do not have strict refrigeration requirements. As a result, they play a major role in the supply chains of various non-perishable goods that go to retail, grocery, and drug stores. These facilities are usually the first stopping point for goods after manufacturing and processing; the products will then move onto distribution centers or retail distribution establishments.

Products move to and from Texas warehouses and international and domestic sources via water, rail, and truck. Texas has 28 border crossing points from Mexico, three of which are official land ports for incoming and outgoing freight.19 In addition, there are twelve deep draft seaports in Texas, owned mainly by port entities with land leased to private operators along the Gulf of Mexico. Products from Asia via West Coast ports (primarily in California) are moved into Texas markets via rail and truck. Warehousing is critical to effectively storing and sorting a variety of commodities as they make their way from the initial mode of transport into the distribution chain.

Figure 44Figure 44 shows the location of general warehouses by employee size in the CAMPO region. Most warehouse establishments are clustered in Travis County and located along segments of the THFN in proximity to the IH 35 corridor. Some of the larger establishments in terms of employment are located near US 183 and SH 45 in north Austin and along SH 130.

[19]TxDOT (Accessed 2022, April 9). Texas-Mexico Border Crossings. Available at: https://www.txdot.gov/inside-txdot/projects/studies/statewide/border-crossing.html

Figure 44: Location of General Warehousing Establishments in the Capital Area Region, 2020



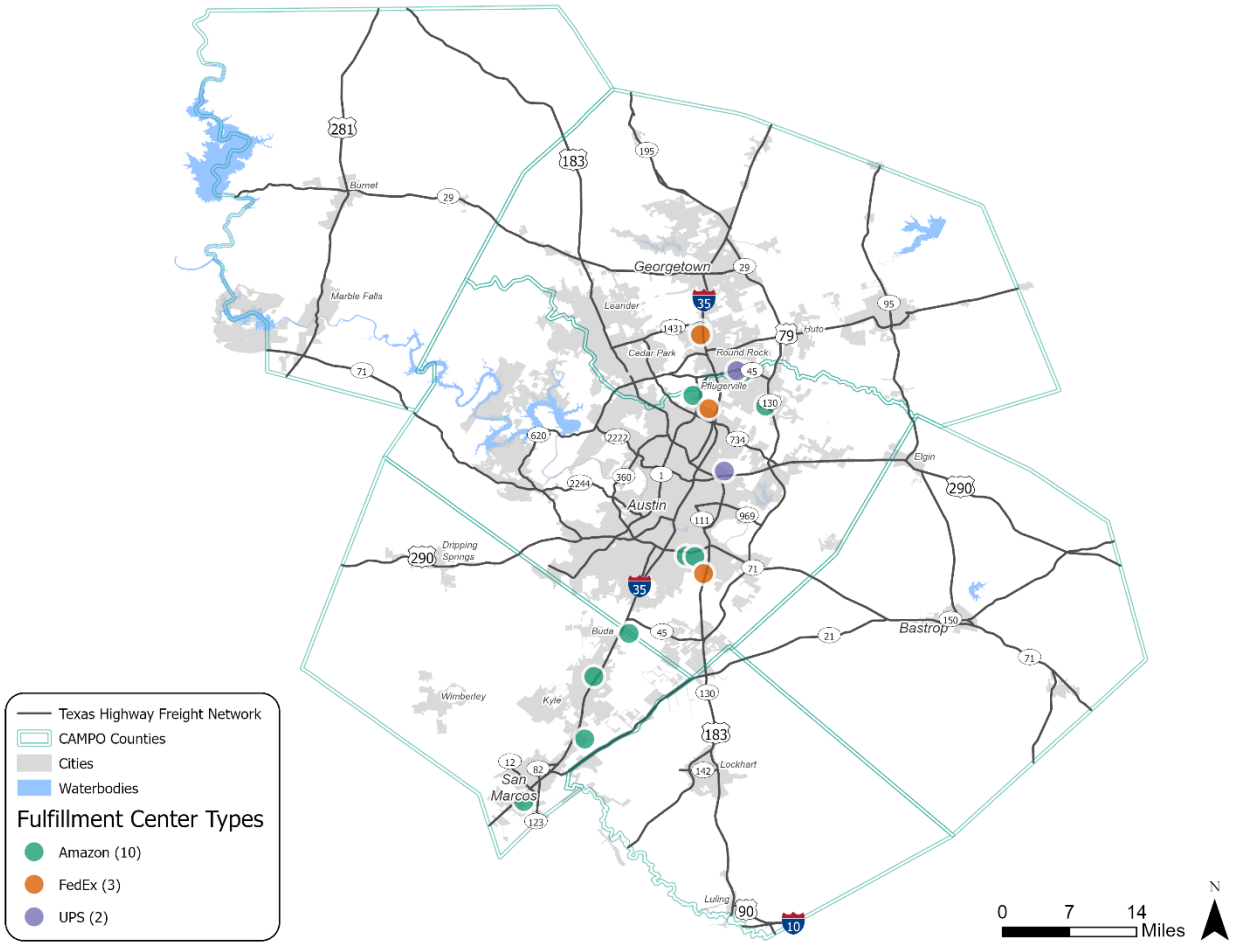
Source: Prepared by Cambridge Systematics using data provided by Data Axle. (2021). Business Data (2020)

Much of the goods flowing through the warehousing and distribution supply chains are imported into the U.S. from manufacturers in East Asia. Before arriving in Texas, goods are brought on container ships to ports on the West Coast, namely the Port of Los Angeles and the Port of Long Beach (POLA/POLB). The containerized cargo is then transported across the western U.S. by rail and truck to warehouses and fulfillment centers in El Paso, San Antonio, and Dallas-Fort Worth; goods then make the final journey by truck to reach households and businesses in urban areas where consumer demand is concentrated, including the CAMPO region. Commodity flows for warehousing also originate in the Midwest, with large inbound flows from Illinois. Other sources of tonnage arrive via seaports, such as Port Houston, for imports from Central America and Europe. Tonnage also enters Texas from Mexico, going north by rail and truck through Laredo to San Antonio via IH 35 to reach the rest of the state.

Figure 45 shows the location and number of warehouse and fulfillment centers in the CAMPO region, focusing on the dominant players in in the e-commerce space – Amazon, FedEx, and UPS. Four (4) are located in Hays County, eight (8) in Travis County, and three (3) in Williamson

County. All of the locations shown are located in proximity to the THFN. The facilities operated by Amazon, FedEx, and UPS store and distributes customer orders and packages for final delivery in the CAMPO region and in surrounding counties. Capital Area households and businesses benefit from the convenience of online shopping and access to a broad selection of goods and products from around the world.

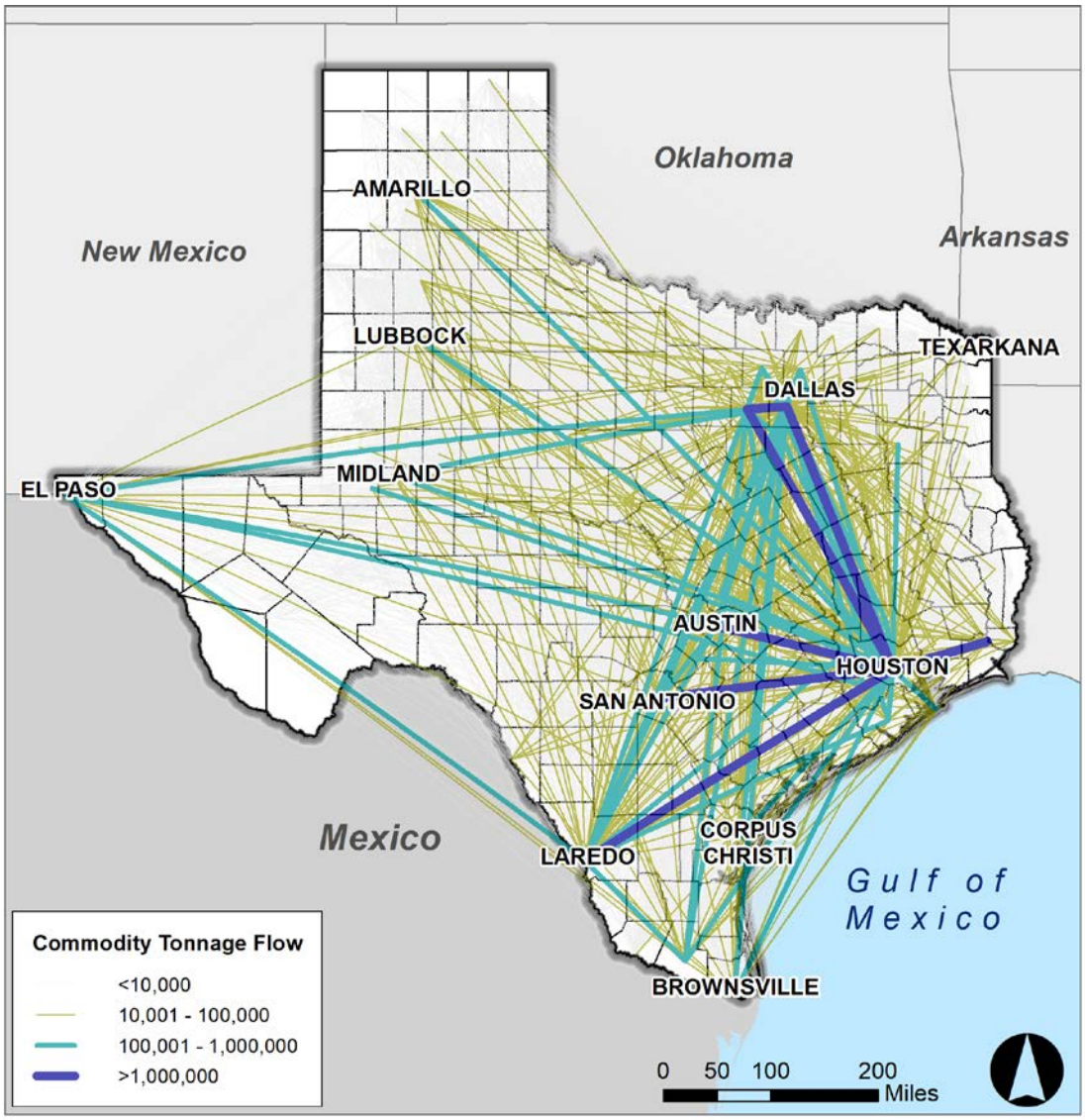
Figure 45: Capital Area Warehouses and Fulfillment Centers operated by Amazon, FedEx, and UPS



Source: Prepared by Cambridge Systematics using data provided by CAMPO (2023).

Figure 46 shows that the largest warehouse distribution commodity tonnage flows within Texas are between Houston and Austin and between Houston and urban areas in Laredo, San Antonio, and Dallas. There is also a large movement of distribution cargo from Houston to the border with Louisiana.

Figure 46: Commodity Tonnage Flows within Texas for Warehouse Distribution, 2019



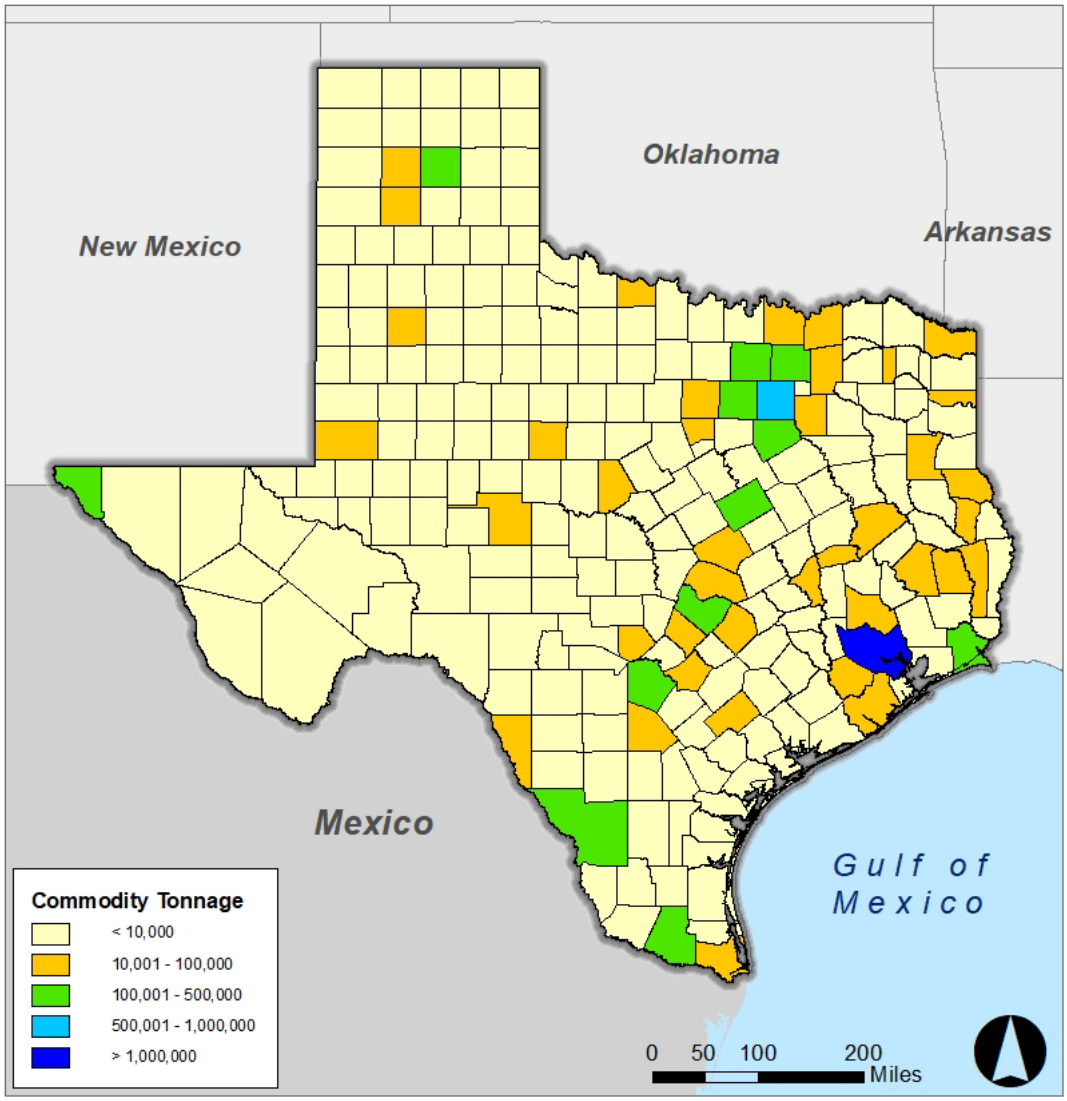
Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Retail Distribution Sector

The Retail Distribution Sector includes many establishments, which can be categorized according to their general purpose and the types of goods handled. General retail is a broad category that covers selling various consumer goods, primarily to individuals. These establishments may also sell medical and grocery products. The general retail category includes

malls as well as warehouse clubs (e.g., Costco), specialized retailers (e.g., Best Buy), and big box retailers (e.g., Walmart and Target). In addition, the sector includes e-commerce as a growing sub-sector of retail distribution. Figure 47 shows that the highest origination volume of general retail commodities comes from densely populated urban areas such as Houston and Dallas-Fort Worth. Travis, Hays, Williamson, and Bastrop counties in the CAMPO region are major source of originating tonnage for retail commodities.

Figure 47: Origins of Commodity Tonnage for General Retail, 2019

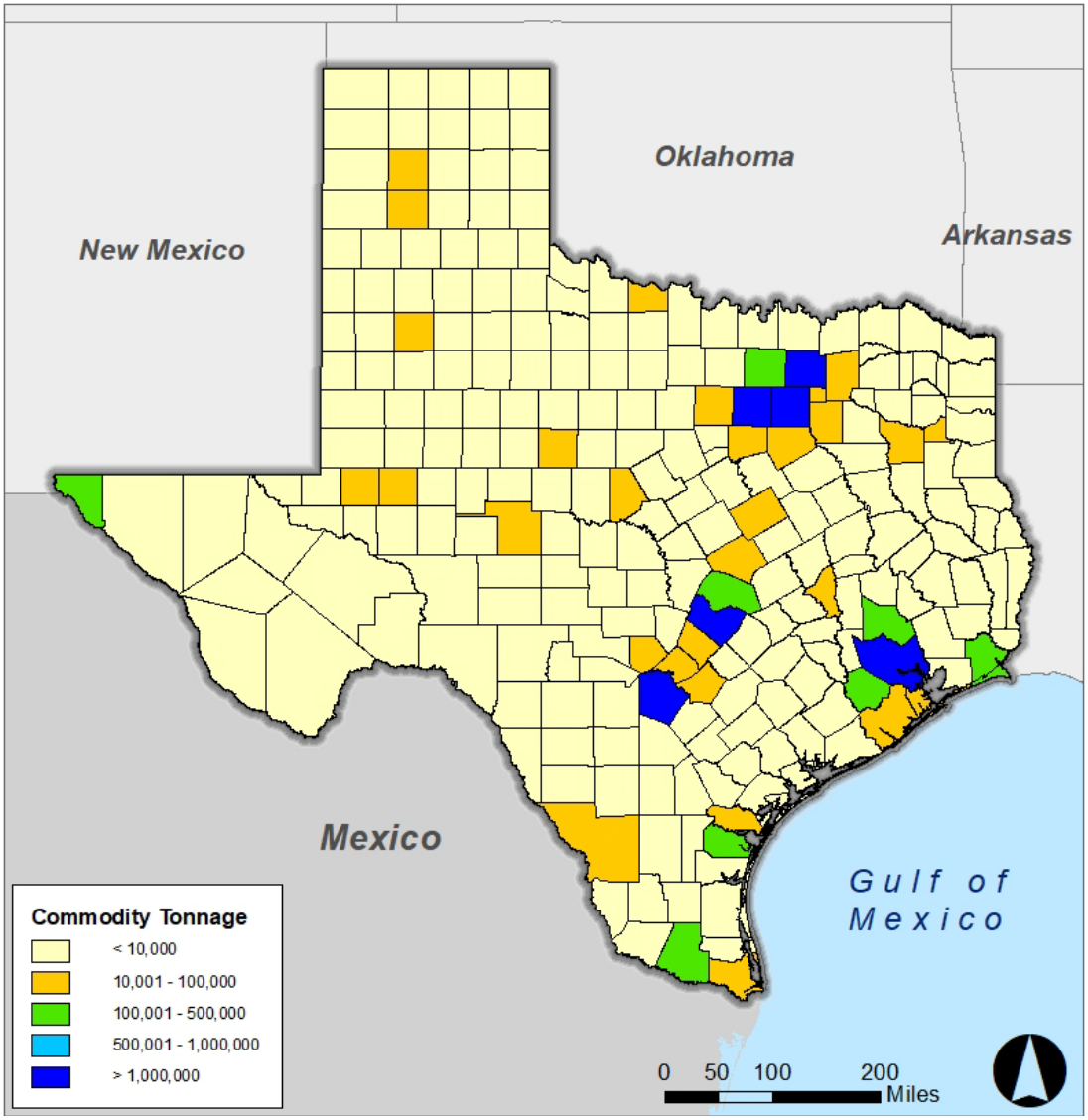


Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Figure 48 shows that the greatest destination volume of general retail commodities is headed to densely populated urban areas such as Austin and the other major metropolitan areas of Houston, Dallas-Fort Worth, and San Antonio. Travis County is among the counties with the

highest amount of inbound tonnage for retail commodities. Williamson and Hays counties are also major destinations for retail commodities.

Figure 48: Destinations of Commodity Tonnage for General Retail, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Travel Characteristics for E-commerce Warehousing Trips

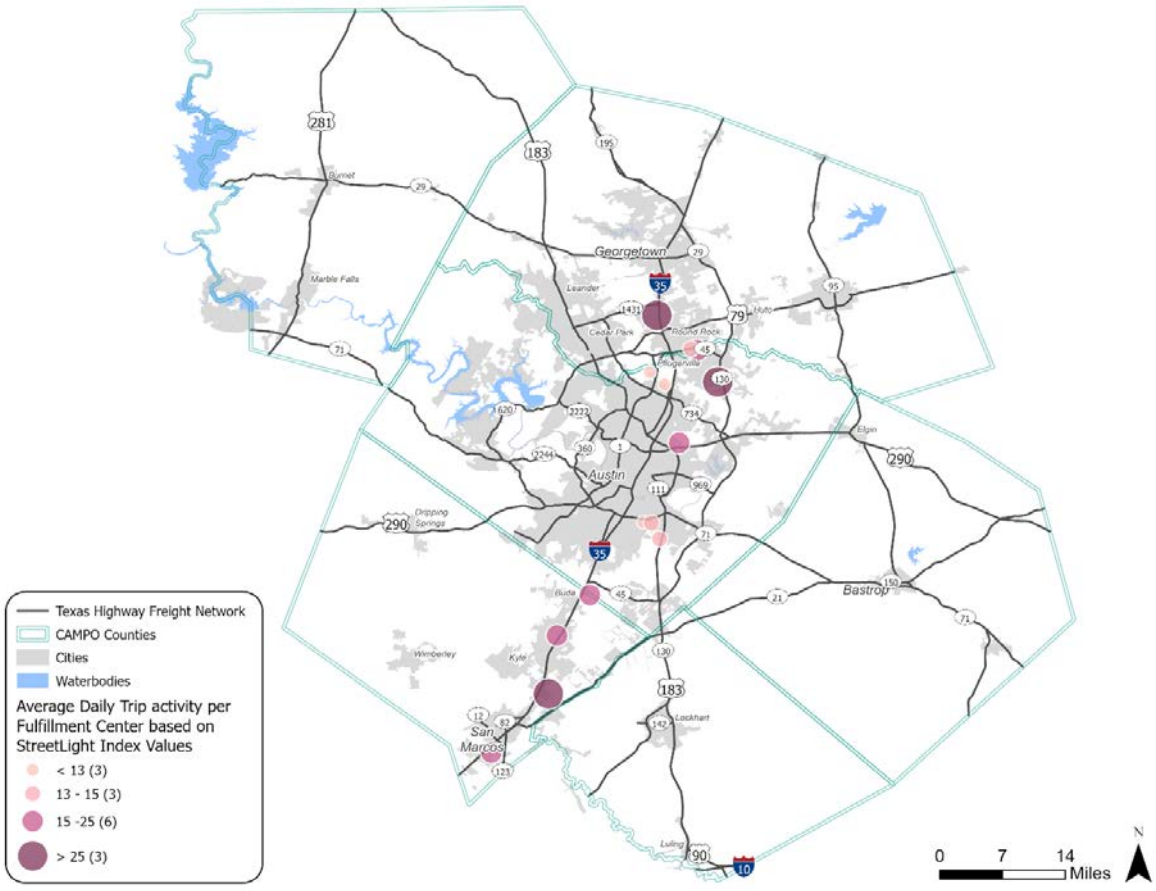
Trip origins and destinations were analyzed for the 15 fulfilment centers in the CAMPO region operated by FedEx, UPS, and Amazon. Using StreetLight Data,[20] zones were created at facility

[20] StreetLight Data is a transportation analytics platform that uses location-based data from mobile devices to analyze data on trip origins-destinations (O-Ds) and other travel metrics.

location to capture information on the trips that started and ended at each location. The period of 2018 to 2022 was analyzed.

Figure 49 shows the location of the fulfillment centers in the CAMPO region and the daily trip activity observed at each location. The size of the circles represents the relative level of average daily trip activity for each location based on the number of data samples indexed by StreetLight Data. The fulfillment centers in Hays and Travis counties that have the highest levels of activity are located near IH 35 and SH 130, respectively, and are operated by Amazon. The location with the highest level of activity in Williamson County is located near IH 35 and is operated by FedEx.

Figure 49: Relative Daily Trip Activity for Fulfillment Center Locations in the Capital Area Region, 2018 – 2022

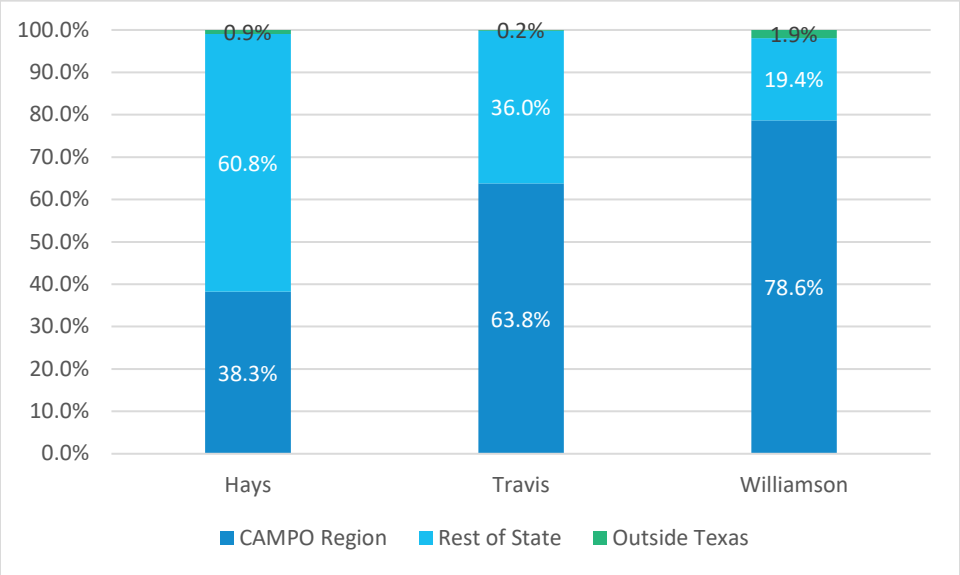


Source: Cambridge Systematics Analysis of data from StreetLight Data Insights, 2018-2022. Note: Relative trip activity is shown based on index values that correspond to the number of data samples captured at each fulfillment center location. The index value is not the actual number of trips or vehicles.

Figure 50 provides a trip distribution summary identifying the proportion of outbound truck trips that stay within the CAMPO region and the proportion that travels to counties outside of the region. The fulfillment centers in Hays County have the highest proportion of outbound trips (60.8%) that travel outside of the CAMPO region; among these trips, the top interregional destination is Comal County, located in the Alamo Area region to the south. Travis County has

the next highest with 36% of its trips going north towards Waco, with McLennan County the top destination. Williamson County has the lowest proportion of interregional trips (19.4%) and the top outbound destination is going north as well to Bell County.

Figure 50: Trip Distribution Summary for Fulfillment Center Locations in the Capital Area Region, 2018 - 2022



Source: StreetLight Data Insights, 2018-2022.

Table 23 provides a trip distribution summary for intraregional trips that originate and end within the CAMPO region. Most of the trips from the originating county stay within that county to serve the households and businesses there. Williamson County has the highest share of intra-county trips (84.2%). Hays has the lowest (53.4%), with a proportion of its trips serving Travis (25.5%) and Williamson counties (16.4%).

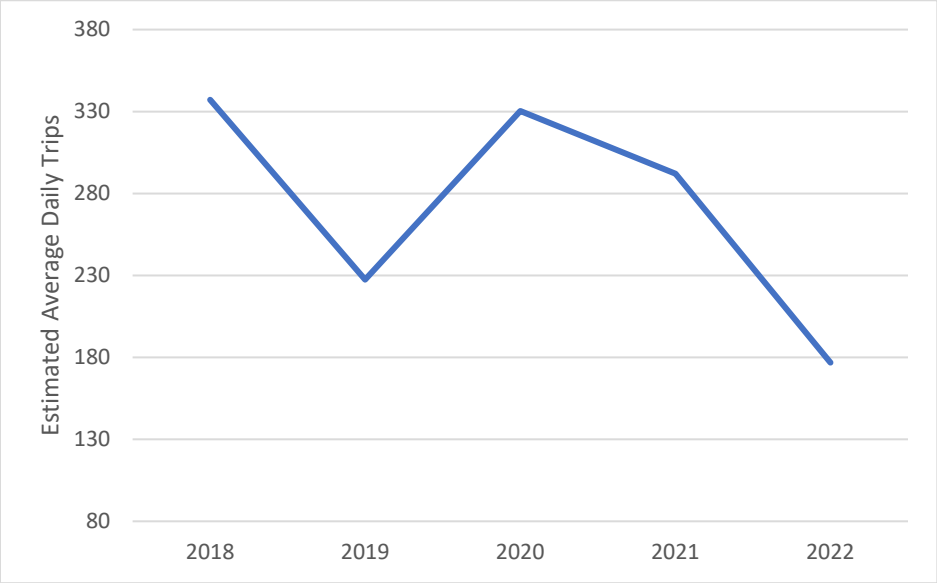
Table 23: Trip Distribution Summary for Fulfillment Center Trips within the Capital Area Region, 2018-2022

Originating County	Destination County						Total
	Bastrop	Burnet	Caldwell	Hays	Travis	Williams.	
Hays	0.3%	0.6%	3.8%	53.4%	25.5%	16.4%	100.0%
Travis	2.2%	0.8%	1.5%	10.9%	63.2%	21.4%	100.0%
Williamson	1.3%	0.1%	0.3%	1.5%	12.5%	84.2%	100.0%

Source: StreetLight Data Insights, 2018-2022.

Figure 51 shows the average daily trip activity by year across the 15 locations. Year 2019 saw a decline from the previous year and then increasing significantly in 2020 when stay-at-home restrictions were in effect for the COVID-19 pandemic. Trip activity remained elevated in 2021 while the Texas economy was just reopening, and then dropping drastically in 2022 when restrictions largely ended. The drop in activity in 2022 could be attributed to a slow down in consumer spending as the Federal Reserve initiated a series of interest rate hikes to curb persistent inflation. In addition, signs of recessionary headwinds in the overall U.S. economy also dampened consumer sentiments.

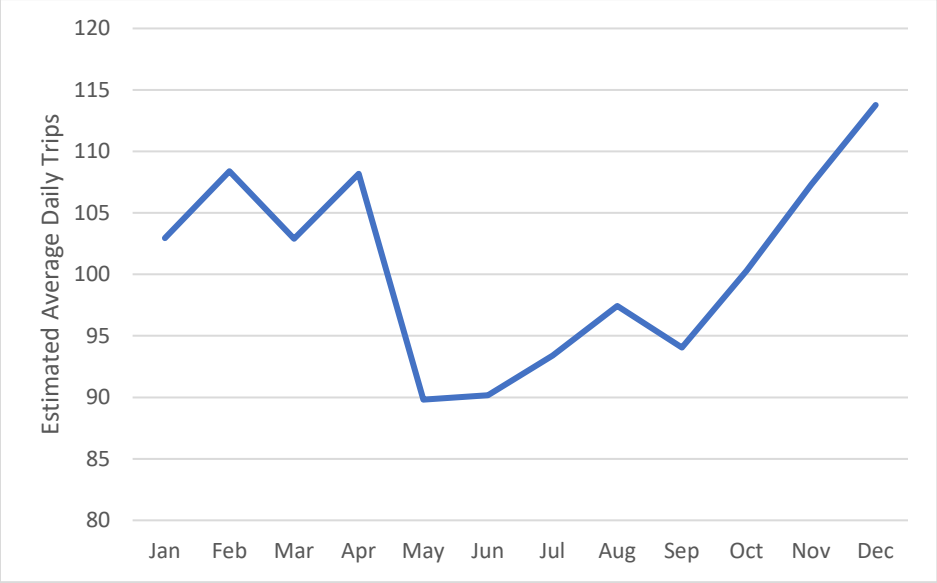
Figure 51: Average Daily Trips by Year for Capital Area Fulfillment Centers, 2018-2022



Source: StreetLight Data Insights, 2018-2022

Figure 52 shows the seasonal distribution of the average daily trip activity by month. The chart indicates that the peak holiday season begins in September and increases steadily until reaching the highest level of daily activity in December.

Figure 52: Average Daily Trip Activity by Month for Capital Area Fulfilment Centers, 2018-2022

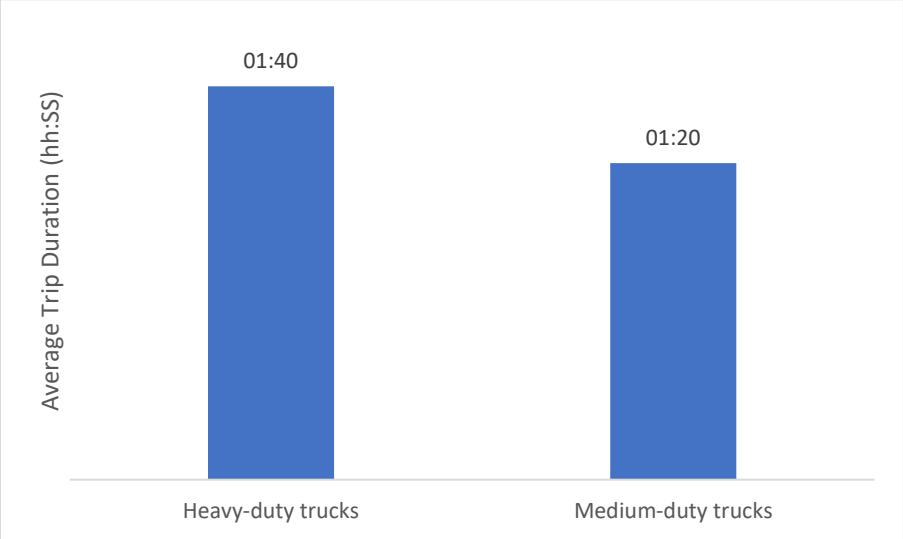


Source: StreetLight Data Insights, 2018-2022

Figure 53 compares the average trip duration for medium and heavy-duty trucks that serves the fulfilment center locations. Heavy-duty trucks includes Class 8 tractor-trailers used for long-haul

trips. On average, the trip duration was 25% longer than that of the medium-duty vehicles, which includes box trucks used for shorter distances.

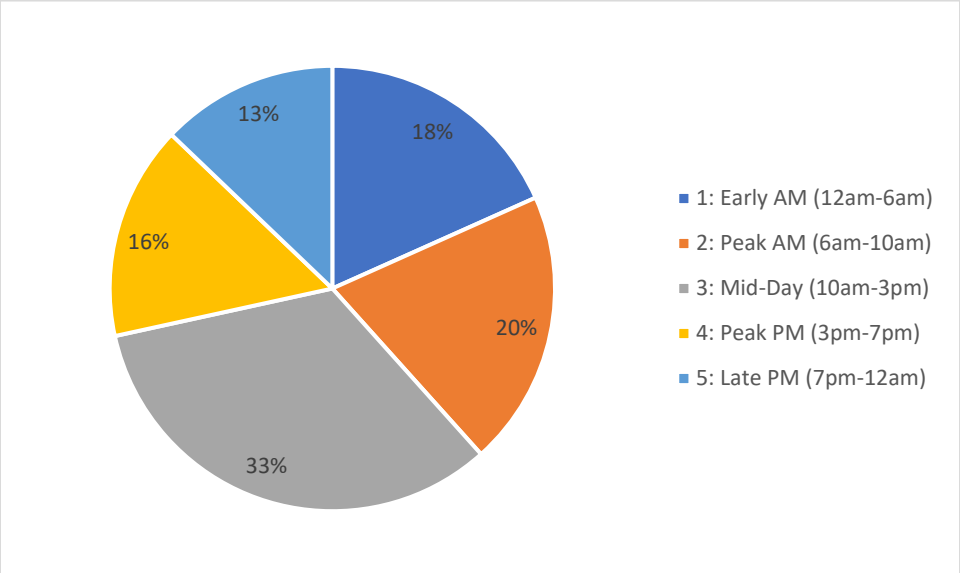
Figure 53: Average Trip duration for Medium and Heavy-Duty Trucks, 2018-2022



Source: StreetLight Data Insights, 2018-2022

Figure 54 shows a breakdown of daily trip activity by time of day. Most of the trip activity (33% of total) occurs in the mid-day period, followed by the morning peak period (20% of total). This suggests that trip activity is highest in the morning and mid-day periods when businesses are open and congestion is lower.

Figure 54: Average Daily Trip Activity by Time of Day for Capital Area Fulfilment Centers, 2018-2022



Source: StreetLight Data Insights, 2018-2022

Transportation Equipment

This section discusses the location of supply chains in Central Texas that supports transportation equipment industries in the state. The sectors include establishments in vehicle parts production and vehicle assembly or manufacturing. The vehicle parts sector includes manufacturing many materials and components necessary to produce finished automobiles, buses, and trucks, but not actual vehicles. Vehicle manufacturing includes receiving manufactured inputs, assembly of components into finished automobiles, buses, and trucks, and shipment of finished products through customer distribution channels.

Vehicle Parts Sector

The Texas Governor's Office of Economic Development and Tourism identifies nearly 140 Texas industries associated with vehicle parts manufacturing.[21] Employers from the directory located in the CAMPO region are listed in Table 24. Semiconductor manufacturers are well represented on the list and highlight the importance of the sector as a key supplier of electronic components for advanced manufacturing. The COVID-19 pandemic saw shutdowns in vehicle manufacturing due to the limited supply of semiconductors affected by disruptions to the global supply chain. The electronics industry in the CAMPO region is a major supplier of microprocessors used in various components and forms a close ecosystem with the vehicle manufacturing industry in Texas and across the border in Mexico.

Table 24: Texas Vehicle Parts Employers and Locations

Company	Description	Location
Corvac Composites	Airflow and water deflection systems	San Marcos
DANA Holding Corp.	Axles, driveshafts, transmissions	Cedar Park
Freescale Semiconductor	Automotive semiconductors	Austin
Microchip Technology	Automotive semiconductors	Austin
Samsung	Automotive semiconductors	Austin
Silicon Laboratories	Automotive semiconductors	Austin
Spansion	Automotive semiconductors	Austin
TASUS Texas Corp.	Plastic injection molding	Georgetown
Texas Instruments	Automotive semiconductors	Austin
US Farathane	Plastic components	Austin

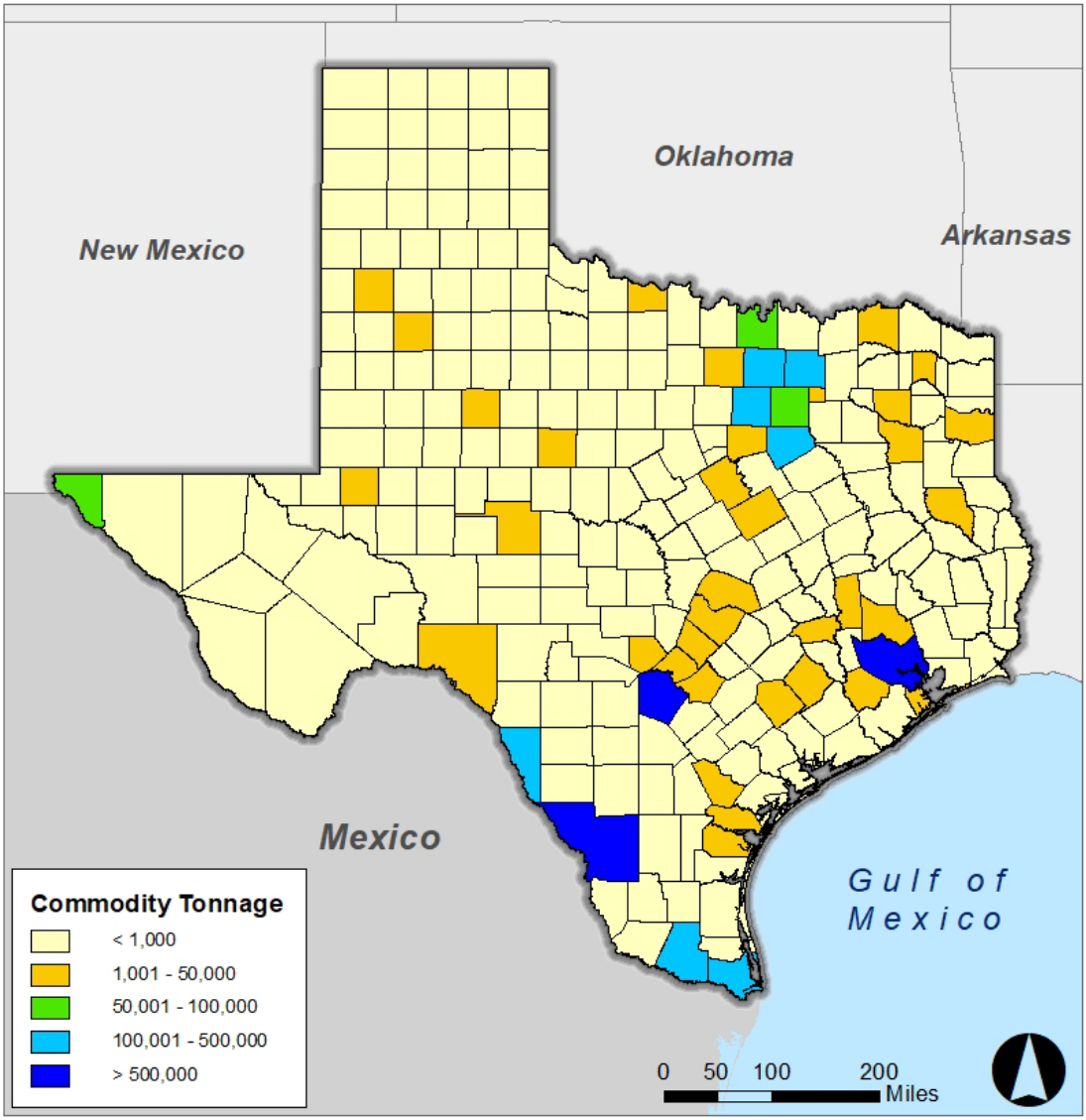
Source: https://gov.texas.gov/uploads/files/business/auto_parts_directory.pdf

Vehicle parts manufacturers are located in the major urban areas of the Texas Triangle and connected via IH 35, IH 10, and IH 45 and with supply chains in Mexico. Figure 55 shows the state's top originator of vehicle parts by county. Webb County in the Laredo area, Bexar County

[21] The complete directory is available at: https://gov.texas.gov/uploads/files/business/auto_parts_directory.pdf

in the San Antonio area, and Harris County in Houston have the highest outbound tonnage for vehicle parts. In the CAMPO region, manufacturers are located in Williamson, Travis, and Hays counties along the IH 35 corridor, which also connects with parts manufacturers and vehicle assembly plants in San Antonio and Dallas-Fort Worth.

Figure 55: Origins of Commodity Tonnage for Vehicle Parts, 2019

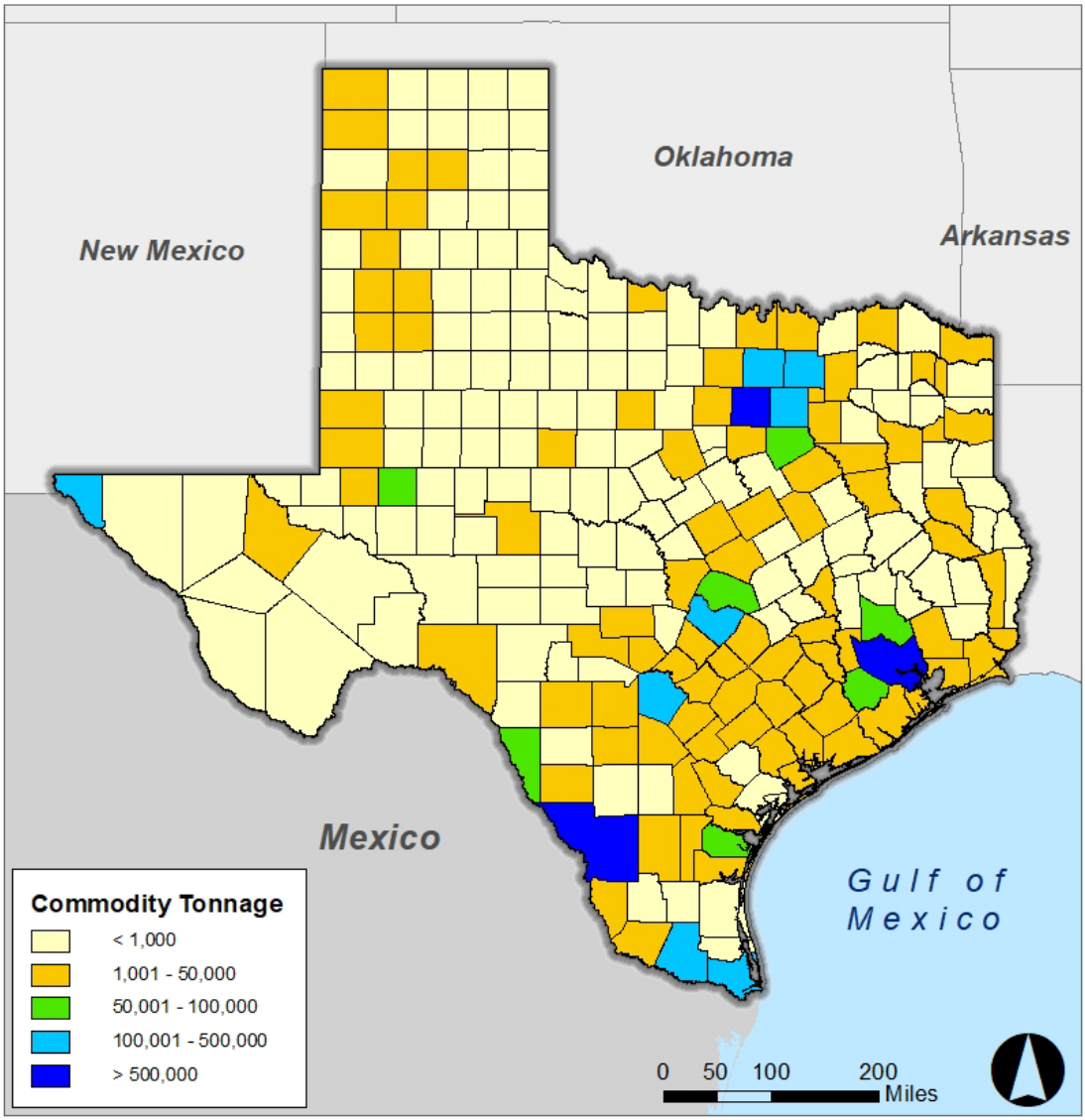


Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Figure 56Figure 56 shows the destination counties for vehicle parts. Similar to Figure 10, showing originating tonnage, the urban areas of the Texas Triangle and along the border with Mexico are the top destinations for parts, where it is assembled into other components or used in vehicle assembly. In the CAMPO region, Travis and Williamson counties are the top destinations

for vehicle parts. Once the Tesla plant becomes operational, the amount of inbound tonnage is expected to increase.

Figure 56: Destinations of Commodity Tonnage for Vehicle Parts, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

International trade is essential to producing and using vehicle parts by Original Equipment Manufacturers (OEMs). TTI analyzed the locations and relationships of Tier 1 parts manufacturers and OEMs in Texas and Mexico (see Figure 57). The TTI exhibit illustrates the clustering of facilities along IH 35 in Texas and its Federal Highway 85 counterpart in Mexico and the significance of Laredo connecting the two.

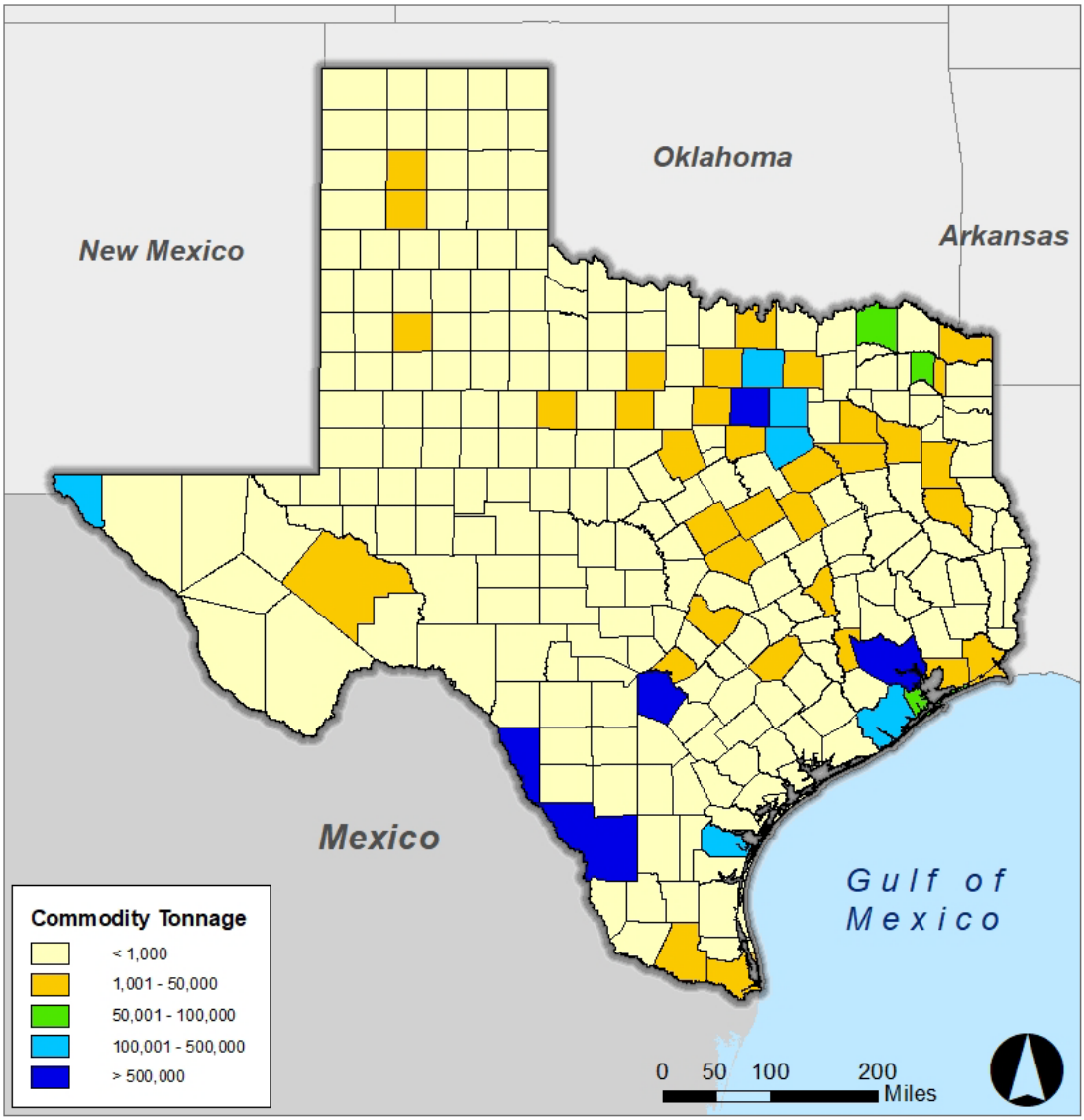
Figure 57: Auto and Motor Vehicle Parts Trade Manufacturing, Texas and Mexico

Source: Texas A&M Transportation Institute (TTI). "Moving Texas Exports: Examining the Role of Transportation in the Vehicle Parts Supply Chain." March 2016. Accessed from: https://policy.tti.tamu.edu/freight/moving-texas-exports/the-vehicle-part-supply-chain

Vehicle Manufacturing Sector

Figure 58 shows the counties that are leading originators of vehicle manufacturing tonnage. Webb, Maverick, and El Paso counties are located along the border and facilitate trade with Mexican supply chains. Within the Texas Triangle, Harris, Bexar, and Tarrant counties have major production facilities. In the CAMPO region, Travis County has the highest level of originating tonnage.

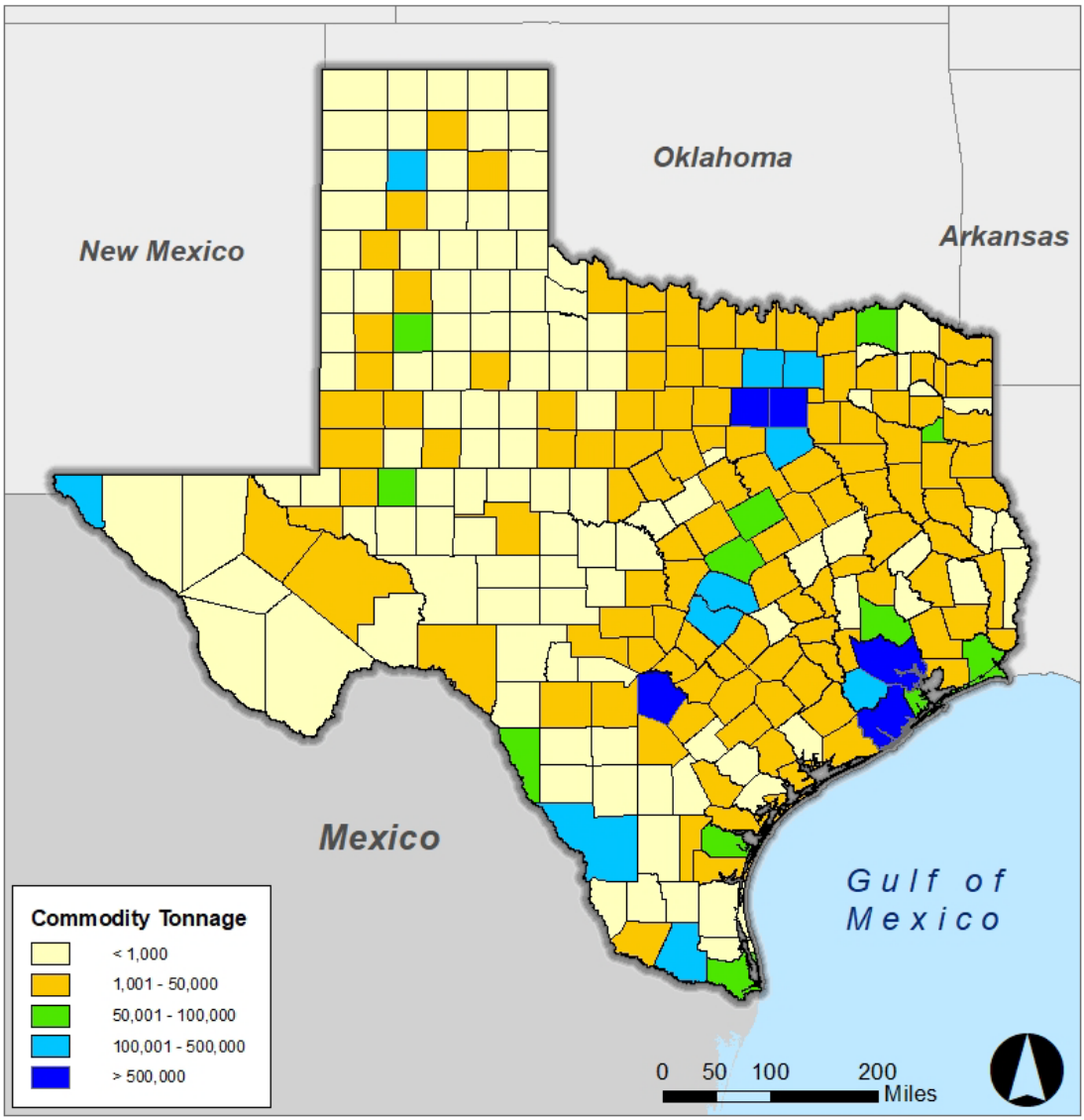
Figure 58: Origins of Commodity Tonnage for Vehicle Manufacturing, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Figure 59 shows the inbound tonnage for vehicle manufacturing by county. The urban areas of the Texas Triangle again dominate with the state's highest populations, where demand for assembled vehicles is the greatest. Similarly, Williamson and Travis counties in the CAMPO region have the highest level of destination tonnage.

Figure 59: Destinations of Commodity Tonnage for Vehicle Parts, 2019



Source: WSP analysis of 2019 Transearch database updated to reflect energy-related commodities (sand, brine, and water) and international water and air cargo.

Conclusion/Next Steps

The population and economic growth in the CAMPO region is increasing freight demand on the multimodal network. This report has provided an assessment of the current conditions of the freight network in the six counties comprising the region. By establishing a baseline understanding of the network's performance and identifying areas of concentrated freight activity, this analysis serves as a valuable reference point. Furthermore, this examination of existing conditions will inform the evaluation of trends and opportunities that will shape the future of regional freight movement. It is crucial to address these challenges and leverage the identified opportunities to ensure a resilient and efficient multimodal freight network that can accommodate the growing demands of the region's population and economy.

CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Existing Conditions

Appendix A: Existing Land Use Assessment

Final 1: July 5, 2023

Bastrop County

- 888 square miles (land only)
- Cities: Bastrop (county seat), Mustang Ridge, Elgin, Smithville
- Major highways: US 290, SH 21, SH 71, SH 95, SH 304

Freight generators are scattered throughout Bastrop County, mainly along SH 71. According to Bastrop County's Economic Overview Report, the pharmaceutical industry cluster has the highest relative concentration.[1] The report defines a cluster as a geographic concentration of interrelated industries or occupations. Employment in the pharmaceutical industry was projected to expand in the region by about 0.7% per year over the next ten years. The largest employment sector identified in the county was retail trade. The next-largest sectors in the area were educational services and accommodation and food services. The National Guard's Camp Swift Army Base is in the northern portion of Burnet County on SH 95 and is the home of the 136th Combat Arms Training Regiment and Texas National Guard Training Center of Excellence.[2] The Guard also uses the base as a storage and training facility.

Bastrop

The Bastrop Comprehensive Plan Update Existing Land Use Map (see Appendix B) shows minimal industrial land use within the Bastrop city limits.[3] However, the city has a sizeable ETJ area, including substantial portions of land along SH 21, SH 71, and SH 95. In the Existing Land Use Map, nine acres are designated light industrial, and 215 in the ETJ are designated heavy industrial. In addition, there are 62 acres in the city limits designated light industrial. Currently, the freight uses identified as part of the regional supply chain in Bastrop County are along SH 71/SH 21.

The land use data in the comprehensive plan is twenty years old. Therefore, additional sources were used to identify areas of freight-intensive uses. According to Bastrop's Economic Development website, the area has grown tremendously in the manufacturing, media and entertainment, bio and life sciences, and tourism and hospitality industries. Bastrop has a 263-acre business park zoned commercial/industrial use located south of SH 71/SH 21 and east of the Colorado River. Johnson Architectural Metal Company's (JamCo, Inc.) 40,000-square-foot facility is in the business park. Designed Security Inc. is another manufacturing business located in Bastrop, close to SH 95/Hawthorne St.[4]

Bastrop's bio and life science industries include the MD Anderson Cancer Science Park, The University of Texas MD Anderson Cancer Center (both near SH 95/FM 2336), Agilent Technologies (on SH 71), The Coghlan Group (SH 71/SH 21), and ARQ Genetics (just north of TX Loop 150). All are within the city limits.

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[1] Economic Overview Bastrop County, October 2016. Accessed at Economic Overview - Bastrop County
[2] Texas Military Department. Camp Swift, 2016-2023. Accessed at Camp Swift
[3] Bastrop Comprehensive Plan Update (2016-2036), p. 5-4. November 2016. Accessed at Bastrop Existing Land Use 2016
[4] Bastrop Economic Development. Target Industries, 2023. Accessed at Target Industries

In 2021, The Boring Company purchased 73 acres in Bastrop County to build an 80,000-square-foot warehouse and manufacturing facility at 130 Walker Watson Road north of the SH 71 and SH 21 westbound split.[5] The Bastrop County Commissioner's Court tabled the conditional use permit in February 2022.[6] As a result, the project has not been approved as of May 2023.

Burnet County

- 994 square miles (land only)
- Cities: Bertram, Burnet (county seat), Cottonwood Shores, Double Horn, Granite Shoals, Highland Haven, Horseshoe Bay (mostly in Llano County), Marble Falls, and Meadowlakes
- Major highways: US 183, US 281, SH 29

Burnet County has several freight generators sporadically located along US 281.[7] The agriculture and tourism industries are the main economic drivers.[8]

Burnet

The City of Burnet has an industrial land use area along Houston Clifton Drive, just north of the Burnet Municipal Airport (see Appendix B).[9]

Marble Falls

Marble Falls has a few manufacturing businesses located along US 281.[10] The city has 341 acres of industrial land use within the city limits and 93 acres in the ETJ.[11] The city's Zoning Map only has two industrially zoned parcels at the corner of Granite Mountain Trail and S. Avenue. S (see Appendix B).

The Marble Falls Economic Development Corporation references several planned business and industrial parks for manufacturing, distribution, regional service companies, regional corporate headquarters, and professional service firms.[12] These include:

- Marble Falls Business & Technology Park – a 300-acre park with immediate access to US 281.
- Gateway Business Park – a light manufacturing and office park with access to US 281.

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[5] Ashbrook, M. *Elon Musk's The Boring Company purchases land in Bastrop outside Austin,* July 9, 2021. KVUE News. Accessed at Elon Musk's The Boring Company
[6] O'Kane, S. and McBride, S. *Elon Musk's Tunneling Company Hits Roadblock on Texas Plans,* March 1, 2022. Bloomberg News. Accessed at Elon Musk Tunneling Company
[7] Data Axle
[8] Burnet County, Texas. *Welcome to Burnet County, Texas,* 2023. Accessed at Burnet County Texas
[9] City of Burnet. Zoning Map. February 23, 2021. Accessed at Burnet Zoning Map
[10] Data Axle
[11] Halff Associates, Inc. Marble Falls Comprehensive Plan Update 2016, pg. 59. June 7, 2016. Accessed at Marble Falls Comprehensive Plan Update
[12] Marble Falls Economic Development Corporation. May 2023. Access at Marble Falls Business Industrial Parks

- Industrial Boulevard Park – a light manufacturing park with access to FM 1431 for east-west shipping.
- Commerce Business Park – a light manufacturing business park for start-up manufacturing and distribution companies.

Marble Falls is updating their Comprehensive Plan, which may result in an increase or decrease of land designated for industrial use. In addition, the plan will address physical development, redevelopment, and future direction of growth within the Marble Falls planning area.[13] The plan is expected to be complete in fall 2023.

Caldwell County

- 545 square miles (land only)
- Cities: Lockhart (county seat), Niederwald, Martindale, Luling, San Marcos (mainly in Hays County)
- Major highways: IH-10, US 90, US 183, SH 80, SH 130

Lockhart

Lockhart is situated along SH 130 and has access to major highways, including I-10 and I-35. There are two large industrial land-use clusters (see Appendix B).[14] The first is near the intersection of SH 130 and SH 142. A second area is near SH 20 and FM 1322. Much of the land on the city's periphery is designated as agricultural/rural development land use.

According to the Lockhart Economic Development Corporation (LEDC), Lockhart targets several industries, such as auto parts, metal, and electronic manufacturing, food and beverage processing, logistics and distribution, pharmaceutical and medical supplies, and medical device manufacturing.[15]

A recently added freight-intensive use in Lockhart is Iron Ox, a hydroponic farm.[16] The 535,000-square-foot facility broke ground in the spring of 2021 and is located on 25 acres along FM 20. The company operates autonomous robotic greenhouses to grow fresh and pesticide-free farm products. It plans to distribute its products to customers and communities throughout Texas. The LEDC also has a 75-acre industrial park on SH 130 located about 27 miles south of Austin-Bergstrom International Airport and Tesla's new Giga Texas facility. The industrial park is on the city's west side adjacent to SH 130, approximately 10 miles from I-35 and 17 miles from I-10.[17]

[13] City of Marble Falls. Marble Falls Comprehensive Plan Update, May 2023. Accessed at Comprehensive Plan Update
[14] Lockhart 2020 Land Use Plan. Figure 3.2. Access at Land Use Plan
[15] City of Lockhart Economic Development Corporation. May 2023. Accessed at Lockhart Economic Development
[16] Fisher, L. *Iron Ox Farm Optimizes Indoor Farming with AI and Robots,* April 19, 2022. The Austin Chronicle. Accessed at Iron Ox article
[17] City of Lockhart Economic Development Corporation. May 2023. Accessed at Lockhart Economic Development

Hays County

- 680 square miles (land only)
- Cities: San Marcos (county seat), Niederwald, Uhland, Buda, Dripping Springs, Hays, Kyle, Mountain City, Wimberley, Woodcreek
- Major highways: I-35, US 290, SH 21, SH 80

Hays County has a concentration of freight generators along I-35 from McCarty Lane to SH 123. In addition, several freight generators are located along US 290 in northern Hays County, including in Dripping Springs. Finally, freight generators are sparsely located in the remaining southern portion of the county.[18]

Dripping Springs

Dripping Springs has few freight-intensive uses. The city's zoning map has an industrial-zoned parcel on Springs Lane just north of W US 290 (see Appendix B).[19] The CAMPO 2045 Regional Arterials Study notes the land use along RM 12 is mostly vacant/rural. However, there is commercial development at the corner where RM 12 joins US 290. Meanwhile, Dripping Springs and RM 12 have many breweries and distilleries.[20]

The City of Dripping Springs initiated a Comprehensive Plan update in April 2022, which may result in an increase or decrease of land designated for industrial use. The city's website indicates the plan will help guide real estate, infrastructure investments, economic development, and zoning.[21] The public input process will continue through 2023.

San Marcos

The San Marcos Comprehensive Plan's Preferred Scenario Map designates land use as high intensity, medium intensity, and employment areas (see Appendix B.)[22] The land use corridors are conservation, employment, and mixed-use.

Large clusters of high-intensity land use are in the downtown, midtown, and entertainment areas. For example, downtown is located at I-35 and SH 123, midtown is at I-35 and SH 80, and entertainment is at I-35 and Aquarena Springs Drive.

The Preferred Scenario Map also shows both sides of the interstate are designated medium intensity and employment areas along I-35 from the city's southern end to just south of SH 123 near Bintu Drive.[23] This area includes the medical district and Texas State University. The San Marcos Airport is on the city's eastern side along SH 21. The land use surrounding the airport is

[18] Data Axle
[19] City of Dripping Springs Citywide Zoning Map. January 2017. Accessed at Dripping Springs Planning & Zoning
[20] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 422. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[21] City of Dripping Springs. *Dripping Springs Launches Comprehensive Plan Initiative,* April 18, 2022. Accessed at Comprehensive Plan Initiative
[22] City of San Marcos Preferred Scenario. April 2018. Accessed at Comprehensive Plan Map
[23] City of San Marcos Preferred Scenario. April 2018. Accessed at Comprehensive Plan Map

designated as low density. This corridor has a significant volume of undeveloped land, with just over 250 acres of vacant lots and/or qualified open space.[24]

The city's zoning map shows heavy and light industrial zoning districts on the west side of I-35 at the southern end of San Marcos (see Appendix B).[25] These properties have direct access to I-35, and adjacent land is in the ETJ. Heavy and light industrial tracts are also located east of I-35, near McCarty Lane, SH 110, Clovis Barker Road, Civic Center Loop, and Wonder World Drive. There is a light industrial area on the north side of San Marcos west of I-35 along Carlson Circle and an area of light industrial east of I-35, just north of the Blanco River.

As of April 2023, the city is processing an annexation and zoning request for land east of FM 110, between SH 80 and the Union Pacific Railroad Tracks. The site is east of the alignment for the new FM 110 loop. The land is part of an approved Development Agreement called SMART (San Marcos Air, Rail, and Truck) Terminal. Based on the SMART Terminal Amendment FAQ on the City of San Marcos website, the project is requesting annexation into San Marcos and heavy industrial zoning.[26] The current SMART Terminal agreement covers approximately 2,020 acres of land. One of the developer agreements is the construction of public improvements, including additional roadways to carry truck traffic to and from FM 110/I-35. This project is still under review as of May 2023.

The CAMPO 2045 Regional Arterials Study evaluated the segment of Wonder World Drive from Hunter Road to I-35, including land use information.[27] Wonder World is located on the southern side of San Marcos and runs northwest from I-35. The current land use is oriented toward industrial and warehouse-based commercial, with some multi-family residential. The current zoning along Wonder World Drive is primarily commercial and industrial. Additional heavy and light industrial-zoned properties are located on the west side of I-35 north and south of Wonder World Drive.

This corridor also has approximately 70 acres of vacant lots. The study notes if the 70 acres of undeveloped property are developed consistently with the future land use plan and zoning, over one million square feet of new commercial and industrial space could be developed.[28]

In 2022, the San Marcos City Council annexed 40 acres of land in its extraterritorial jurisdiction on Posey Road between Transportation Way and I-35.[29] The parcel along Posey Road is zoned commercial, and the parcel along Transportation Way is industrial. Heavy industrial zoning was

[24] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 426. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[25] San Marcos, Current Zoning Districts. September 2020. Accessed at San Marcos Zoning Districts
[26] City of San Marcos. SMART Terminal Amendment FAQ, April 2023. Accessed at SMART Terminal
[27] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 334. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[28] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 335. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[29] Weilbacher, E. *San Marcos City Council approves annexation, rezoning for two industrial, heavy commercial areas,* May 6, 2022. Community Impact Newspaper. Accessed at San Marcos City Council approves annexation

recommended to be compatible with the area's surrounding land use, including an Ingram Ready Mix concrete plant, Transdev transportation services, and other industrial uses. The zoning allows for a significant increase in commercial and industrial development on the fringes of San Marcos.

Approximately 65 acres of a 112-acre property near Clovis Barker Road and SH 123 intersection was rezoned from a "future development district" in 2022 to a "light industrial district." Warehouses, manufacturing facilities, and vacant properties surround the property.

Travis County

- 990 square miles (land only)
- Cities: Austin (county seat) (small parts in Hays and Williamson Counties), Cedar Park (mainly in Williamson County), Elgin (mostly in Bastrop County), Leander (mainly in Williamson County), Mustang Ridge (small parts in Caldwell and Bastrop Counties), Pflugerville (small amount in Williamson County), Round Rock (mainly in Williamson County), Bee Cave, Creedmoor, Jonestown, Lago Vista, Lakeway, Manor, Rollingwood, Sunset Valley, West Lake Hills
- Major highways: I-35, US 183, US 290, SH 71, TX Loop 1 (Mopac Expressway), SH 45, SH 130

Austin

Austin has an extremely high concentration of freight-intensive uses, especially along TX Hwy Loop 1 (Mopac Expressway), I-35, US 290 W, SH 71, US 290 E, Research Blvd., and W. Parmer Lane. In October of 2021, the City of Austin Planning and Zoning Department conducted an "Analysis of Industrial Land Use and Zoning" as part of a Comprehensive Plan Joint Committee Briefing.[30] Using 2018 data, the study notes 11,657 Acres, or 6.6% of Austin, were zoned for industrial use. Only 38% of industrial-zoned land was used for industrial purposes. Approximately 27% of Austin is undeveloped (see Appendix B). In the past twenty years, about 1,900 acres were rezoned from industrial to non-industrial use.

The analysis identifies industrial-zoned areas strategically located near highways or close to the Austin-Bergstrom International Airport. Airport cargo facilities are on the property's northern end, including those for FedEx, DHL, and UPS.

The analysis also identified eight industrial clusters within Austin (see Appendix B):

- North Research Boulevard (US 183/Research Park/Technology Blvd.)
- North Burnet/Gateway (on US 183 near North Mopac Expressway/Hwy 1)
- Tech Ridge (near I-35/Tech Ridge/Palmer Lane)
- US-290 E (at US 183/I-35)
- Near East
- US-183

[30] Water, M., & Engstrom, J. Analysis of Industrial Land Use and Zoning in Austin, Texas, September 2020. Accessed at Presentation to Planning Commission

- St. Elmo
- Ben White (along SH 71 between I-35 and US 183, SH 71/SH 130)

The CAMPO 2045 Regional Arterials Study included Parmer Lane (FM 734).[31] Parmer Lane is in eastern Travis County in Austin's ETJ and is a significant roadway connecting SH 45 to SH 130. The land use in this area is primarily vacant or rural, with some single-family uses. Parmer Lane passes through highly developed areas and connects major job centers in Travis and Williamson counties.

Parmer Lane is home to the campuses of Electronic Arts (EA), Apple/Oracle, Tech Ridge, Dell South, and Samsung. Austin is also home to the Tesla Giga Texas vehicle assembly plant, where the company will build its Cybertruck, semi-truck, and Model Y. The 2,000+ acre site is adjacent to SH 130 near Austin-Bergstrom International Airport.

Austin's Land Use Inventory Map identifies additional large clusters of industrial land use not included in either the "Analysis of Industrial Land Use and Zoning" or the 2045 Regional Arterials Study (see Appendix B):[32]

- US 290 W/SH 130
- US 183 near FM 969
- FM 2222 and FM 620

Williamson County

- 1,118 square miles (land only)
- Cities: Georgetown (county seat), Austin (mostly in Travis County and a small part in Hays County), Bartlett (partly in Bell County), Cedar Park (a small part in Travis County), Leander (small amount in Travis County), Pflugerville (mostly in Travis County), Round Rock (small amount in Travis County), Thorndale (mostly in Milam County), Coupland, Florence, Granger, Hutto, Jarrell, Leander, Liberty Hill, Taylor, Thrall, Weir
- Major highways: I-35, US 79, US 183, SH 29, SH 45, SH 95, SH 130, Loop 1, SH 195, 183A Toll Road

There is a high concentration of freight-intensive uses in Williamson County along I-35 and US 183.[33] The highest concentration is in Round Rock. In addition, US 183 has numerous uses from the southern county line to Leander.

Round Rock

Most industrial land uses in Round Rock are located along or close to I-35. Many are manufacturing businesses. Most notably, Dell headquarters is in Round Rock near I-35 and Louis Henna Blvd (SH 45.)

[31] Capital Area Metropolitan Planning Organization. Regional Arterials Concept Inventory, p. 325. August 2019. Accessed at FINAL-CAMPO-Regional-Arterials-Concept-Inventory
[32] City of Austin Land Use Inventory. March 2023. Accessed at Austin Land Use Inventory map
[33] Data Axle

According to the Round Rock Comprehensive Plan 2030, the city has 663 acres of industrial land use, with only 2% being developed.[34] The property at the southwest corner of I-35 and E. New Hope Drive is in the ETJ and has a mining future land use designation (see Appendix B).

Taylor

Taylor currently has a small number of freight-intensive users. However, Samsung will open a new semiconductor chip fabrication plant in Taylor.[35] The plant will be located near US 79 and CR 401. Construction was scheduled to begin in 2022 and is expected to be completed in 2025. As a result, the City of Taylor is planning to update its Comprehensive Plan in anticipation that the considerable investment by Samsung will influence the growth and development of the small town.[36]

Cedar Park

Cedar Park is located on US 183, north of SH 45. Cedar Park's zoning map shows a few heavy industrial zones on the city's western side (see Appendix B).[37]

A light industrial-zoned property is home to Brushy Creek Corporate Center. The two-building campus sits on a 16-acre site. The property's current tenants include manufacturing, research, and development companies.[38]

Shop LC is relocating its headquarters from Austin to Cedar Park.[39] The home shopping network will begin construction of its headquarters this year. Construction was expected to start in early 2023, with anticipated completion in mid-2024. The 200,000-square-foot facility will be constructed near East New Hope Drive and North Bell Boulevard (US 183).

Georgetown

The Georgetown 2030 Plan indicates that almost 300 acres are designated for light, heavy industrial uses, and approximately 10,000 acres are designated for light and heavy industrial uses in the ETJ (see Appendix B).[40] The most prominent heavy industrial land use areas are at the city's southern end on I-35, Leander Road, and SH 29. In addition, numerous smaller areas are scattered in the northern part of the city between SH 195 and CR 234. They include quarries and stone suppliers.

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[34] Round Rock 2030 *Developing Our Future*, p. 111. June 2020. Accessed at Adopted Comprehensive Plan
[35] Falcon, R. and Madden, M. *$17B Samsung plant officially coming to Taylor, Texas,* November 23, 2021. KXAN Austin News. Accessed at Samsung KXAN Austin News
[36] Ortiz, M. *Samsung development leaves residents questioning Taylor's infrastructure plans,* December 12, 2021. Spectrum News 1. Accessed at Taylor's infrastructure plans
[37] Cedar Park Zoning Map. April 2023. Accessed at Cedar Park Atlas
[38] Aquila. *Dogwood Industrial Properties Acquires Brushy Creek Corporate Center in Cedar Park, Texas,* March 23, 2023. Accessed at Brushy Creek Corporate Center
[39] *Shop LC moving headquarters from Austin to Cedar Park,* November 19, 2021. KVUE News. Accessed at Shop LC to move headquarters
[40] Georgetown 2030 Plan Land Use, p. 28-29. March 2020. Accessed at Georgetown 2030 Plan

Georgetown Logistics Park is a new industrial park with 625,000 square feet of development for larger tenant warehouse space driven by e-commerce, last-mile delivery, and manufacturing tenants.[41] The development is at the southwest corner of I-35 and SH 130 along Aviation Drive, just east of Georgetown Municipal Airport. It is suited to larger warehouse/distribution and manufacturing tenants in the greater Central Texas region.

he Capital Area region, a six-county metropolitan area in Central Texas, has experienced rapid growth and economic development in recent years. A key aspect of this growth is an increase in freight and the movement of goods by truck, rail, pipeline, and air. Efficient freight movement is crucial to the competitiveness of the region's businesses and industries, and the overall way of life for its residents. Recognizing this importance, the Capital Area Metropolitan Planning Organization (CAMPO) is developing a Freight Plan that will highlight the importance of freight to the region and also inform the Regional Transportation Plan (RTP) by identifying policies, strategies, and investments to enhance the performance and safety of the multimodal freight network.

[41] Widner, C. *Stonelake breaks ground on massive Georgetown logistics park,* August 1, 2022. Urbanize Austin. Accessed at Georgetown logistics park

CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Existing Conditions

Appendix B: Land Use Maps

Final 1: July 5, 2023

Industrial Cluster Typology for Austin

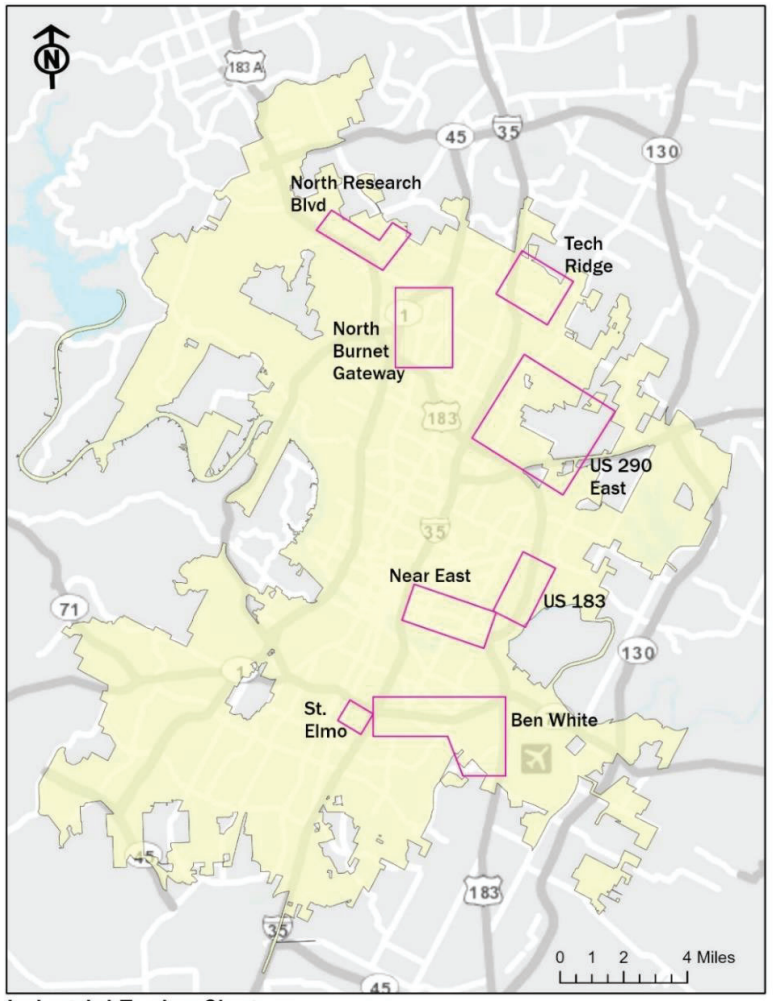
Identified 8 industrial clusters within Austin

Based on best practices from Las Angeles, CA and Philadelphia, PA staff developed an industrial cluster typology

Protection

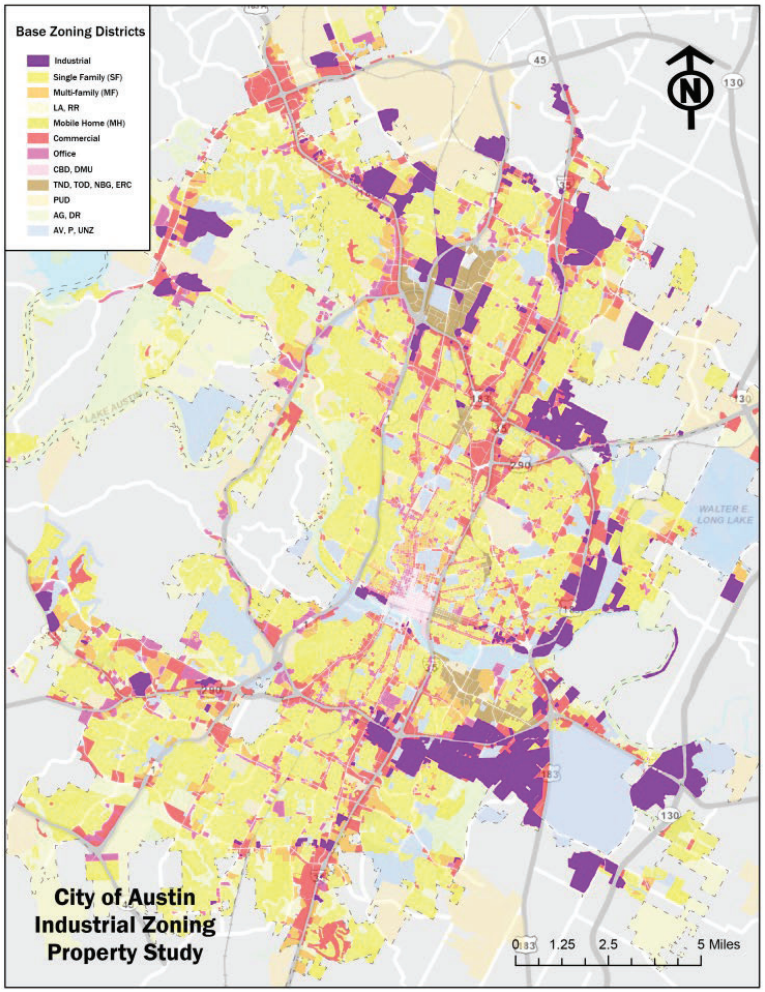
Intensification

Transition



Current State of Austin's Industrially-Zoned Land

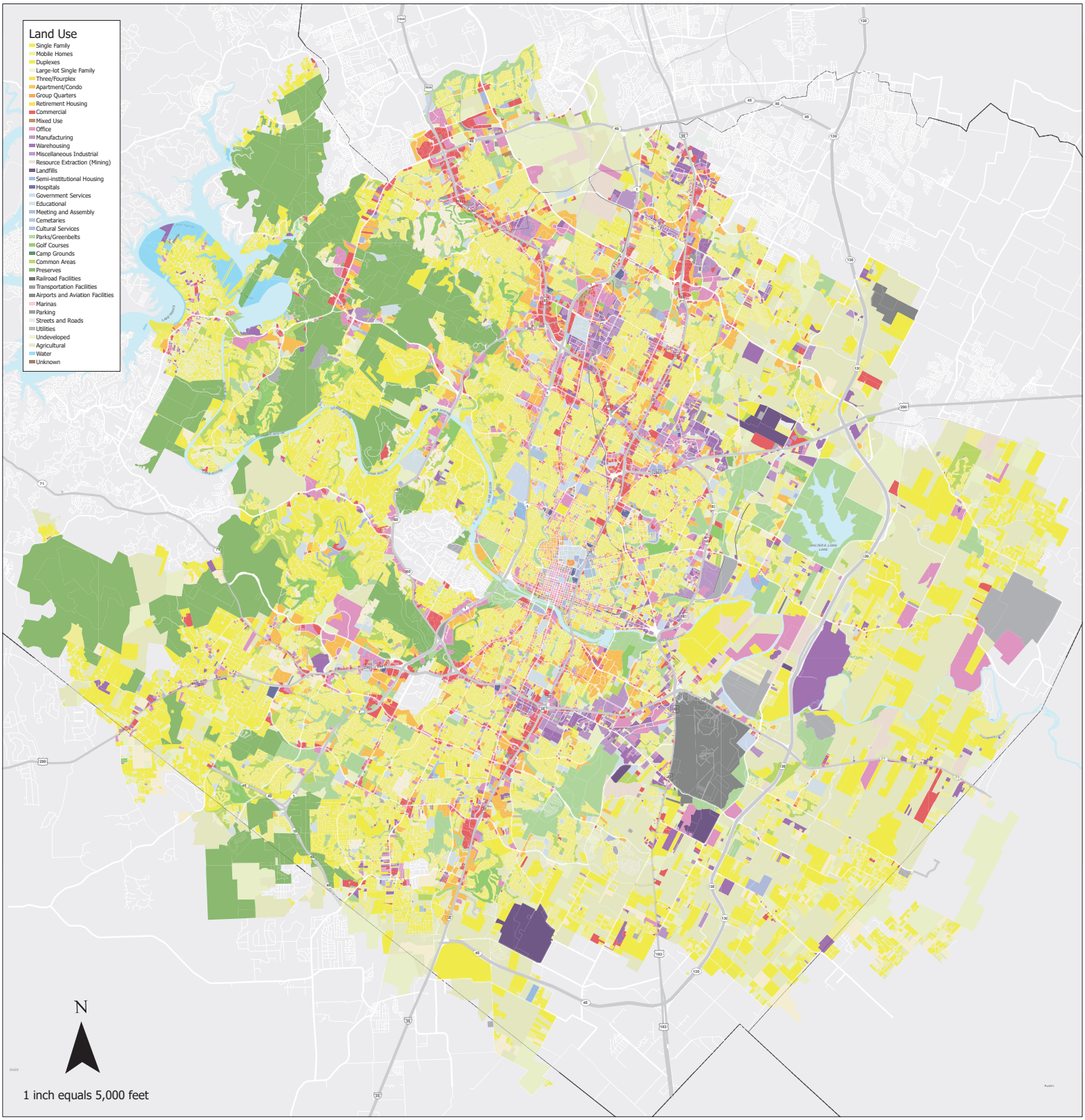
Map #1 Base Zoning Districts



11,657 Acres or 6.6% of Austin zoned for industrial (2018)

Only 38% of Industrial zoned land used for industrial uses

- Undeveloped 27%
- Office 12%



Date Exported: 3/30/2023

Land Use Inventory

CITY OF AUSTIN
EXTRA-TERRITORIAL JURISDICTION

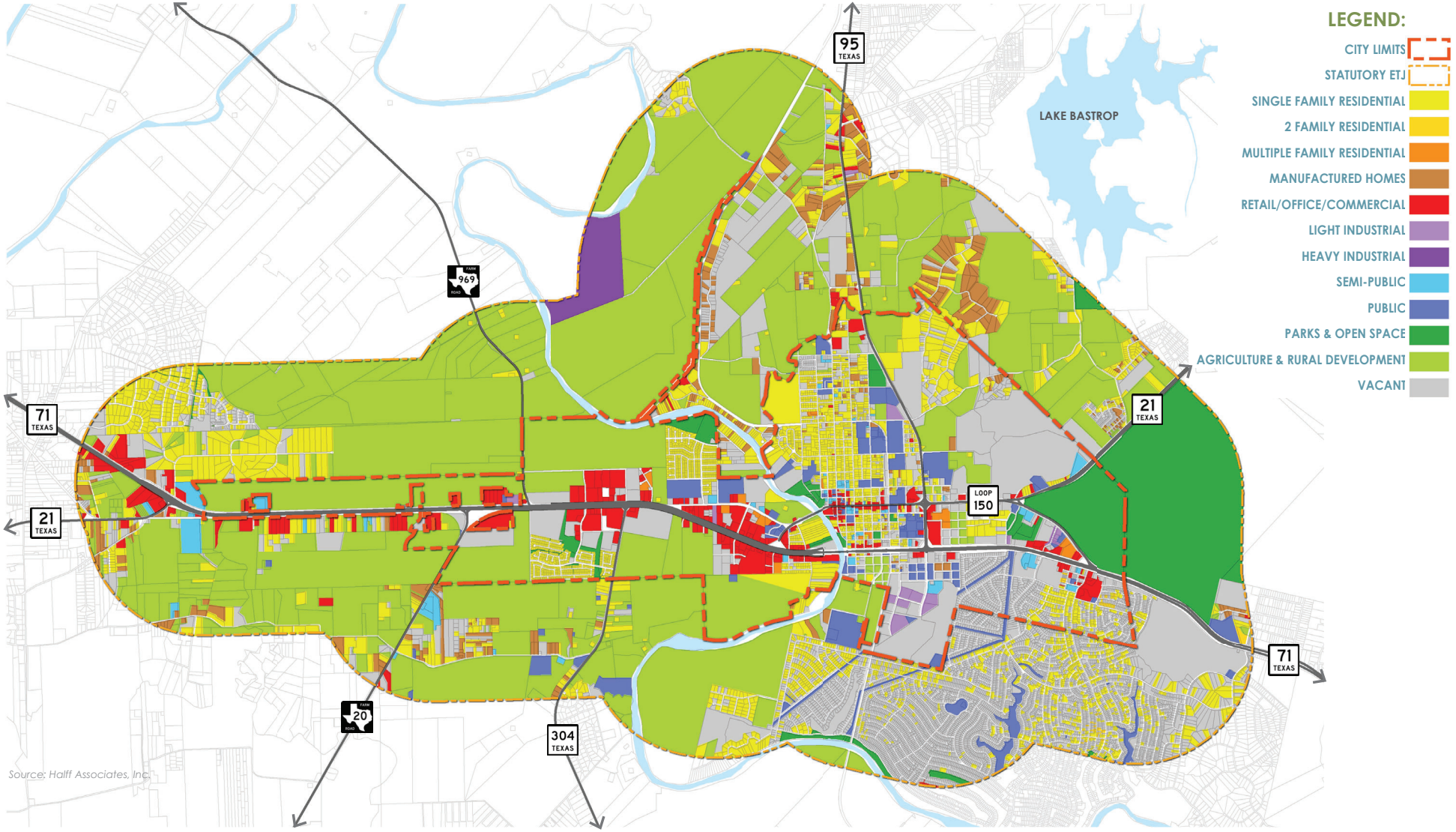
This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

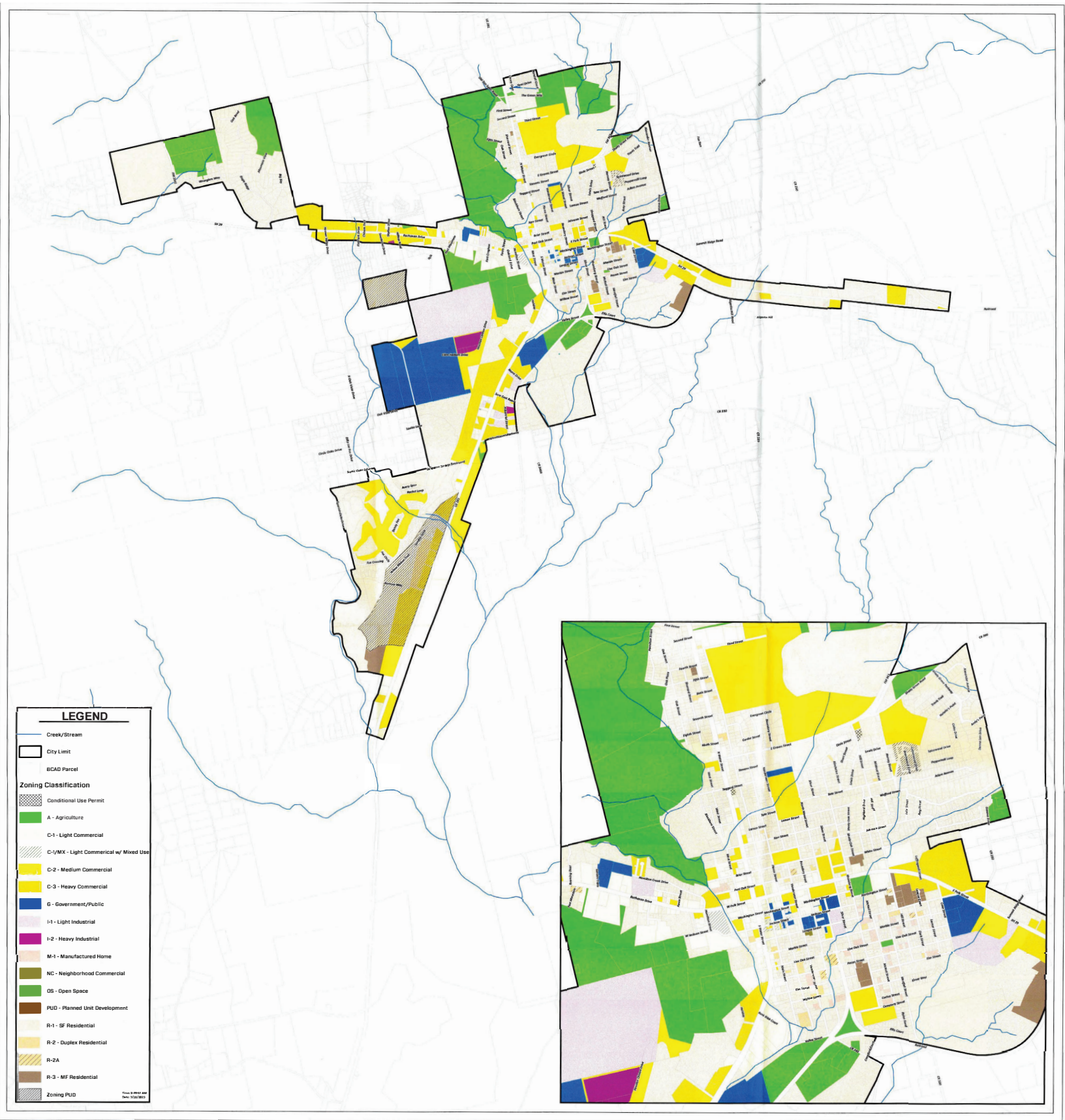
This product has been produced by the Development Services Department for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.

The land use inventory is maintained in a geographic information system (GIS) that electronically stores parcel boundaries and land use information. The inventory is a snapshot of how land was being used at time of export. However, different source materials mean that the data may reflect different timeframes.

BASTROP EXISTING LAND USE (2016)

MAP 5-A:





QUIDDITY

CITY OF BURNET, TEXAS

The official Zoning Map of the City of Burnet, Texas, accepted by the City Council of the City of Burnet

Signed _____ (Mayor)

CITY OF BURNET

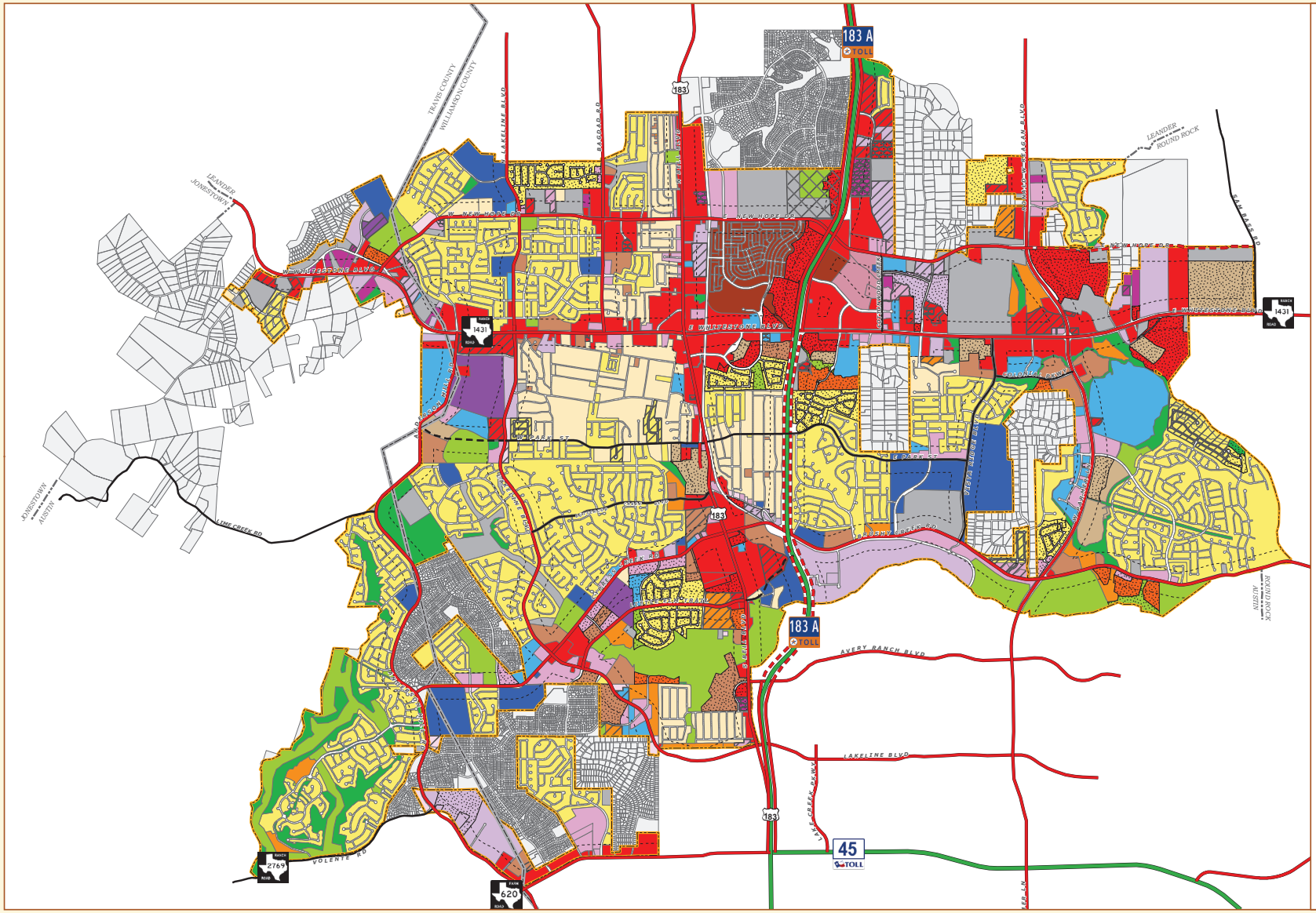
Official Zoning Map - February 28, 2023

0 0.25 0.5 0.75 1 Mile

VICINITY MAP
Scale: 1 inch equals 100 miles

CITY OF CEDAR PARK

OFFICIAL ZONING DISTRICTS



ZONING DISTRICTS

- DR - DEVELOPMENT RESERVE
- ES - ESTATE RESIDENTIAL
- SR - SUBURBAN RESIDENTIAL
- SU - SEMI URBAN RESIDENTIAL
- UR - URBAN RESIDENTIAL
- MF - MULTIFAMILY RESIDENTIAL
- NB - NEIGHBORHOOD BUSINESS
- LB - LOCAL BUSINESS
- GB - GENERAL BUSINESS
- PO - PROFESSIONAL OFFICE
- HC - HEAVY COMMERCIAL
- LI - LIGHT INDUSTRIAL
- HI - HEAVY INDUSTRIAL
- H - HOSPITAL
- PS - PUBLIC SERVICES
- OG - OPEN SPACE GREENBELT
- OR - OPEN SPACE RECREATIONAL
- MU - MIXED USE
- TC - TOWN CENTER
- PA - PLANNING AREA

SPECIAL DISTRICTS

- PD - PLANNED DEVELOPMENT
- CONDITIONAL OVERLAY
- ENTERTAINMENT CENTER
- SPECIAL USE PERMIT
- MAJOR CORRIDORS

- CITY LIMITS
- MAJOR ARTERIAL
- MAJOR ARTERIAL (PLANNED)
- MINOR ARTERIAL
- MINOR ARTERIAL (PLANNED)
- TOLLWAY

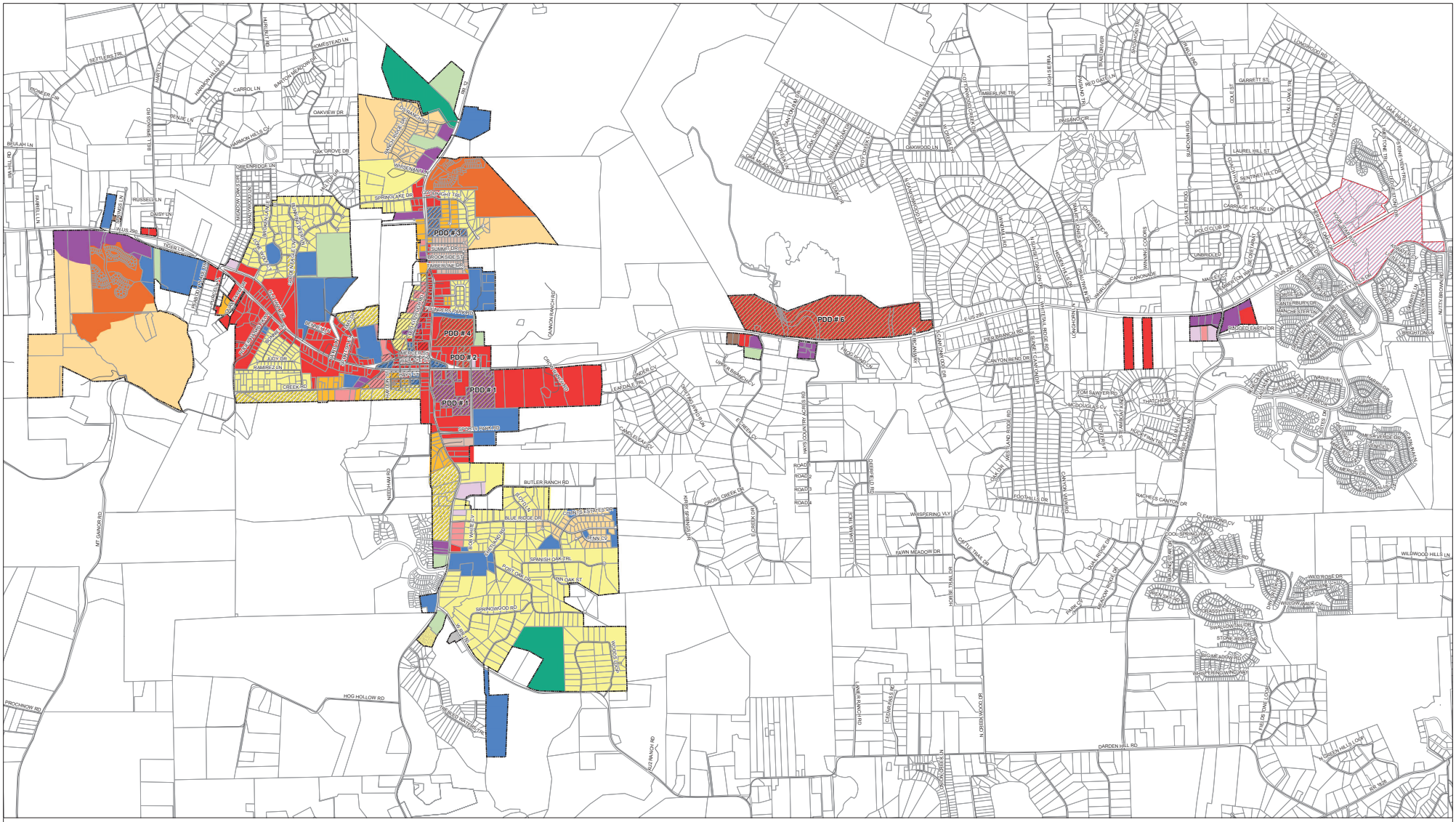
1:48,000

0 0.25 0.5 0.75 1 Miles

Coordinate System: NAD 1983 Texas Statewide Mapping System
Projection: Lambert Conformal Conic
Units: Meter
Datum: North American 1983
False Easting: 1,000,000.0000
False Northing: 1,000,000.0000
Central Meridian: -100.0000
Standard Parallel 1: 27.4167
Standard Parallel 2: 34.9167
Latitude Of Origin: 31.1667

Updated: January 26, 2023

CEDAR PARK



City of Dripping Springs, Texas
Official Zoning Map

Map Updated January 2017

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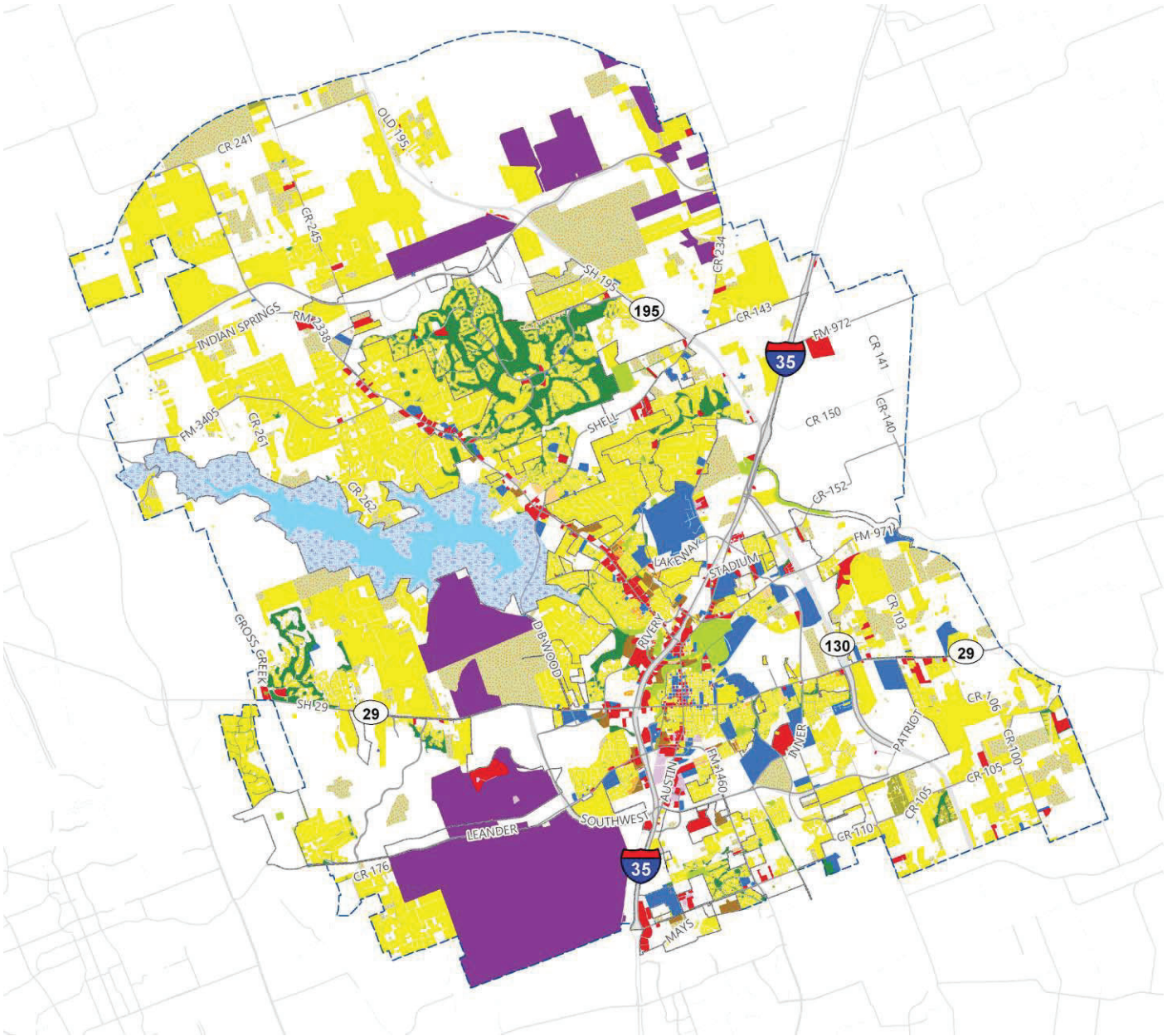
Figure 21. Existing Land Use Map (as of 1/22/2020)



Classification: Light vs. Heavy Industrial

Light industrial uses are typically conducted entirely inside and include uses such as light manufacturing and assembly. Such uses often generate truck traffic.

Heavy industrial uses may have outside storage or on-site excavation. Such uses may generate noise, light, dust, vibration, and other impacts.

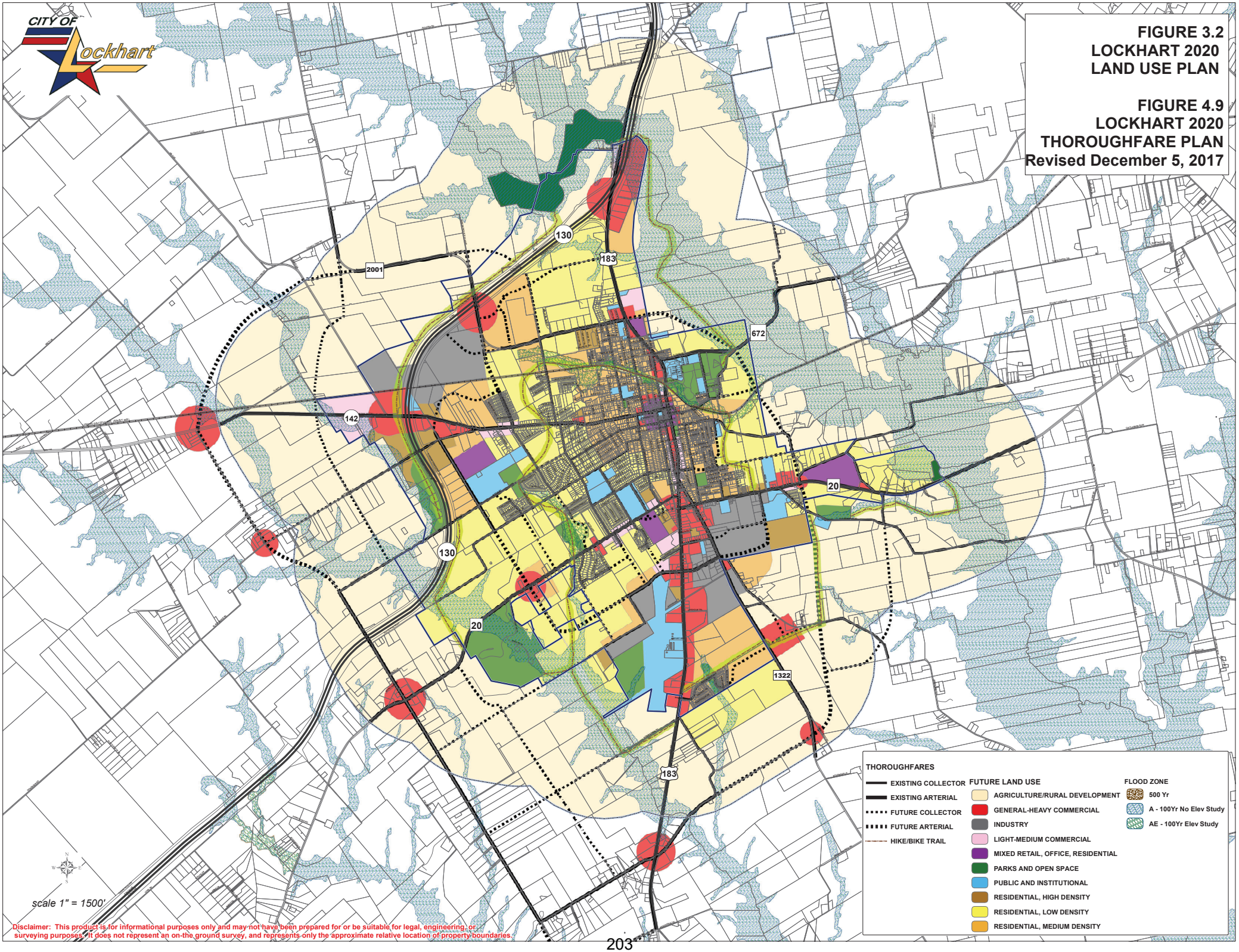
- Agriculture/Rural Residential
- Single Family
- Two-Family (Duplex)
- Townhome
- Multi-Family
- Manufactured Home
- Office/Retail/Commercial
- Light Industrial
- Heavy Industrial
- Parks and Open Space
- Private Recreation
- Public/Semi-Public
- Right-of-way
- Lake Georgetown
- Lake/Corps of Engineers
- Vacant
- Georgetown City Limits
- Georgetown ETJ

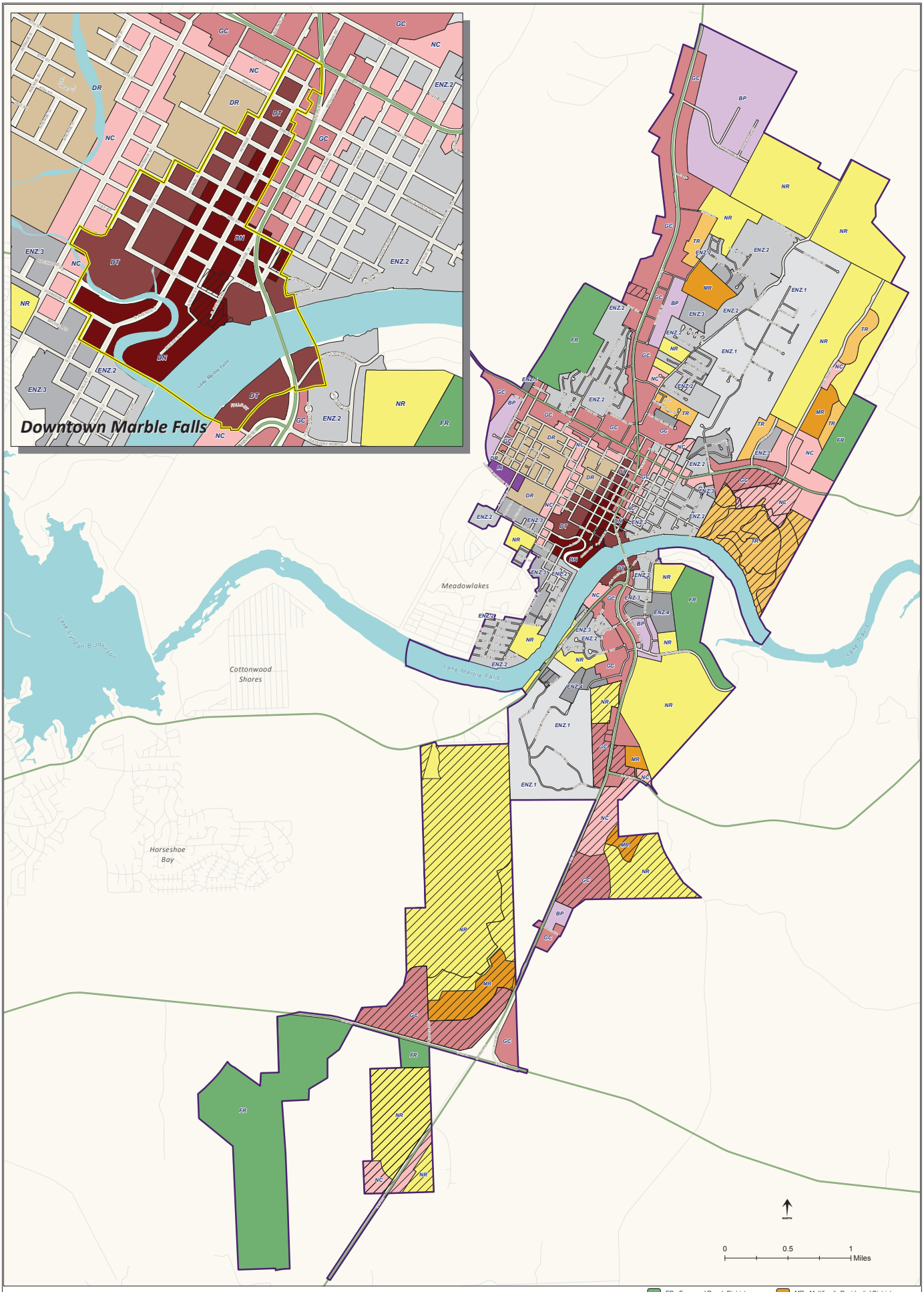
NORTH

0 1 2 3

MILES

Source: Williamson County Appraisal District


CITY OF Lockhart
FIGURE 3.2
LOCKHART 2020
LAND USE PLAN
FIGURE 4.9
LOCKHART 2020
THOROUGHFARE PLAN
Revised December 5, 2017
130
183
2001
672
142
20
130
20
1322
183
THOROUGHFARES
EXISTING COLLECTOR
EXISTING ARTERIAL
FUTURE COLLECTOR
FUTURE ARTERIAL
HIKE/BIKE TRAIL
FUTURE LAND USE
AGRICULTURE/RURAL DEVELOPMENT
GENERAL-HEAVY COMMERCIAL
INDUSTRY
LIGHT-MEDIUM COMMERCIAL
MIXED RETAIL, OFFICE, RESIDENTIAL
PARKS AND OPEN SPACE
PUBLIC AND INSTITUTIONAL
RESIDENTIAL, HIGH DENSITY
RESIDENTIAL, LOW DENSITY
RESIDENTIAL, MEDIUM DENSITY
FLOOD ZONE
500 Yr
A - 100Yr No Elev Study
AE - 100Yr Elev Study
scale 1" = 1500'
Disclaimer: This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the ground survey, and represents only the approximate relative location of property boundaries.

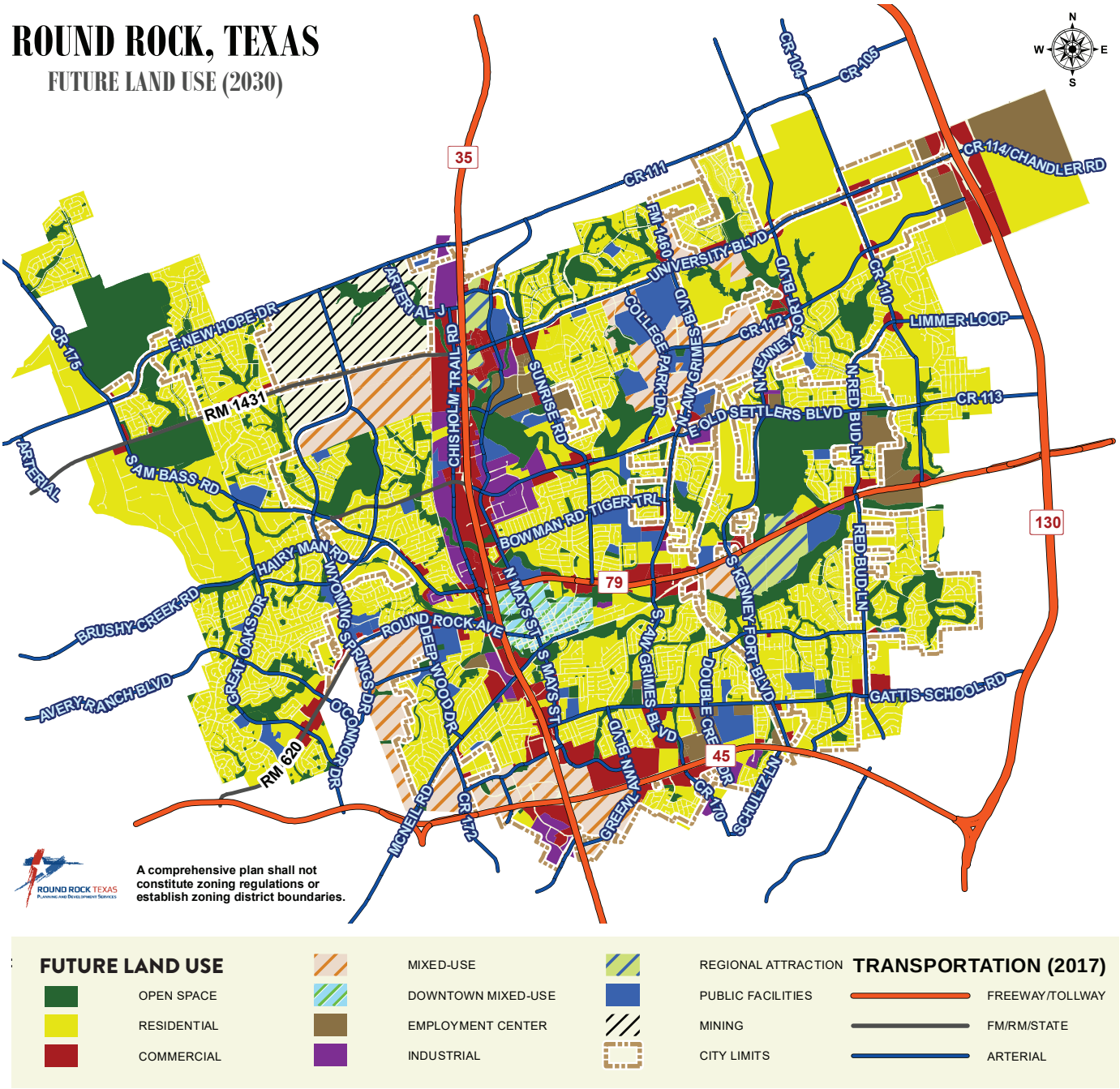


Official Zoning Map of Marble Falls, Texas

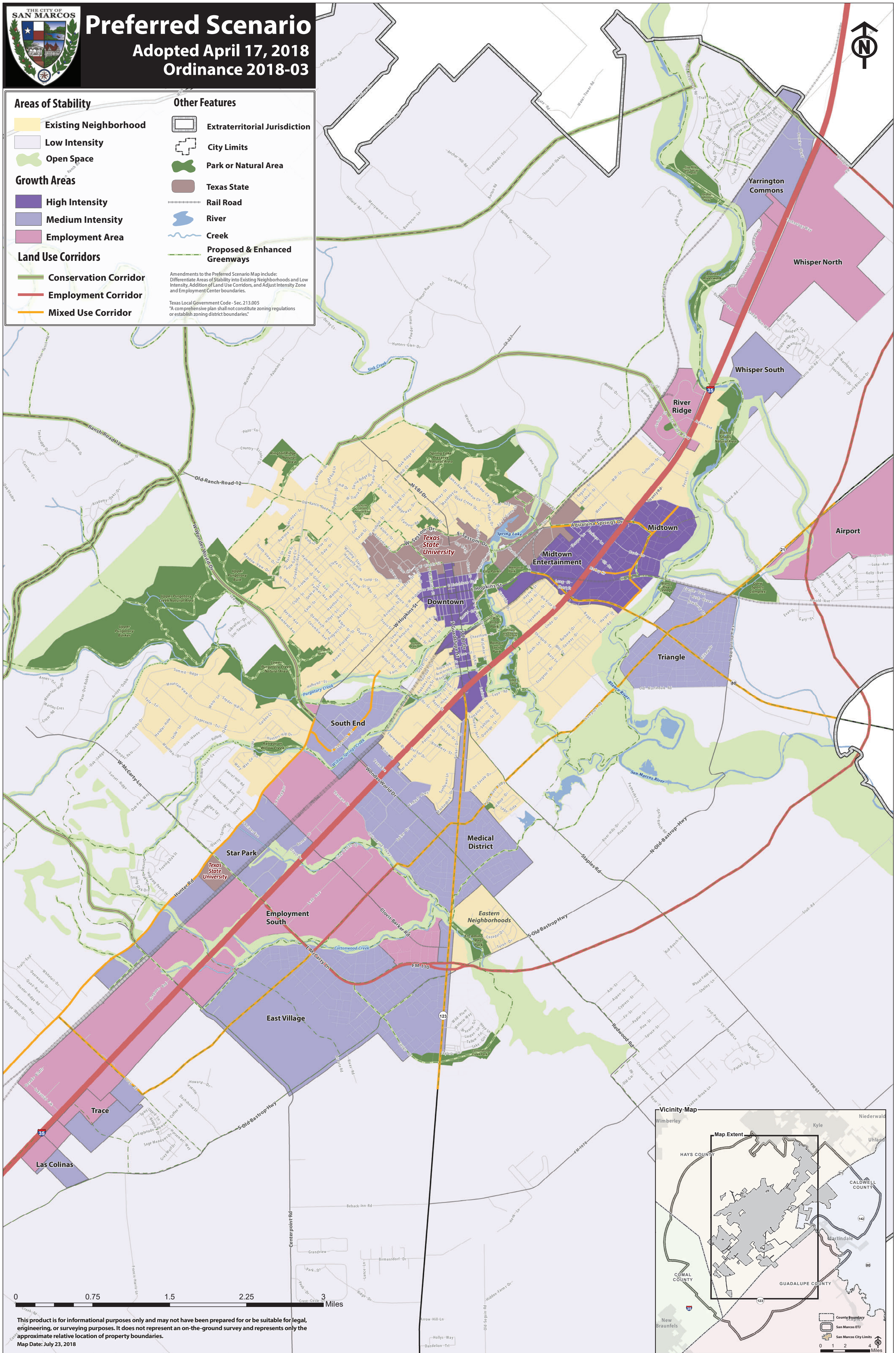
CITY OF Marble Falls TEXAS

- FR - Farm and Ranch District
- ENZ.1 - Existing Neighborhood Zone 1
- ENZ.2 - Existing Neighborhood Zone 2
- ENZ.3 - Existing Neighborhood Zone 3
- ENZ.4 - Existing Neighborhood Zone 4
- ENZ.5 - Existing Neighborhood Zone 5
- RE - Rural Estate District
- NR - Neighborhood Residential District
- TR - Transitional Residential District
- MR - Multifamily Residential District
- DR - Downtown Residential District
- NC - Neighborhood Commercial District
- GC - General Commercial District
- DT - Downtown Transition District
- DN - Downtown District
- BP - Business/Industrial Park District
- IN - General Industrial District
- Planned Development Districts

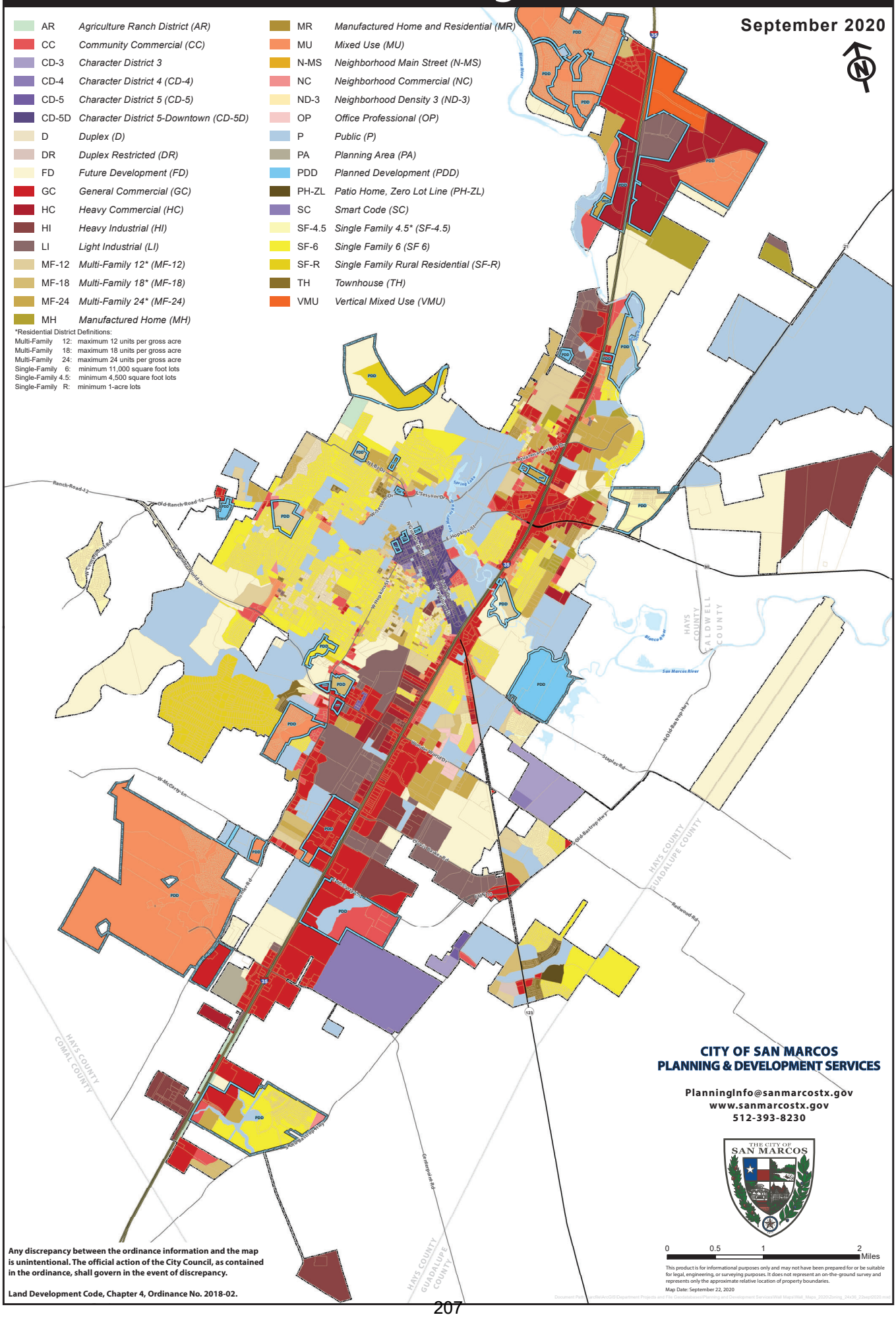
FIGURE 29. FUTURE LAND USE MAP



changes to map categories associated with new zoning districts and changing land use trends. To consider adjustments on the FLUM, staff conducted a preliminary review of the existing FLUM and identified potential revisions to create a new draft map. Staff then offered individual meetings between staff and stakeholders owning 100-plus acres of land in the city limits and/or ETJ to discuss potential changes to their land envisioned in the next ten years. Once a new draft FLUM was created, staff held an open house on July 22, 2019 to solicit public input. Staff identified 402 parcels of land in the city limits and ETJ consisting of five acres or more with a single owner and sent a letter inviting those owners to attend the Open House. The Open House was open to the public as well. The public and stakeholders provided input on how they saw the city and their parcels being developed or redeveloped in the future. Staff then revised the FLUM based on the input received.


THE CITY OF SAN MARCOS
Preferred Scenario
Adopted April 17, 2018
Ordinance 2018-03
Areas of Stability
Existing Neighborhood
Low Intensity
Open Space
Growth Areas
High Intensity
Medium Intensity
Employment Area
Land Use Corridors
Conservation Corridor
Employment Corridor
Mixed Use Corridor
Other Features
Extraterritorial Jurisdiction
City Limits
Park or Natural Area
Texas State
Rail Road
River
Creek
Proposed & Enhanced Greenways
Amendments to the Preferred Scenario Map include: Differentiate Areas of Stability into Existing Neighborhoods and Low Intensity, Addition of Land Use Corridors, and Adjust Intensity Zone and Employment Center boundaries.
Texas Local Government Code - Sec. 213.005 "A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries."
Yarrington Commons
Whisper North
Whisper South
River Ridge
Midtown
Airport
Midtown Entertainment
Texas State University
Downtown
Triangle
South End
Medical District
Star Park
Employment South
Eastern Neighborhoods
East Village
Trace
Las Colinas
Vicinity Map
Map Extent
HAYS COUNTY
CALDWELL COUNTY
COMAL COUNTY
GUADALUPE COUNTY
0 0.75 1.5 2.25 3 Miles
This product is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.
Map Date: July 23, 2018

Current Zoning Districts



CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Freight Plan

Forecast and Trends Report

Final 1: March 6, 2024

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Acronyms

ABIA - Austin Bergstrom International Airport

ADAS - Advanced Driver Assistance Systems

ADS - Automated Driving System

AI - Artificial Intelligence

AV - Automated Vehicle

BVLOS – Beyond Visual Line of Sight

CAPCOG – Capital Area Council of Governments

CAMPO - Capital Area Metropolitan Planning Organization

CAGR - Compound Annual Growth Rate

CAVs - Connected and Automated Vehicles

CO2 - Carbon Dioxide

FAA – Federal Aviation Administration

FHWA - Federal Highway Administration

FMCSA - Federal Motor Carrier Safety Administration

FSP - Freight Signal Priority

GAO - Government Accountability Office

HOS - Federal Hours of Service

HVAC - Heating, Ventilation, and Air Conditioning

I2I - Infrastructure-to-Infrastructure

IIJA - Infrastructure Investment and Jobs Act

MPO - Metropolitan Planning Organization

NAICS - North American Industry Classification System

NAS – National Airspace System

NEVI - National Electric Vehicle Implementation

PSR - Precision Scheduled Railroading

PTC - Positive Train Control

RTP - Regional Transportation Plan

SAE - Society of Automotive Engineers

SH – State Highway

TCFC - Texas Connected Freight Corridors

THFN - Texas Highway Freight Network

TIP - Transportation Improvement Program

TPAS - Truck Parking Availability System

TxDMV - Texas Department of Motor Vehicles

TxDOT - Texas Department of Transportation

UAS – Unmanned Aircraft Systems

UAVs - Unmanned Aerial Vehicles

V2I or I2V - Vehicle-To-Infrastructure

V2V - Vehicle-To-Vehicle

WIM - Weigh-In-Motion

Introduction

The Capital Area region, a six-county metropolitan area centered on Austin in Central Texas, has experienced rapid growth and economic development in recent years. A key aspect of this growth is an increase in freight and the movement of goods by truck, rail, pipeline, and air. Efficient freight movement is crucial to the competitiveness of the region's businesses and industries, and the overall way of life for its residents. Recognizing this importance, the Capital Area Metropolitan Planning Organization (CAMPO) is developing a Regional Freight Plan that will highlight the importance of freight to the region and inform the Regional Transportation Plan (RTP) by identifying policies, strategies, and investments to enhance the performance and safety of the multimodal freight network.

Project Background and Purpose

CAMPO's six-county region is comprised of Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson counties. The total land area for the region is 5,215 square miles or roughly the size of Connecticut. The region is traversed by IH 35, a national corridor for trade, commerce, and passenger travel that connects major cities in Texas, spanning 21 counties from the border with Mexico to Oklahoma. The CAMPO region itself is diverse geographically, with the population concentrated in the urban metropolitan core in Travis County and a variety of established and emerging suburbs, historic towns, and rural areas in the surrounding counties. These areas generate and attract freight, each providing a unique set of industries and challenges.

Since the region's last regional freight plan was developed in 2008, several forces have contributed to the increasing demand for freight transportation in the CAMPO region. First, the region has experienced tremendous population growth, resulting in an overall higher demand for goods and services. Second, the growth of e-commerce carried over from the COVID-19 pandemic has significantly increased the demand for last-mile delivery services, which has increased the demand for truck transportation and warehousing. Finally, growing key freight-intensive industries in the region, such as automobile and semiconductor production, have increased the need to transport raw materials, finished goods, and equipment. These factors underscore the importance of efficient and reliable freight transportation in the CAMPO region.

The purpose of this forecast and trends report is to describe the current and future drivers of goods movement in the CAMPO region, identify key commodities and trading partners, determine locations with freight-intensive land use, and describe trends in the freight industry that will impact the CAMPO region.

Key Findings

The following bullets summarize key findings in the report with respect to the trends that are expected to impact freight demand and commodity flow movements in the CAMPO region:

Population and Employment

- The total population for the region is anticipated to increase by 2.4 million between 2020 and 2050. Travis County and Williamson County exhibit the highest population concentrations, collectively representing over 80 percent of the total regional population as of 2020.

- Total employment in the region is projected to increase by 1.2 million between 2020 and 2050. Similar to population, regional employment is concentrated in Travis County, which had nearly 70 percent of the total in 2020.
- Between 2020 and 2050, Williamson County is forecasted to add 1.1 million new residents and 377,000 jobs, which is the most in terms of total growth among the counties in the region.

Commodity Flow Analysis

- In 2019, the CAMPO region transported 113 million tons of commodities valued at $86 billion, which is forecasted to increase by 92 percent in tonnage and 138 percent in value to 218 million tons and $205 billion, respectively, by 2050.
- The majority of the 2019 flows were intrastate (69 percent), with 18 percent circulating within the CAMPO region, and international flows making up 2.4 percent. By 2050, the share remaining within the CAMPO region is expected to decline to 13 percent.
- The majority of commodity flows occurred between the CAMPO region and other Texas counties, notably Harris, Bexar, and Dallas counties, all of which are strategically located within the Texas Triangle and linked by key interstates and freight rail. These counties accounted for most of the intrastate commodity flows in terms of tonnage and value, a trend that is expected to persist through 2050.
- Nonmetallic minerals led the 2019 commodity types and are forecasted to rise 40 percent by 2050, followed by manufactured construction materials. In terms of value, chemicals topped the list, expected to grow by 159 percent. Secondary traffic flows, tied to warehouse and retail distribution, are predicted to grow by 250 percent to $36 billion by 2050.The leading growth of these commodity types underline the growing freight activity linked to construction materials production and e-commerce, which are clustered along the IH 35 corridor and nearby warehouses and logistics centers.
- Regarding transportation modes, trucks were dominant in 2019, accounting for 96 percent of the tonnage and 84 percent of the value. Rail handled 4 percent of the tonnage, and air, albeit costlier, accounted for a considerable value proportion (15 percent) compared to rail (1 percent). The truck mode is expected to retain a similar share by 2050, but its value share is predicted to rise to 85 percent. Rail is projected to double its value share to 2 percent, while air transport is expected to decrease from 15 percent to 12 percent, pointing to potential opportunities for rail to serve the regional manufacturing industry.
- The projected growth in rail flows highlights opportunities to serve manufacturing industries in the region. Commodity flows by rail destined for the CAMPO region are routed to major hubs in Dallas-Fort Worth and San Antonio.
- The growth in expected air traffic serves the need for expedited delivery for high-valued commodities and goods. The value of the commodity transported by air is expected to increase by 96 percent according to the 2050 forecast.

Freight Intensive Development and Land Use

- Freight growth areas are expected to be located on major interstate, US, and state highway corridors. Ensuring access to the corridors from local roadways will be essential to providing safe, efficient access to higher capacity roadways.

- Land use policies put in place by municipalities are critical to managing and directing freight-intensive development. Development zones can incentivize growth in optimal locations, and coordination between economic development efforts and transportation planning is needed to plan effectively for growth in the larger region.
- Land use planning should be coordinated with the development of the necessary infrastructure to accommodate the volume of truck traffic and their loads. Upgrading local roadways and ensuring seamless connectivity with the THFN can significantly enhance the mobility and safety of trucks, thereby reducing congestion impacts in residential areas.

Freight Transportation Trends

- Business and consumer practices and economic forces – accelerated by the COVID-19 pandemic – have shifted consumer distribution patterns to more dispersed distribution models, increasing the impact of goods movement throughout urbanized areas rather than in concentrated industrial zones. Shifting demands have also placed increased demand on airports for cargo space, and similar market conditions have pushed railroads to change commodity mix to more profitable goods.
- Market factors and public incentives are driving changes in freight vehicle technology, and the industry is expected to continue to transform over the coming decades. Efficiencies and safety gained from connected and autonomous vehicles are encouraging adoption, while Texas' permissive regulatory environment attracts pilot programs. Public agencies can invest in connected infrastructure that responds to real-time conditions, using the data provided by increasingly "smart" vehicles.
- CAMPO can play a role in advancing fueling infrastructure to accelerate adoption within the region. For example, Texas' National Electric Vehicle Infrastructure (NEVI) grant program presents an opportunity for MPOs to apply for funding to construct and operate charging infrastructure, which could potentially expand to commercial vehicles in future rounds.

Report Organization

This document is one of the deliverables as defined under Task 4 – Forecast and Trends Report from the scope of work for Cambridge Systematics, Inc.'s project number 220134. The remainder of this document is organized into the following sections:

- Population and Employment Forecasts
- Commodity Flow and Forecasts Analysis
- Freight Intensive Development and Land Use
- Freight Transportation Trends
- Conclusion and Next Steps

Population and Employment Forecasts

The CAMPO region has experienced tremendous population and employment growth just in the past decade alone. This growth is expected to continue as the region's economy continues to expand, which will increase demand for freight. This section looks at the projected population and employment growth in the region, which are key drivers of freight demand.

Population

In 2020, the CAMPO region had a population of approximately 2.3 million. Projections show an increasing trend in total population with the region expected to add 2.4 million new residents between 2020 and 2050. Table 1 summarizes the population trends by county. Over half the population lives in Travis County, which is expected to reach nearly 2 million in 2050. In terms of total population growth, Williamson County is expected to gain 1 million new residents, increasing its share of the region's total to 36 percent while Travis County's share is expected to decline to less than half (42 percent) by 2050.

Table 1: Regional Population Projections by County

County	2020	2025	2030	2050	2020-2050 CAGR
Bastrop	97,216	117,175	167,704	184,520	2.2%
Burnet	49,130	51,990	54,494	62,658	0.8%
Caldwell	45,883	49,772	58,412	69,133	1.4%
Hays	241,067	292,867	356,239	765,751	3.9%
Travis	1,290,188	1,416,887	1,539,244	1,978,903	1.4%
Williamson	609,017	720,688	857,312	1,699,283	3.5%
Total	**2,332,501**	**2,649,379**	**3,033,405**	**4,760,248**	**2.4%**

Note: CAGR = Compound Annual Growth Rate. Source: CAMPO Projections. August 2023.

Employment

Table 2 shows 2020 and projected 2050 employment for the CAMPO region. Between 2020 and 2050, total employment in the region is expected to increase by 1.2 million. Regional employment is highly concentrated in Travis County, which had nearly 70 percent of the total in 2020. Between 2020 and 2050, Hays and Williamson counties are forecasted to outpace Travis County and the region overall in terms of annual job growth.

Both sets of projections show Williamson County capturing most of the region's total population and employment growth. Between 2020 and 2050, it is expected to add 1.1 million residents and 377,000 jobs. The forecasts point to Williamson County as a focus for growth as industries and builders seek areas outside of Travis County where open space and easier access to transportation corridors are attractive to development.

Table 2: Regional Employment Projections by County

County	2020	2025	2030	2050	2020-2050 CAGR
Bastrop	18,801	22,010	24,887	39,315	2.5%
Burnet	17,595	18,000	18,900	22,600	0.8%
Caldwell	10,154	10,300	11,700	15,200	1.4%
Hays	66,985	98,242	120,498	264,376	4.7%
Travis	677,874	882,864	971,263	1,287,276	2.2%
Williamson	195,312	233,179	280,727	572,743	3.7%
Total	**986,721**	**1,264,595**	**1,427,975**	**2,201,510**	**2.7%**

Note: CAGR = Compound Annual Growth Rate. Source: CAMPO Projections. August 2023.

Commodity Flow and Forecasts Analysis

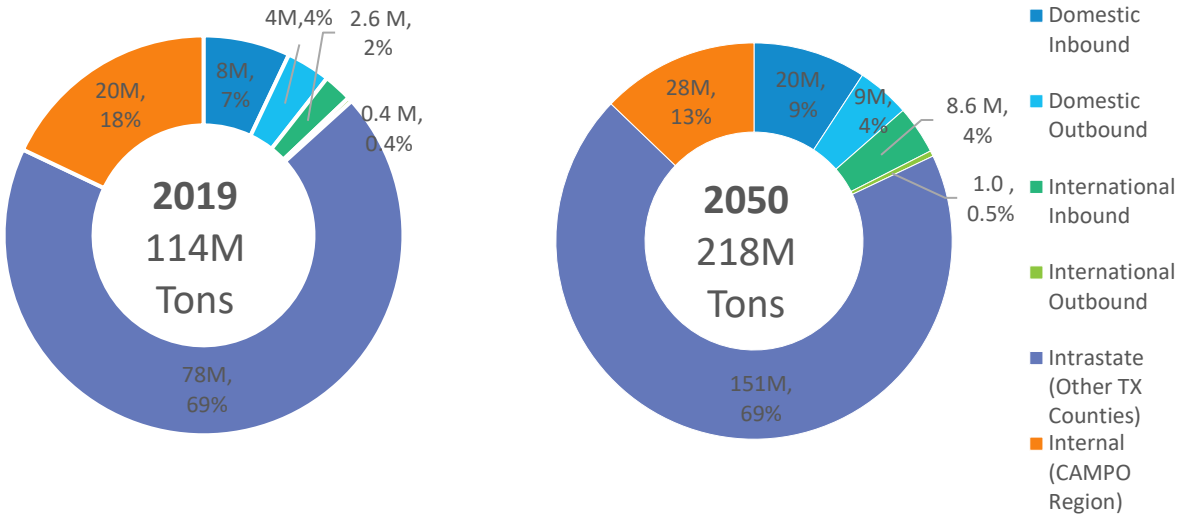
The following sections reference the analysis of regional commodity flows using the Transearch database from IHS Markit (now S&P Global) for Texas. Transearch data is consistent with the forecasts developed for Texas Delivers 2050, the new statewide freight plan. This database has 2019 as the base year and was enhanced to improve how some important flows in Texas are captured, including cross-border trade, maritime trade, and energy-related commodities.

According to the Transearch data, more than 113 million tons of commodities valued at $86 billion were transported to, from, or within the CAMPO region in 2019. By 2050, the commodity flow in the CAMPO region is estimated to increase sharply to 218 million tons valued at $205 billion, representing an overall 92 percent increase in tonnage and 138 percent increase in value. The following sections describe the commodity flow related to the CAMPO region by direction, commodity, mode, and trading partners.

Direction

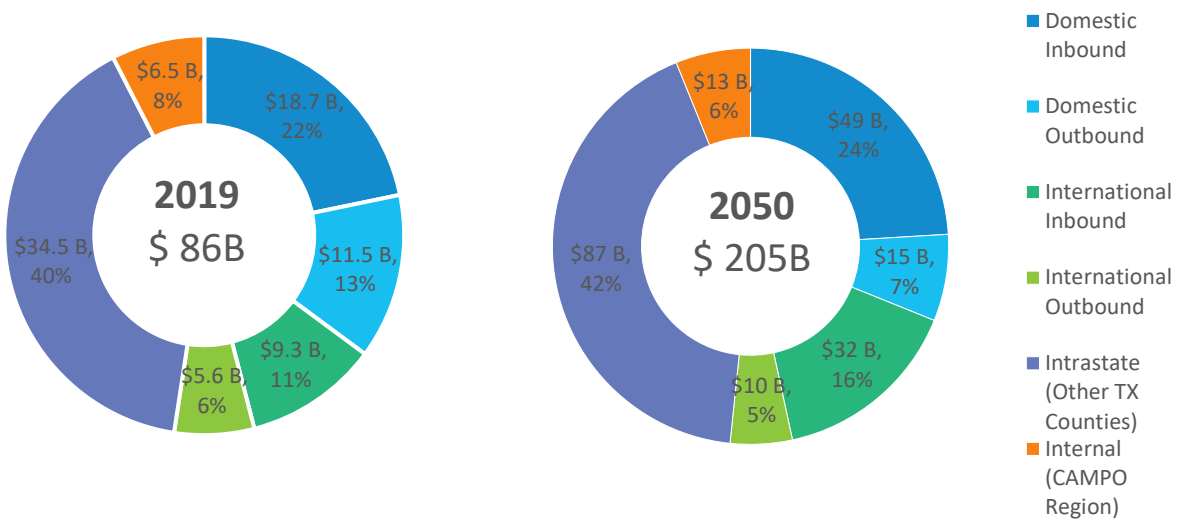
As shown in Figure 1, in 2019 and 2050, 69 percent of freight flow tonnage consists of intrastate freight - commodities transported to or from the CAMPO region to other Texas destinations. Intrastate freight movements account for around 40 precent of total values in 2019 and 2050, as shown in Figure 2. Intrastate freight flow constitutes over two-thirds of the total freight tonnage but contributes only 40 percent of the overall freight value, suggesting that intrastate flows consist of lower-valued commodities. In 2019, each ton of goods was worth $440, and it is anticipated that by 2050, the per-ton value will increase to $570, signifying a 30 percent increase.

Figure 1: Commodity Tonnage by Direction, 2019 and 2050



Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Figure 2: Commodity Value by Direction, 2019 and 2050



Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

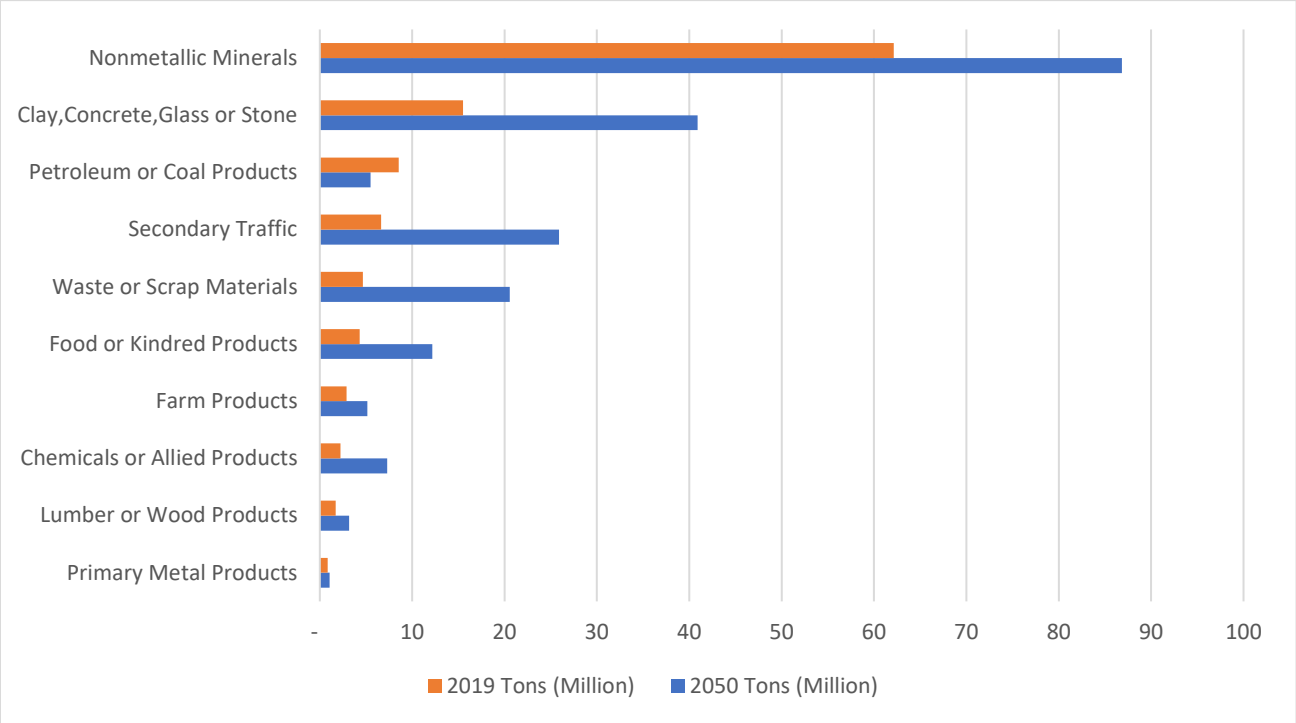
Commodity Types

Commodity patterns provide valuable insights into the economic activity and industries within the CAMPO region. In 2019, the average price per ton of commodity flows to, from, or within the CAMPO region was $756 per ton, and this number is estimated to increase to $941 per ton in 2050. The following section will delve into the commodities in terms of tonnage and value.

Figure 3 illustrates the top 10 commodities by 2019 tonnage and the projected tonnage in 2050. The leading commodities by tonnage in 2019 include nonmetallic minerals (62 million tons); clay,

concrete, glass, or stone (15 million tons); petroleum or coal products (8 million tons);[1] secondary traffic (7 million tons);[2] and waste or scrap materials (5 million tons). For future trends, petroleum or coal products are projected to decrease to 5 million tons in 2050, representing a 36 percent decrease, and will rank as the seventh leading commodity. Overall, the top 10 commodities made up 96 percent of the total 2019 tonnage.

Figure 3: Top Commodities by Tonnage, 2019 and 2050



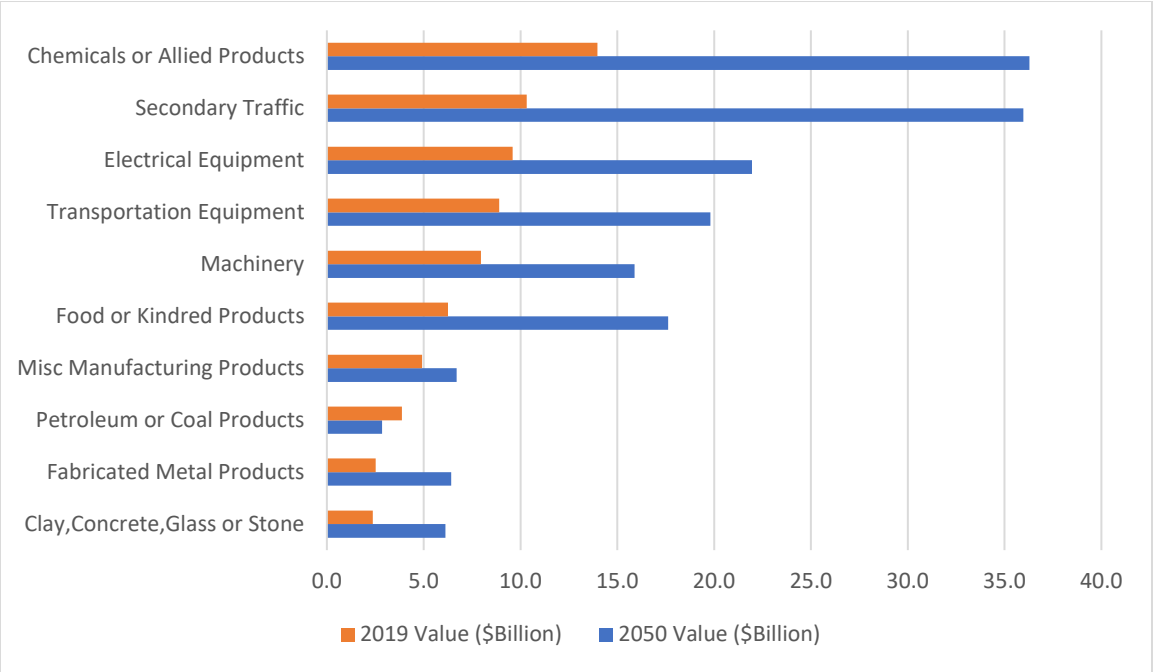
Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo. Note: Secondary traffic refers to the transportation of goods between interim locations, such as warehouses or distribution centers.

Figure 4 summarizes the top 10 commodities by value. The top commodities in 2019 include chemicals or allied products ($14 billion), secondary traffic ($10 billion), electrical equipment ($10 billion), transportation equipment, ($9 billion), and machinery ($8 billion). The top 10 commodities in 2019 made up more than 82 percent of the total commodity value in 2019.

In terms of projected 2050 value, the top four commodities remain the same as in 2019. Food or kindred products are projected to increase by 182 percent, from $6 billion in 2019 to $18 billion in 2050, and become the fifth leading commodity by value.

[1] Petroleum or coal products: the STCC code for this commodity is 29, which does not include raw coal.
[2] Secondary traffic refers to the transportation of goods between interim locations, such as warehouses or distribution centers.

Figure 4: Top Commodities by Value, 2019 and 2050



Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo. Note: Secondary traffic refers to the transportation of goods between interim locations, such as warehouses or distribution centers.

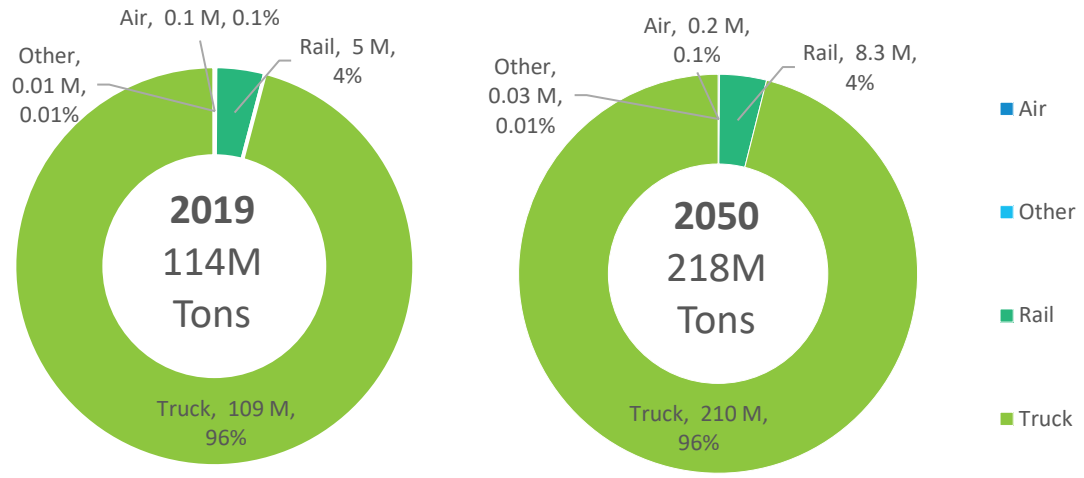
Mode

Transearch data divides modal information into sixteen detailed modes, which are further grouped into six broad groups: Air, Other, Pipeline, Rail, Truck, and Water; Other refers to flows with unclassified modes. The Water mode is not applicable to the CAMPO region. No information is reported for the Pipeline mode as Transearch does not include intrastate flows of crude or refined petroleum products.

Truck is the predominant mode for freight movement in the CAMPO region. Figure 5 and Figure 6 provide insights into the tonnage and value for each mode. Trucks accounted for 96 percent of the total 2019 weight (109 million tons) and 2050 projected weight (210 million tons). Rail movement ranks as the second most significant mode, representing 4 percent of both the total freight tonnage in 2019 (5 million tons) and the projected figure for 2050 (8 million tons). Air and Other modes contribute less than 1 percent of the overall freight tonnage within the CAMPO region.

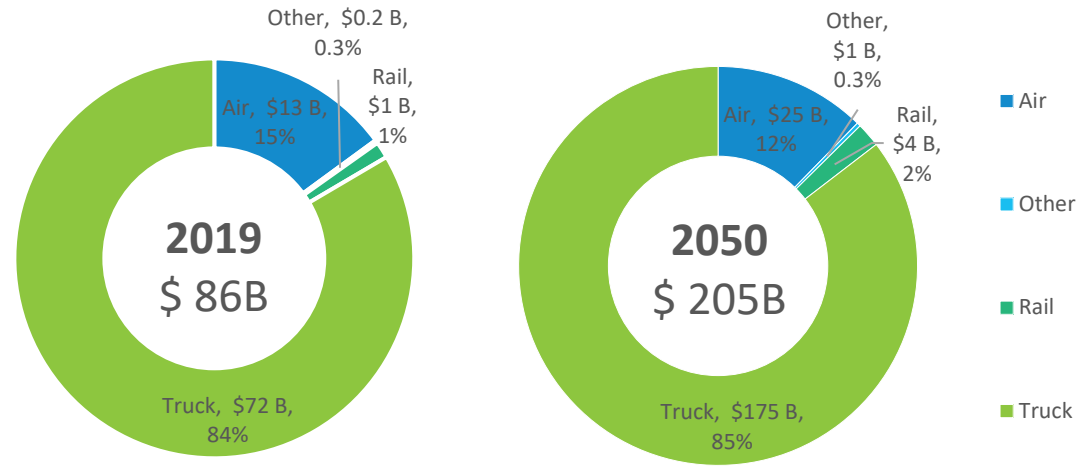
In terms of value, trucks are the leading mode in the CAMPO region. Truck-carried commodities were valued at $72 billion in 2019, accounting for 84 percent of total freight value. By 2050, this value is expected to increase to $175 billion, accounting for 85 percent of the total projected value in the future.

Figure 5: Commodity Tonnage by Mode, 2019 and 2050



Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Figure 6: Commodity Value by Mode, 2019 and 2050



Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Trading Partners

Freight flows provide insight into a location's transportation activities and infrastructure usage. This section specifically focuses on inbound and outbound flows to identify the primary trading partners based on tonnage and value.

Table 3 illustrates the top 10 trading partners CAMPO imported commodities from in 2019. The leading inbound origins were Louisiana, Iowa, Oklahoma, Arkansas, and Nebraska. The top 10 partners collectively accounted for 43 percent of the total inbound weight to the CAMPO region. Among them, Mexico stood out as the primary international inbound origin for CAMPO,

with three locations within Mexico included in the top 10. In 2019, 21 percent of the total inbound tonnage originated from Mexico.

Table 3: Inbound Trading Partners (U.S. Domestic and International) by Tonnage, 2019 and 2050

Inbound Partner	2019 Tonnage (Thousand)	Percent	2050 Tonnage (Thousand)	Percent	Percent Change 2019-2050
Louisiana	948	9%	2,109	7%	123%
Iowa	650	6%	2,379	8%	266%
Oklahoma	523	5%	1,237	4%	136%
Arkansas	506	5%	1,199	4%	137%
Nebraska	354	3%	1,326	5%	275%
Unknown Mexican State, Mexico*	348	3%	956	3%	175%
Alabama	327	3%	643	2%	97%
California	317	3%	921	3%	190%
Mexico, Mexico	306	3%	1,097	4%	259%
Coahuila De Zaragoza, Mexico	296	3%	1,125	4%	280%
All Others	**6,064**	**57%**	**15,705**	**55%**	**159%**
Rest of Mexico	1,337	13%	4,785	18%	227%
Canada	353	3%	623	2%	77%
Other Domestic Partners	4,371	41%	10,287	34%	140%
Other International partners	4	0.04%	11	0.04%	156%
Total	**10,639**	**100%**	**28,698**	**100%**	**170%**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo. Note: Asterisk (*) denotes a location that was identified as unknown in the Transearch database.

Table 4 lists the top 10 states or countries based on the value of freight imports. In 2019, the leading inbound partners in terms of value were Chihuahua ,Mexico; California; Louisiana; Oklahoma; and Tennessee. These top 10 partners collectively accounted for approximately 44 percent of the total inbound freight value. Mexico held the position of the primary international inbound country, contributing 27 percent of the total freight value.

In terms of value trends, more than half of the top 10 origins are projected to experience a growth rate faster than the overall growth rate for all inbound partners (170 percent), and origins in Mexico are expected to witness a higher percentage increase compared to other states and countries.

Table 4: Inbound Trading Partners (U.S. Domestic and International) by Value, 2019 and 2050

Inbound Partner	2019 Value ($Millions)	Percent	2050 Value ($Millions)	Percent	Percent Change 2019-2050
Chihuahua, Mexico	2,113	8%	6,432	8%	204%
California	1,833	7%	5,770	7%	215%
Louisiana	1,220	4%	2,806	3%	130%
Oklahoma	1,193	4%	4,039	5%	238%
Tennessee	1,135	4%	3,248	4%	186%
Nuevo Leon, Mexico	1,060	4%	3,956	5%	273%
Georgia	1,003	4%	2,166	3%	116%
Estado de México (State of Mexico)	993	4%	3,634	4%	266%
Coahuila De Zaragoza, Mexico	927	3%	3,564	4%	284%
Arkansas	801	3%	2,072	3%	159%
All Others	**15,773**	**56%**	**43,449**	**54%**	**175%**
Rest of Mexico	3,445	12%	12,257	15%	256%
Canada	514	2%	1,230	2%	139%
Other Domestic Partners	11,495	41%	29,042	36%	153%
Other International partners	318	1%	920	1%	189%
Total	**28,052**	**100%**	**81,136**	**100%**	**189%**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

In 2019, outbound commodities accounted for the lowest portion of commodity tonnage, amounting to 4.5 million tons or 4 percent of the total. The major outbound partners outside of Texas were California, Louisiana, Oklahoma, and Florida. Table 5 summarizes the top outbound trading partners by tonnage in 2019 and 2050. The top 10 partners collectively received 62 percent of the total outbound tonnage. Clay, concrete, glass, or stone are the predominant commodities exported to California and Oklahoma, which accounted for 54 percent and 36 percent of total outbound tonnage to California and Oklahoma, respectively. Approximately 49 percent of goods shipped from the CAMPO region to Louisiana were nonmetallic minerals. Unlike inbound flows, only 10 percent of outbound flows were transported to international destinations.

For future projections, nearly all of the top 10 outbound partners are expected to receive more than double the amount of freight tonnage in 2050, with the exception of Florida and Arizona.

Table 5: Outbound Trading Partners (U.S. Domestic and International) by Tonnage, 2019 and 2050

Inbound Partner	2019 Value ($Millions)	Percent	2050 Value ($Millions)	Percent	Percent Change 2019-2050
California	777	17%	1,821	17%	134%
Louisiana	770	17%	1,990	19%	158%
Oklahoma	380	8%	847	8%	123%
Florida	147	3%	275	3%	86%
Arizona	137	3%	225	2%	64%
Ohio	129	3%	424	4%	228%
Colorado	120	3%	263	3%	119%
New Mexico	117	3%	280	3%	140%
Utah	102	2%	230	2%	127%
Michigan	97	2%	270	3%	179%
All Others	**1,703**	**38%**	**3,823**	**37%**	**124%**
Rest of Mexico	274	6%	788	8%	187%
Canada	132	3%	203	2%	54%
Other Domestic Partners	1,295	29%	2,826	27%	118%
Other International partners	2	0.1%	6	0.1%	147%
Total	**4,479**	**100%**	**10,447**	**100%**	**133%**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Despite outbound tonnage accounting for only 4 percent of the total tonnage, its value was substantial, amounting to $17 billion, which represented 20 percent of the total value in 2019. Table 6 lists the leading outbound trading partners by value. The top major outbound trading partners were Chihuahua, Mexico; Oklahoma; California; Ontario, Canada; and Tamaulipas, Mexico. The top 10 outbound partners received nearly 56 percent of the total value of exported goods. Of the freight value exported to Chihuahua, Mexico, 51 percent was attributed to machinery commodities. In 2050, the total outbound commodity value is estimated to reach nearly $25 billion, indicating a 46 percent increase from 2019.

Table 6: Outbound Trading Partners (U.S. Domestic and International) by Value, 2019 and 2050

Outbound Partner	2019 Value ($Millions)	Percent	2050 Value ($Millions)	Percent	Percent Change 2019-2050
Chihuahua, Mexico	2,316	14%	4,261	17%	84%
Oklahoma	1,590	9%	1,786	7%	12%
California	1,321	8%	1,680	7%	27%
Ontario, Canada	900	5%	934	4%	4%
Tamaulipas, Mexico	780	5%	1,601	6%	105%
Florida	766	4%	994	4%	30%
Louisiana	632	4%	1,122	5%	78%
Tennessee	476	3%	504	2%	6%
New Jersey	444	3%	465	2%	5%
Georgia	387	2%	467	2%	21%
All Others	**7,452**	**44%**	**11,075**	**44%**	**49%**
Rest of Mexico	1,327	8%	2,993	12%	126%
Rest of Canada	161	1%	184	1%	15%
Other Domestic Partners	5,697	33%	7,234	29%	27%
Other International partners	267	2%	664	3%	148%
Total	**17,063**	**100%**	**24,889**	**100%**	**46%**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Commodity Flow Origins and Destinations in Texas

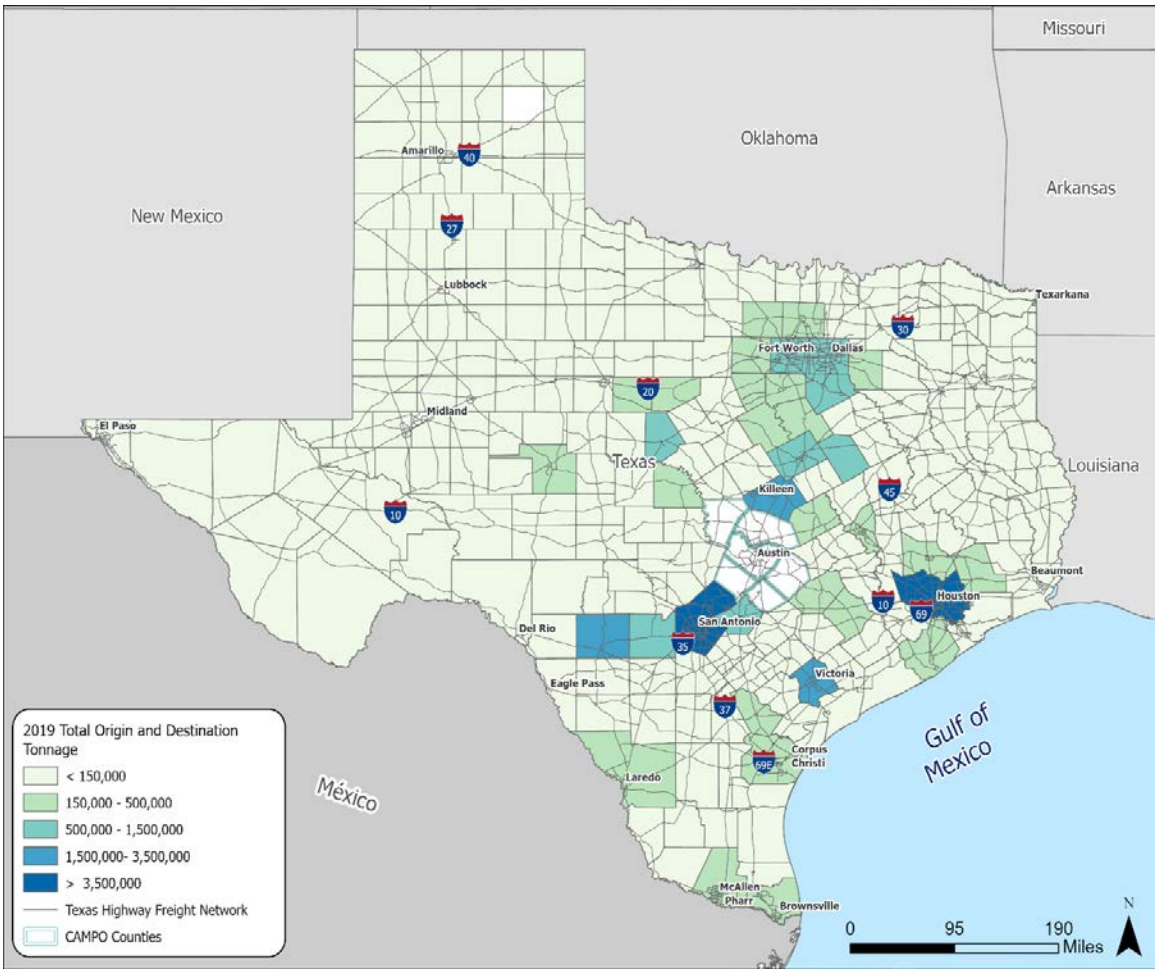
Nearly 69 percent of commodities transported to or from the CAMPO region started or ended within Texas. These intrastate flows reference movements between counties in the CAMPO region and the counties outside the region in the rest of the state.

Figure 7 displays the amount of tonnage that originated in and was destined for each county. In 2019, Bexar County, Harris County, and Comal County were the top three intrastate trading partners for the CAMPO region, each associated with 12 million, 10 million, and 9 million tons of commodities, respectively. These counties are served by major corridors such as IH 10 and IH 35.

Figure 8 shows the intrastate trading partners by value. Counties with higher commodity tonnage are likely to have a higher value. The top intrastate partners were Harris, Bexar, and Dallas counties. Each had commodities valued at $10 billion, $5 billion, and $2 billion in 2019, respectively. Besides the leading counties, those adjacent to the Mexico border, such as Webb, Hidalgo, and Cameron counties also showed a relatively high commodity value. Each of these

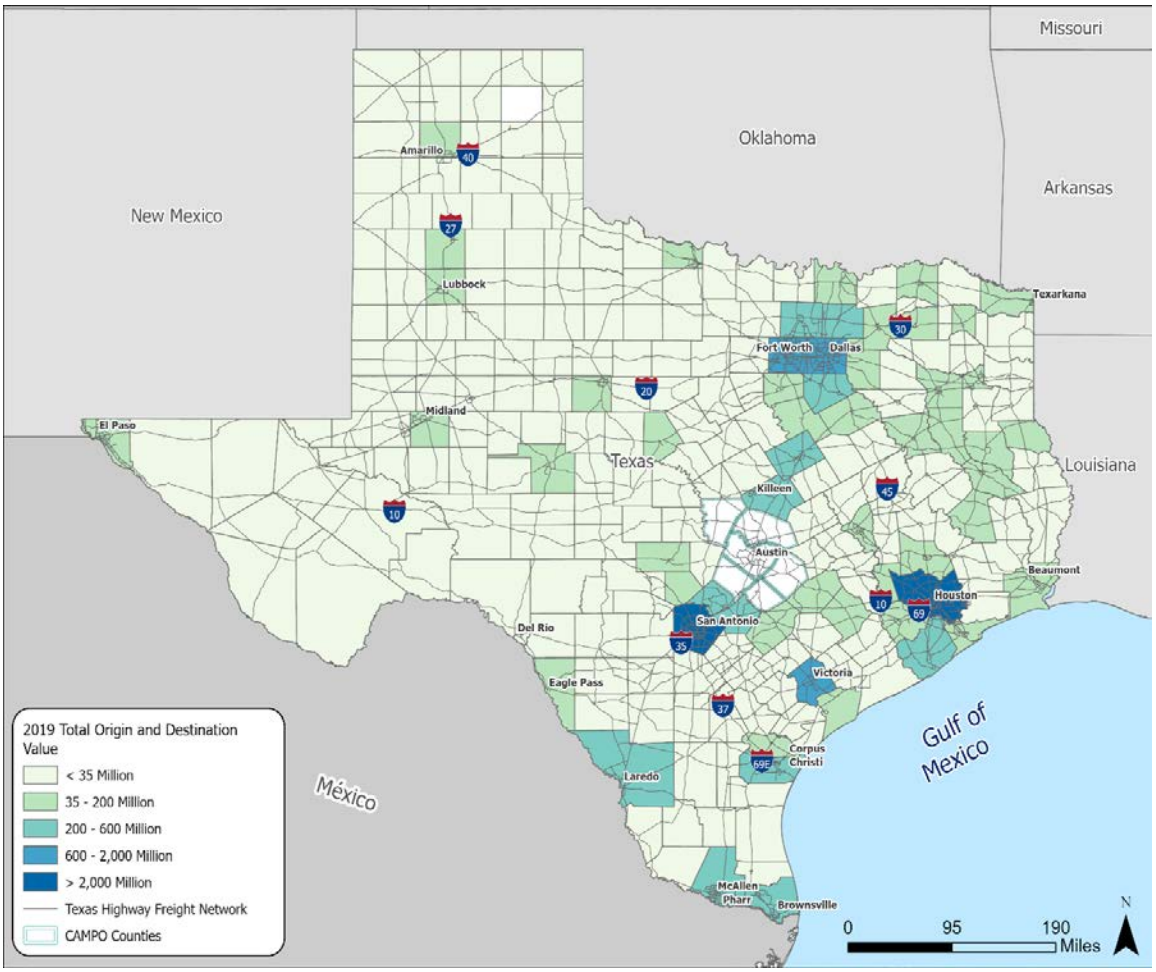
counties ranked the sixth, eighteenth, and nineteenth as intrastate trading partners for the CAMPO region in terms of value, respectively.

Figure 7: Total Origin and Destination Tonnage by County outside of the CAMPO Region, 2019



Source: Cambridge Systematics analysis of 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

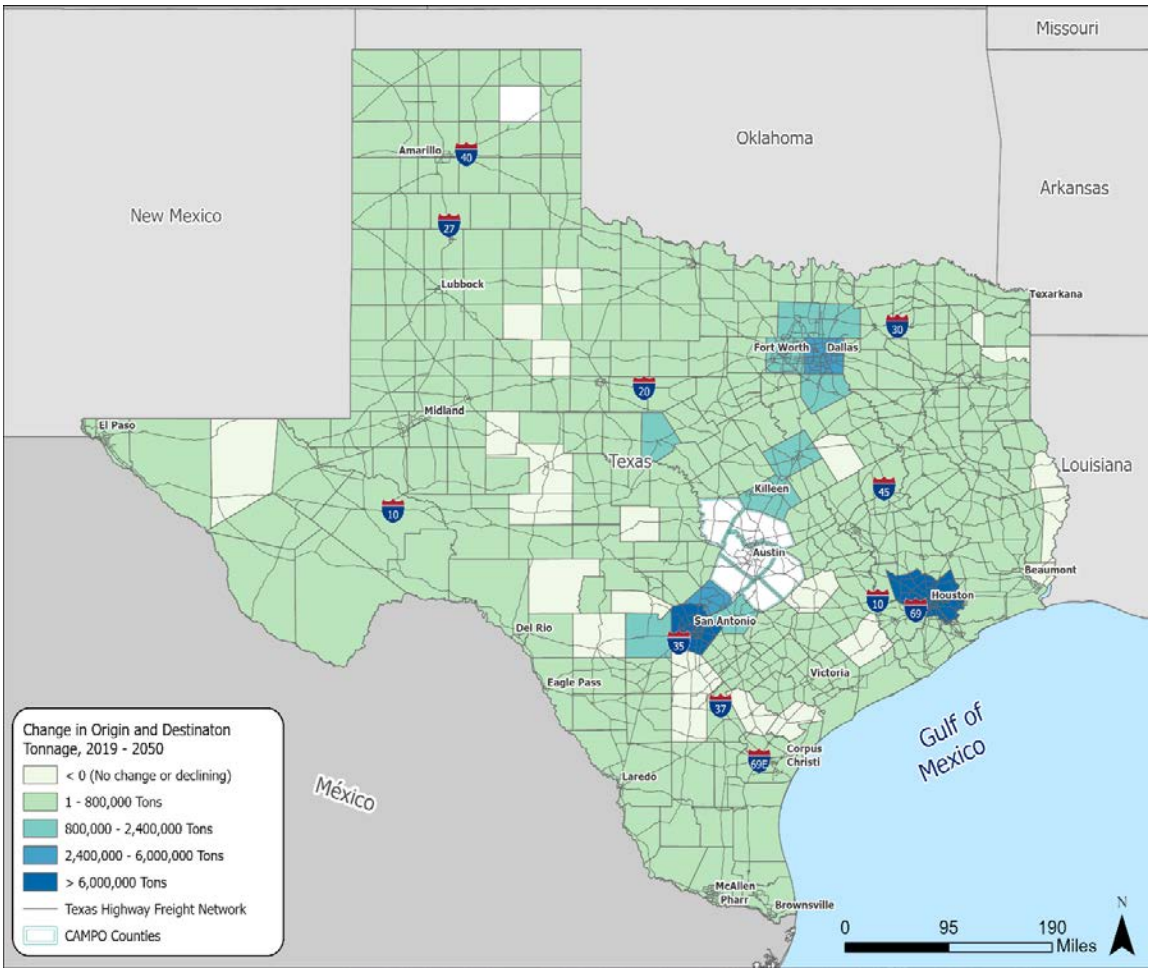
Figure 8: Total Origin and Destination Value by County outside of the CAMPO Region



Source: Cambridge Systematics analysis of 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

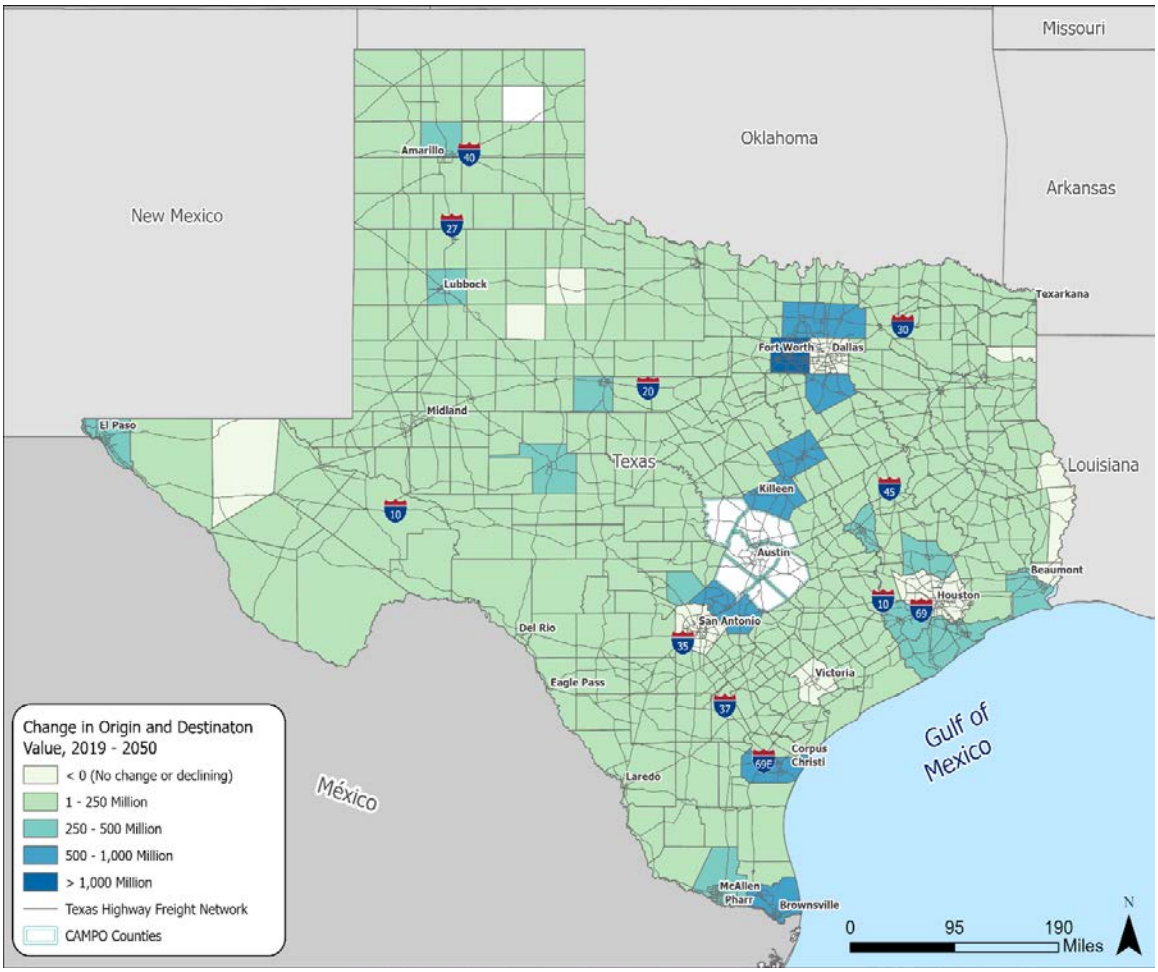
Figure 9 and Figure 10 display the absolute change in commodity tonnage and value associated with each intrastate trading partner based on the Transearch 2019 to 2050 forecasts.

Figure 9: Total Change in Tonnage by County Outside of the CAMPO Region, 2019 to 2050



Source: Cambridge Systematics analysis of 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Figure 10: Total Change in Value by County Outside of the CAMPO Region, 2019 to 2050



Source: Cambridge Systematics analysis of 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Commodity Flow by Mode

This section identifies the top commodities by total tonnage and value in 2019 and 2050 by mode. Over 95 percent of the commodity flow tonnage in the CAMPO region was transported by truck in 2019 and the remainder by rail and air. Trucks are expected to continue to be the key mode for moving freight in the region in 2050 according to Transearch projections.

Top Truck Commodities

The CAMPO roadway network transported approximately 109 million tons of commodities, valued at $72 billion in 2019. By 2050, tonnage is projected to reach 210 million tons, representing a 92 percent increase from 2019, with an estimated value of $175 billion, representing a 144 percent increase from 2019. Table 7 and Table 8 summarize the top Truck commodities by tonnage and value in 2019 and 2050.

Table 7: Top Five Truck Commodities by Tonnage and Value in 2019

Top Five Truck Commodities by 2019 Tonnage	Tons (Thousands)	Top Five Truck Commodities by 2019 Value	Value ($Millions)
Nonmetallic Minerals	59,700	Chemicals or Allied Products	$12,724
Clay, concrete, glass or Stone	15,109	Secondary Traffic	$10,323
Petroleum or Coal Products	8,402	Machinery	$7,324
Secondary Traffic	6,651	Electrical Equipment	$6,810
Waste or Scrap Materials	4,629	Transportation Equipment	$6,510
Sum of Top 5	**94,491**	**Sum of Top 5**	**$43,691**
Total Tonnage	**109,194**	**Total Value**	**$71,831**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Table 8: Top Five Truck Commodities by Tonnage and Value in 2050

Top Five Truck Commodities by 2050 Tonnage	Tons (Thousands)	Top Five Truck Commodities by 2050 Value	Value ($Millions)
Nonmetallic Minerals	84,015	Secondary Traffic	$35,977
Clay, concrete, glass or Stone	40,090	Chemicals or Allied Products	$30,172
Secondary Traffic	25,911	Food or Kindred Products	$17,505
Waste or Scrap Materials	20,445	Electrical Equipment	$17,212
Food or Kindred Products	12,031	Transportation Equipment	$14,724
Sum of Top 5	**182,492**	**Sum of Top 5**	**$115,590**
Total Tonnage	**209,577**	**Total Value**	**$175,322**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Top Rail Commodities

The freight rail network in the CAMPO region carried approximately 5 million tons of commodities valued at $1 billion, resulting in an average price of $253 per ton. By 2050, rail flow is projected to increase to 8 million tons valued at $4 billion, with an average value of $488 per ton. This trend suggests a shift in rail freight movement towards higher-value commodities. Table 9 and Table 10 summarize the top five rail-transported commodities by tonnage and value in 2019 and 2050.

Table 9: Top Five Rail Commodities by Tonnage and Value in 2019

Top Five Rail Commodities by 2019 Tonnage	Tons (Thousands)	Top Five Rail Commodities by 2019 Value	Value ($Millions)
Nonmetallic Minerals	2,437	Transportation Equipment	$464
Chemicals or Allied Products	857	Chemicals or Allied Products	$345
Lumber or Wood Products	405	Lumber or Wood Products	$107
Clay, concrete, glass or Stone	385	Petroleum or Coal Products	$ 94
Coal	178	Clay, concrete, glass or Stone	$54
Sum of Top 5	**4,262**	**Sum of Top 5**	**$1,063**
Total Tonnage	**4,567**	**Total Value**	**$1,156**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Table 10: Top Five Rail Commodities by Tonnage and Value in 2050

Top Five Rail Commodities by 2050 Tonnage	Tons (Thousands)	Top Five Rail Commodities by 2050 Value	Value ($Millions)
Chemicals or Allied Products	3,444	Transportation Equipment	$2,130
Nonmetallic Minerals	2,816	Chemicals or Allied Products	$1,373
Clay, concrete, glass or Stone	810	Lumber or Wood Products	$175
Lumber or Wood Products	595	Clay, concrete, glass or Stone	$118
Transportation Equipment	235	Food or Kindred Products	$80
Sum of Top 5	**7,900**	**Sum of Top 5**	**$3,876**
Total Tonnage	**8,281**	**Total Value**	**$4,040**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Top Air Cargo Commodities

Air cargo represents a small fraction - less than one percent - of the total freight flows originating or destined in the CAMPO region. This mode is commonly used for high-value commodities due to its higher cost. Air cargo transported 88,000 tons of goods with a total value of $13 billion in 2019 and by 2050, the figures are expected to increase to 226,000 tons, with a value of $25 billion. Table 11 and Table 12 summarize the top air commodities by weight and value.

Table 11: Top Five Air Commodities by Value and Tonnage in 2019

Top Five Air Commodities by 2019 Tonnage	Tons (Thousands)	Top Five Air Commodities by 2019 Value	Value ($Millions)
Small Packaged Freight Shipments	32	Misc. Manufacturing Products	$4,304
Electrical Equipment	11	Electrical Equipment	$2,738
Misc. Mixed Shipments	8	Transportation Equipment	$1,927
Misc. Manufacturing Products	6	Misc. Mixed Shipments	$1,166
Mail or Contract Traffic	5	Chemicals or Allied Products	$902
Sum of Top 5	**61**	**Sum of Top 5**	**$11,036**
Total Tonnage	**88**	**Total Value**	**$12,858**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Table 12: Top Five Air commodities by Value and Tonnage in 2050

Top Five Air Commodities by 2050 Tonnage	Tons (Thousands)	Top Five Air Commodities by 2050 Value	Value ($Millions)
Small Packaged Freight Shipments	100	Misc. Manufacturing Products	5,336
Misc. Mixed Shipments	29	Chemicals or Allied Products	4,741
Electrical Equipment	17	Electrical Equipment	4,581
Chemicals or Allied Products	14	Misc. Mixed Shipments	4,169
Mail or Contract Traffic	12	Transportation Equipment	2,949
Sum of Top 5	**172**	**Sum of Top 5**	**21,776**
Total Tonnage	**226**	**Total Value**	**25,264**

Source: 2019 Transearch updated to reflect energy-related commodities (sand, brine, and water), and international water and air cargo.

Freight Intensive Development and Land Use

The CAMPO region is a prime location for new freight-intensive users seeking to locate and/or expand. Industries and businesses have been focusing on the region, looking for large buildings with immediate occupancy, cities with light and heavy industrial land uses available for new construction, and proximity to the freight network system. Companies are also attracted by state and local programs designed to spur economic development and job creation. The Texas Enterprise Fund for example, offers incentives and financing for businesses expanding or relocating to Texas.

According to the Capital Area Council of Government's (CAPCOG) 2020-2025 Comprehensive Economic Development Strategy, the fastest job growth in the region occurred in the transportation and warehousing, information, professional, scientific, and technical services, and construction sectors.[3] The report indicates the need for more multimodal facilities to support business development, including attracting and serving the needs of manufacturing.[4] It considers this achievable in recognizing the potential for CAPCOG jurisdictions to support expanded freight infrastructure across the region.[5]

Understanding freight trends from the context of land use and economic development supplies essential context to the factors that are driving demand for freight. The future freight-growth potential of the region and where growth will concentrate provides insights for improvements to freight access and mobility and policies to preserve the most compatible parcels for freight-intensive uses. At the local level, cities that coordinate land use planning and economic development incentives can direct industrial development towards compatible areas and thus, reduce potential impacts of freight movement and optimize connectivity with the rest of the system.

Approach

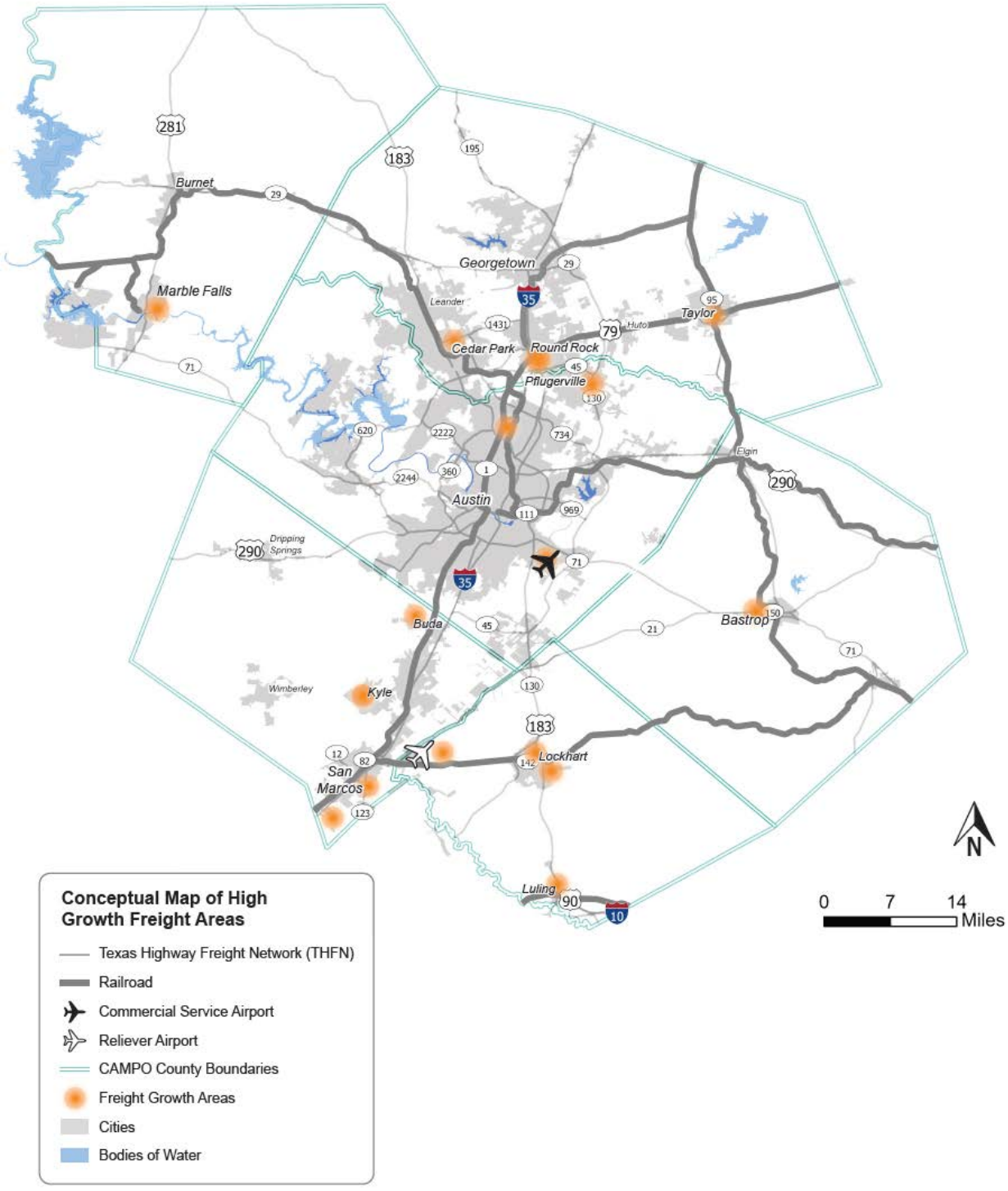
Several methods were used to gather information and identify areas with potential freight-intensive growth, including:

- Freight-intensive industry interviews.
- Research into Economic Development Corporation priorities.
- Evaluation of comprehensive planning policies supporting freight-intensive uses.
- Future Land Use maps.
- Digital news articles for information on future industrial parks and developments.

Appendix A provides a detailed assessment of land use policies, examines economic development priorities, and identifies major planned projects, where available. The information was used to create a conceptual map of freight-growth areas, which is shown in Figure 11, highlighting cities in the region that are poised to attract major freight-related developments and expansion of industrial uses. Many of these high-growth locations are found in exurban and peripheral areas where land is readily available, and in proximity to the multimodal freight network. For these cities, the future land use assessment in **Appendix A** includes a detailed profile of their land use policies and economic development priorities that support freight-intensive uses in each county. **Appendix B** includes available future land use maps used to inform the assessment.

[3] Voights, Betty. "Comprehensive Economic Development Strategy" (p. 5). Capital Area Council of Governments, 2020 Accessed from: https://www.capcog.org/wp-content/uploads/2021/11/CEDS-2020-2025-Updated-Final.pdf
[4] Ibid p. 17
[5] Ibid p. 17

Figure 11: Conceptual Map of High Growth Freight Areas



Note: San Marcos Regional Airport is the FAA designated reliever airport for both the Austin-Bergstrom and San Antonio International Airports (https://flysanmarcos.com/).

Land Use Assessment Summary

In the CAMPO region, the cities have local control over land use policies and zoning, which influences the development and siting of industrial uses and freight generators in incorporated and unincorporated areas. Land use policies play a vital role in regional freight planning, especially when accommodating freight-intensive industries like manufacturing and warehousing. These policies, typically articulated in city comprehensive plans, aim to strategically situate such industries in the CAMPO region. Land use considerations for freight balances several key factors, including accessibility to the roadway network, minimizing impact on residential and environmentally sensitive areas, and ensuring efficient access and local circulation, particularly for truck traffic.

Efficient first and last-mile connectivity for trucks is essential for the overall efficacy of the freight network. Thus, land use planning should be coordinated with the development of the necessary infrastructure to accommodate the volume of truck traffic and their loads. Upgrading local roadways and ensuring seamless connectivity with the THFN can significantly enhance the mobility and safety of trucks, thereby reducing congestion impacts in residential areas.

Moreover, the strategic importance of land use policy extends to regional economic development strategies. City and county governments in the CAMPO region often strive to attract freight-intensive industries due to their potential for job creation, local workforce training, and tax revenue generation. The effective use of land use policies can facilitate such economic growth by ensuring the region remains an attractive choice for industries and corporations considering relocation or expansion. To this end, many cities in the region offer tax incentives and grants as part of a comprehensive benefits package aimed at enticing investment. At the local level, the creation of reinvestment zones or districts can provide further tax advantages, making the region even more appealing for companies planning to build manufacturing facilities or warehouses in certain areas.

Furthermore, land use planning can identify and prepare locations optimal for heavy freight activity. Developing infrastructure in these areas to accommodate truck movements and oversized/overweight loads is crucial. It is essential that these locations not only accommodate the needs of freight-intensive industries but also minimize impact on surrounding areas.

Overall, strategic land use planning, when aligned with regional and local economic development strategies, can accommodate the needs of freight intensive industries while minimizing potential negative impacts. At the county level, the development of long-range transportation and thoroughfare planning plays an important and complementary role. These efforts contribute to policies, project improvements, and investment decisions that provide essential roadway infrastructure in areas where freight intensive uses will be concentrated. By ensuring the necessary infrastructure for optimal freight mobility, safety, and connectivity, the CAMPO region positions itself as an ideal location for these industries.

Freight Transportation Trends

Freight movement in the CAMPO region and throughout the world, has changed significantly over the last several years due to consumer demand, business practices, and supply chain upheaval from the COVID-19 pandemic. The industry is poised to further transform as a result of vehicle automation, fuel alternatives, intelligent infrastructure, and continued adaptation to consumer and business practices. This section discusses freight trends by mode, with a focus on technologies that are shaping the industry, including potential disruptors. The developments discussed in this section highlight both private and public sector advancements in freight operations and applications that have the capacity to increase transportation system performance, safety, and efficiency.

Roadway Industry Trends and Developments

Development of the roadway system is central to the mission of CAMPO, and trucks carry over 95 percent of tonnage in the CAMPO region. Responding to truck trends will be essential to making informed investments in the roadway network that enhance safety, mobility, and economic competitiveness for the general public as well as the freight community.

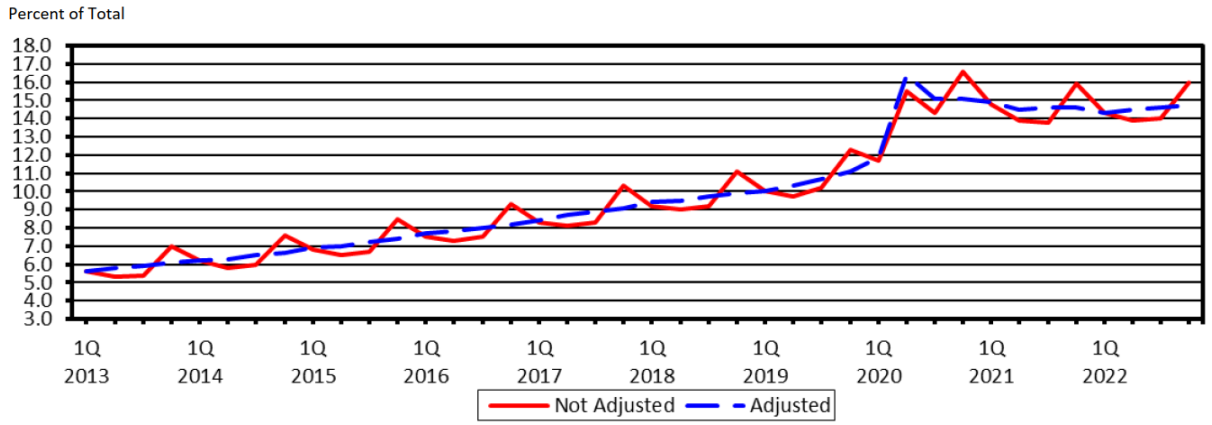
Smart Highway Infrastructure

Smart infrastructure uses technology to monitor, communicate, and adapt to conditions on the roadway network. Smart highway infrastructure applications can include infrastructure-to-infrastructure (I2I) applications in which assets communicate with other assets, as well as vehicle-to-infrastructure (V2I or I2V) applications in which infrastructure assets communicate with vehicles. Specific applications and technologies are described throughout this section. Notably, TxDOT has recently invested in smart highway infrastructure through its Texas Connected Freight Corridors (TCFC) program, a 36-month testbed of technology applications on IH 35 from Laredo to Dallas, IH 45 from Houston to Dallas, and IH 10 from Houston to San Antonio. The TCFC pilot included deployment of connected vehicle technologies to over 1,000 commercial vehicles to share information about traffic conditions, wrong-way driving, crash and queuing notifications, and truck parking availability. V2I/I2V technology will also enable freight signal prioritization near large freight generators.

E-commerce, Warehousing, and Distribution

While the trend toward e-commerce delivery to homes and businesses has been growing steadily for two decades, the COVID-19 pandemic significantly accelerated this trend. Post pandemic, this growth is slowing and returning to the prior trend. According to the U.S. Census Bureau, total e-commerce sales in dollars for 2022 increased 7.7 percent over 2021, while e-commerce as a percentage of all retail sales remained steady at 14.6 percent (Figure 12). One of the key impacts of e-commerce on truck transportation is the geographic dispersion of deliveries. Large, consolidated truck deliveries to stores have been replaced with more less-than-truckload deliveries to stores, more movement in between warehouses and distribution centers (i.e., secondary traffic) and frequent deliveries directly to individual residences and businesses. The commodity flow analysis also highlighted this growth in e-commerce and warehousing according to the 2050 Transearch projections. In 2019, nearly 7 million tons of secondary traffic moved on the CAMPO region's roadway network, and in 2050, the tonnage is estimated to reach 26 million tons, representing a 271 percent increase.

Figure 12: Estimated Quarterly U.S. Retail E-commerce Sales as a Percentage of Total Quarterly Retail Sales



Source: U.S. Census Bureau. (Note that the blue line has been adjusted for seasonal variation).

The rise of e-commerce has led to the astounding growth of warehouses and distribution centers, with annual development of new sites across the country more than tripling in the past five years. The growth in secondary traffic as a key commodity directly reflects this trend as well. Supply chains require faster times to market, leading to growing demand for warehouses, distribution centers, and fulfillment centers to support e-commerce and next-day delivery activities. Faster times to market require warehousing locations closer to markets as well, leading some analysts to estimate that e-commerce requires three times more warehousing space per product than traditional retail stores.[6]

In the CAMPO region and other Texas metropolitan areas, these development patterns have led to a network of fulfillment centers near centers of activity, especially on the edges of existing development where large tracts are available, land is more affordable, and consumers are nearby. Decentralization of warehousing and distribution centers results in more widespread impacts to the roadway system: rather than a single warehouse on a major highway, transportation infrastructure now must accommodate movements to and from distribution and fulfillment centers directly to customers. Many of these require travel in residential neighborhoods and on roadways of various functional classifications.

As truck volumes grow to serve this demand, traffic and congestion can become an issue for residents and businesses. Delivery delays and their causes will be more visible to residents. This could lead to a higher incidence of complaints but could also make the challenges of freight delivery more tangible and meaningful to citizens. Concern for the safety and environmental qualities of delivery trucks is likely to increase, putting pressure on the adoption of emerging and new technologies—including use of more electric vans and natural gas and hybrid electric trucks—and safety advances associated with connected and automated/autonomous vehicles.

Automation at Ports, Intermodal Terminals, and Warehouses

There have been many developments to automate various goods movement functions such as receiving, stocking, and picking at both warehouses and ports. This type of automation relies on robotics and advanced sensing. As an example, the British online-only supermarket Ocado has

[6] Prologis (June 17, 2020), COVID-19 special report #6: "Accelerated Retail Evolution Could Bolster Demand for Well-Located Logistics Space." https://www.prologis.com/news-research/globalinsights/covid-19-special-report-6-accelerated-retail-evolution-could-bolster

built fully automated warehouses that can run 24-hours a day without having to hire late-night shift workers. The warehouse is populated with over a thousand robots that lift, move, or sort groceries day and night, processing 3.5 million items every week. Their actions are coordinated by a central computer, which ensures that the robots are used as efficiently as possible. All robots are interchangeable, which makes it easy to replace them if they break down or to add more if Ocado wants to scale up operations. Ocado has partnered with Kroger in the U.S., including at a site in Dallas.[7] Similarly, Amazon employs automated technology within certain fulfillment centers.[8] In addition, Amazon employs automated gate technology, including app-based software that allows drivers to efficiently proceed in and out of facilities. BNSF Railway encourages truck drivers accessing intermodal terminals to use their proprietary RailPass application to minimize gate time and proceed efficiently through an intermodal facility.[9] The primary benefits from automating intermodal terminals, fulfillment centers, and facilities functioning as inland ports and warehouses are efficiency and cost savings.

Drayage Optimization

Drayage is the transportation of freight for short distances by trucks. It may include trucking between terminals, or trucking from terminals to warehouses, distribution centers, or directly to the final destination. Drayage operators often take many short trips in a day, often between only a few origins and destinations. Software solutions exist that provide insight into supply chain analytics and support and optimize drayage operations through better coordination and monitoring of the process. There are also mathematical models to match drayage truck capacity and trailer/container availability and appointment scheduling at intermodal (rail and port) terminals. As an example, Amazon Relay, a technology platform hosting over 55,000 trucking companies ranging in size from single-cab owner-operators to large fleets, connects freight loads with available capacity, and moves hundreds of thousands of loads per week. Amazon uses Relay to enable drivers and fleets to book drayage jobs, servicing domestic and international container customers.[10] In addition, new data are becoming available from emerging technologies such as telematics and connected and automated vehicles (CAVs) that open opportunities to understand freight movements in more granular detail and determine ways to better optimize drayage operations.

Smart Trailers

Smart trailers can include any type of trailer, from flatbed to refrigerated trucks, which provides insights into the status of the trailer and its cargo using sensors that measure a wide array of features, including mileage, location, temperature, humidity, shock, and vibration. Smart trailers are typically equipped with telematics technology (described in the following Telematics and Freight Traveler Information section) that can provide real-time data visibility and reporting to fleet owners. This technology helps fleet owners optimize their operations and protect their assets.

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[7] Supermarket News. 2021. https://www.supermarketnews.com/technology/inside-look-kroger-s-first-ocado-robotic-warehouse
[8] About Amazon. 2022. https://www.aboutamazon.com/news/operations/10-years-of-amazon-robotics-how-robots-help-sort-packages-move-product-and-improve-safety
[9] BNSF Railway. 2023. https://www.bnsf.com/ship-with-bnsf/intermodal/railpass.page
[10] Amazon. 2023. https://relay.amazon.com/amazon-relay-spot-work-to-keep-fleets-moving

Telematics and Freight Traveler Information

Telematics is the integrated use of communications and information technology to transmit, store, and receive information from telecommunications devices to remote objects over a network. In the trucking industry, this often involves having an aftermarket device installed in the cab that can send and receive tailored information from a third-party service provider. Telematics systems can also be used for fleet management purposes such as to monitor remote assets and drivers. Leading telematics service providers include Trimble, GeoTab, Solera, and Verizon Connect.

Telematics traveler information typically includes freight-specific information such as dynamic route guidance, route restrictions, low bridge heights, parking availability information, weather information, work zone status, rail crossing information, and border/port wait times. Some basic freight traveler information is also available through state departments of transportation and third-party data integrators such as INRIX and Waze.

Smart Truck Parking

The parking of trucks is a critical step in the operation of both short- and long-haul freight carriers. Trucks require space to park while loading and unloading as well as to comply with federal Hours of Service (HOS) regulations established by the Federal Motor Carrier Safety Administration (FMCSA), which require frequent rests for all property carrying drivers. The recent requirement that trucks be equipped with electronic logging devices has enhanced enforcement of HOS.

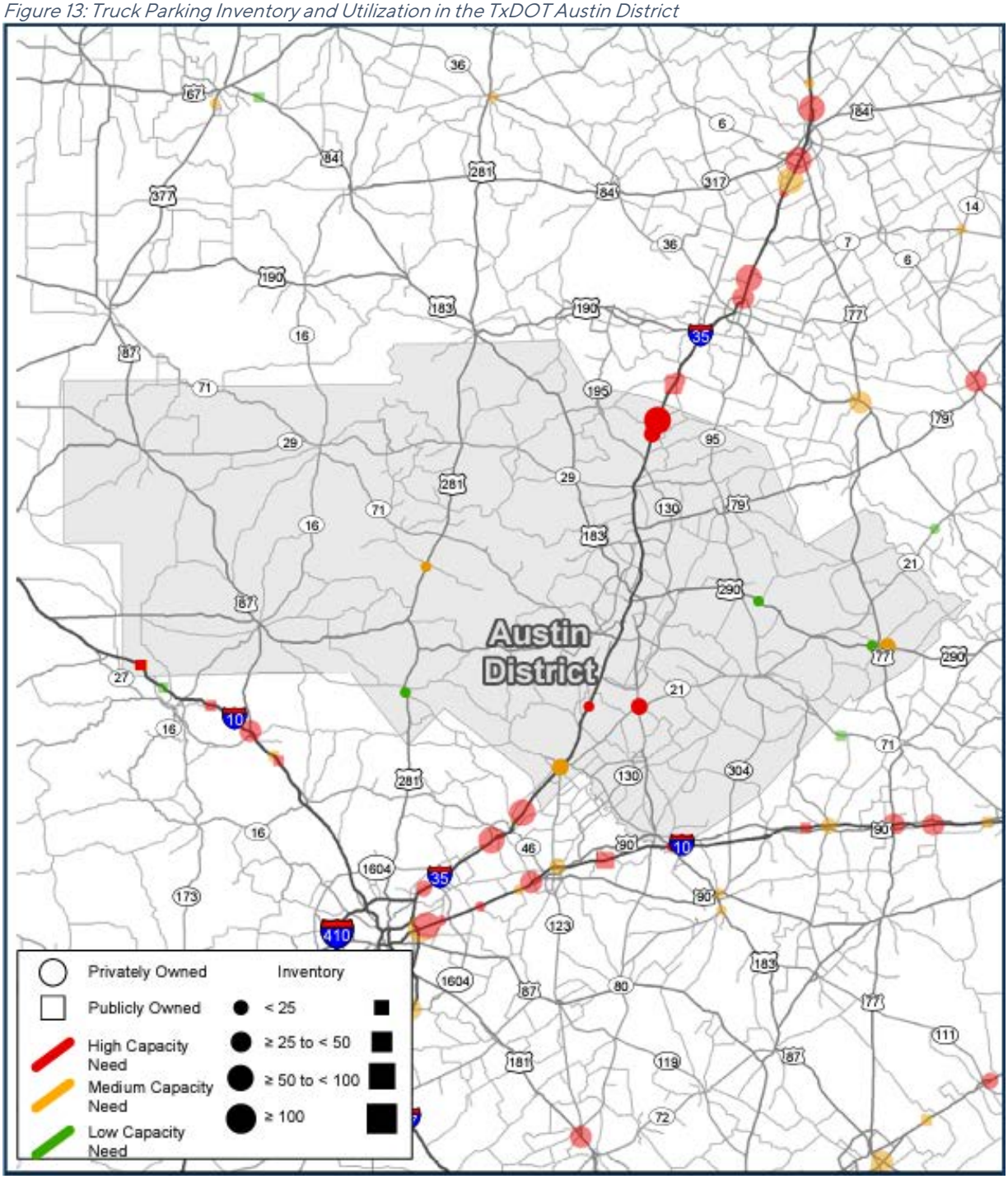
The inability to find safe parking has become one of the top issues for truck drivers around the country. Texas possesses multiple long-haul trucking corridors, which are used by drivers who need to rest and adhere to HOS regulations. Urbanized areas such as Austin also have a high concentration of truck origination and termination trips, and truck drivers prefer to park overnight close to where they have to make a delivery or pick up a load. Undesignated parking, which occurs when drivers are unable to find parking at designated facilities, can pose a safety risk to drivers and other vehicles, and is typically illegal. Difficulty in finding places to rest, either at establishments or along major truck routes, combined with increased pressures to maximize revenues, can lead truck drivers to undertake risky behavior by driving while fatigued.[11] [12]

The Texas Statewide Truck Parking Study found that parking availability is particularly scarce in the TxDOT Austin District despite significant truck traffic on IH 35 and other corridors (Figure 13). As of the 2020 study, there were no truck parking locations in the majority of the Austin District, very few locations not located on IH 35, and high utilization (low excess capacity) at most locations. Since the study, CAMPO's planning partners have made strides to increase

[11] Thompson, J., Newnam, S., Stevenson, M. 2015. A model for exploring the relationship between payment structures, fatigue, crash risk, and regulatory response in a heavy-vehicle transport system. Transportation Research Part A, 82, 204–215.
[12] National Academies of Sciences, Engineering, and Medicine. 2016. Commercial Motor Vehicle Driver Fatigue, Long-Term Health, and Highway Safety: Research Needs. Washington, DC: The National Academies Press. https://doi.org/10.17226/21921

parking supply, including a $22 million RAISE grant award for a parking plaza on SH 130 submitted by Caldwell County.[13]

Figure 13: Truck Parking Inventory and Utilization in the TxDOT Austin District



Source: TxDOT, Texas Statewide Truck Parking Study, 2020. https://www.txdot.gov/projects/planning/freight-planning/truck-parking-study.html

[13] US Department of Transportation. 2023. RAISE 2023 Fact Sheets. https://www.transportation.gov/sites/dot.gov/files/2023-06/RAISE%202023%20Fact%20Sheets_2.pdf

Smart truck parking leverages data collection and data dissemination technologies to monitor, report and recommend truck parking options for commercial truckers. One recent example is the IH 10 Corridor Coalition Truck Parking Availability System (TPAS).[14] This system will make real-time truck parking information at 37 public truck parking locations along the IH 10 corridor from Texas to California available to truck drivers and dispatchers to assist them in making informed parking decisions. The system is expected to "go live" in 2024 and will include ongoing operations and maintenance. Lessons learned from the TPAS can be applied to the CAMPO region, and the Capital Area will benefit from decisions regarding selection and procurement of sensing and reporting equipment.

Advanced Driver Assistance Systems

Advanced Driver Assistance Systems (ADAS) are technologies that make vehicles safer by automating, improving, or adapting tasks involved in operating a vehicle.[15] ADAS rely on a variety of vehicle-based sensors including radar, lidar, ultrasound, and video cameras. Examples of ADAS applications include forward collision warning, automated braking, lane departure warning, and blind spot warning (Figure 14). These safety-focused systems have been appearing in new automobiles and trucks for many years and their use is expected to continue to grow.

Figure 14: ADAS Concept for Trucks

Source: Fleet Equipment Magazine 2021. https://www.fleetequipmentmag.com/advanced-truck-driver-assistance-systems/

ADAS are in the early stage of adoption and are emerging as a mature new technology. They have the advantage of providing immediate benefits while being part of the suite of technologies that lead, in time, to CAVs, and therefore are both practical and forward-looking. The primary benefit of ADAS is safety, which is a top concern of motor carriers and their drivers. Beyond their innate value in protecting human life, safety improvements reduce accident and insurance costs

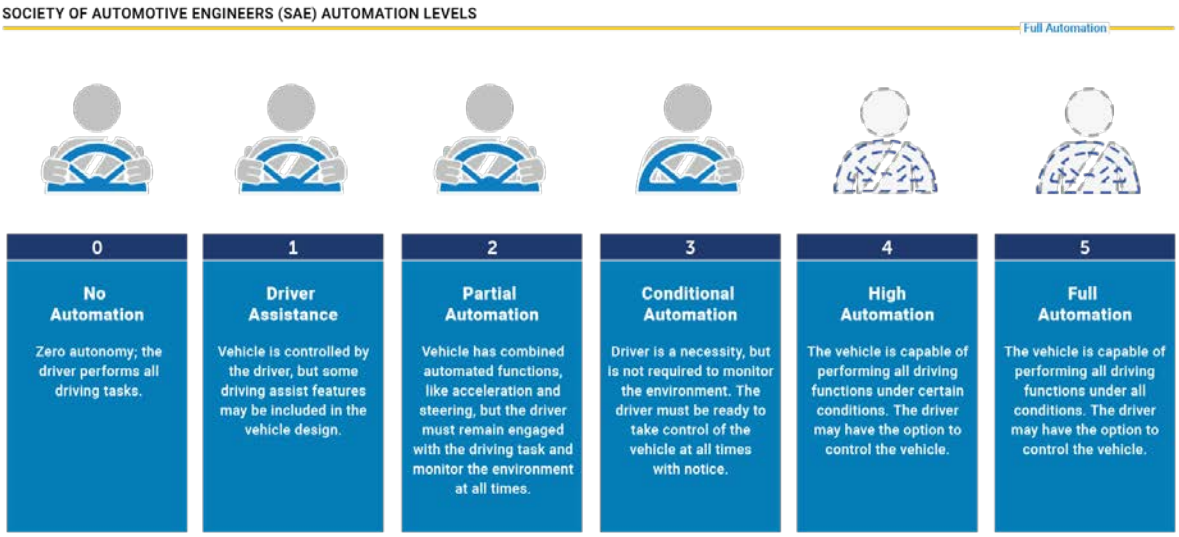
[14] IH 10 Corridor Coalition. https://i10connects.com/overview-tpas
[15] National Highway Traffic Safety Administration. https://www.nhtsa.gov/equipment/driver-assistance-technologies

in trucking, as well as risks of expensive litigation. In addition, ADAS technology is often combined with telematics to help monitor the condition of vehicles and reduce operating costs.

Connected and Autonomous Freight Vehicles

In recent years, there have been many advancements in truck automation or "self-driving trucks." These advancements have coincided with the progression of the broader automated vehicle (AV) industry. AVs are complex systems of hardware and software that perform the primary driving functions of vehicles (i.e., steering, acceleration, and braking) with varying degrees of decreased human intervention. The automated driving system (ADS) includes sensing, communicating, monitoring, navigating, and decision-making, depending on the level of automation. Vehicles can be categorized into six levels of automation, from no automation to full automation, as defined by the Society of Automotive Engineers (SAE) in the illustration below (Figure 15).

Figure 15: Society of Automotive Engineers (SAE) Levels of Vehicle Automation



Source: Federal Highway Administration 2018
https://ops.fhwa.dot.gov/automationdialogue/presentations/azwksp102418/index.htm

Most of the ADAS systems described above would fit into the SAE level 1 or 2 descriptions and have already been adopted by the trucking industry. There are several companies currently testing SAE level 3 and 4 trucks on roads today, but these systems are still not mature enough for widespread deployment. Examples of these companies include Aurora Innovation, Embark Technologies, and TuSimple. These companies are focusing on testing truck automation in specific operational design domains such as only on divided highways until the technology becomes mature enough to operate in all environments. Most industry experts believe that freight movement is likely to be one of the first AV use cases to come to market but that it will be initially limited to specific operational design domains. Level 5 trucks that can operate anywhere in all conditions are still many years away from being ready for full deployment.

There are many enabling technologies that could improve AV safety and reliability and lead to a faster deployment timeline. Enabling technologies for AVs include a combination of vehicle-to-vehicle (V2V) communication, radar and cameras, in-vehicle sensor and control systems, and V2I communications. AVs that are supported by V2I or V2V communications are referred to as

connected and automated vehicles or CAVs. Some of the benefits of CAVs include improved safety, efficiency, mobility, and cost reductions.

Freight Platooning and V2V Technology

Freight platooning uses V2V technology to enable trucks to communicate with each other and automatically control their speeds to allow them to travel at short headways, saving fuel and reducing driver workload. This technology is typically a SAE level 1 or 2 system and not as advanced as the SAE level 3 though level 5 CAVs described above. Freight platooning connects one or two following trucks to a lead truck that is manually driven, allowing the following trucks to mimic the actions of the leader. Some of the key benefits include safety and fuel reduction due to improved aerodynamics.

Platooning is potentially a key first step towards full automation. Freight platooning of three trucks using V2V technology has been successfully tested by the Federal Highway Administration (FHWA) and Volvo Trucks (Figure 16) and initial tests demonstrated potential fuel savings of nearly 10 percent.[16] However, the future market for freight platooning is somewhat uncertain. Daimler, a major truck manufacturer, discontinued platooning efforts in 2019, and Volvo Trucks has shifted their focus from platooning to fleet electrification and fully automated trucks.[17] Nevertheless, freight platooning may be effective in certain niches such as on dense freight corridors where the length of haul is deemed cost-effective for freight platooning.

Figure 16: Federal Highway Administration/Volvo Truck Platooning Demonstration

Source: Federal Highway Administration

Texas, Arizona, New Mexico, and California have also collaborated, as members of the IH 10 Corridor Coalition, to advance the IH 10 Western Connected Freight Corridor Pooled Fund

[16] Federal Highway Administration. 2019. https://www.fhwa.dot.gov/publications/research/ear/19028/19028.pdf

[17] Truck News. 2019. https://www.trucknews.com/technology/daimler-abandons-platooning-to-focus-on-automation/1003089387/

Study, funded by the FHWA.[18] The goal of this program is to implement a planning framework for operations and technologies to enable freight CAV activities, such as truck platooning, truck parking and reservation systems, and corridor-wide information systems. In general, Texas has a permissive regulatory environment that enables utilization of automation technologies including platooning.

Freight Signal Priority

Freight signal priority (FSP) is a V2I application that has been tested and evaluated in some locations but has not been widely deployed. FSP leverages V2I technology installed in trucks and at the roadside. The roadside V2I technology is connected to a traffic signal and provides wireless connectivity between the connected truck and the traffic signal. The truck can transmit its location and a request for a green light to the traffic signal, and the signal can be programmed to either extend the green time to allow the truck to make it through the intersection without stopping or reduce the red time to decrease the delay encountered by trucks.

FSP can minimize the travel time, stops and total delay for trucks, which can result in reduced fuel usage and reduced vehicle emissions. FSP is one of many specific technologies being deployed as part of the TCFC program being implemented by TxDOT.[19] Past improvements to signals and their control systems to implement adaptive signal timing, transit signal priority, transit queue jumps, and other connected applications may accelerate deployment in the Capital Area where freight needs coincide with these passenger-focused applications.

In-motion Size and Weight Inspection and Electronic Screening

The Texas Department of Motor Vehicles (TxDMV) enforces vehicle size and weight regulations. While there are many specifications that vary by vehicle type, generally commercial vehicles up to 14 feet tall and 8.5 feet wide, trailers up to 59 feet long, and a gross weight of 80,000 pounds may operate without a permit.[20] Permits are available for recurring activity or one-time trips for indivisible loads (that is, loads that cannot be broken into smaller components) or for industry-specific exemptions. Additionally, some agencies have been given legislative authority to issue oversize/overweight permits near sea or land ports (Texas Transportation Code, Title 7, Subtitle E, Chapter 623).

There are many commercially-available technologies that monitor vehicle compliance with traffic safety laws without stopping for manual inspection. Some of the key technologies include weigh-in-motion (WIM) and electronic screening for driver safety and credential compliance. The primary benefit of these technologies is in improved safety, but these technologies also have labor productivity benefits associated with their use in reducing enforcement and inspection work.

WIM technology can be deployed on the highway main lane or on the entrance ramp to a site. In either scenario, trucks are weighed as they pass over the WIM at speed. Although this measurement is not accurate enough to issue a weight citation directly, it can screen out trucks with empty loads or that are obviously over the allowed weight. TxDOT initiated a Weigh-in-

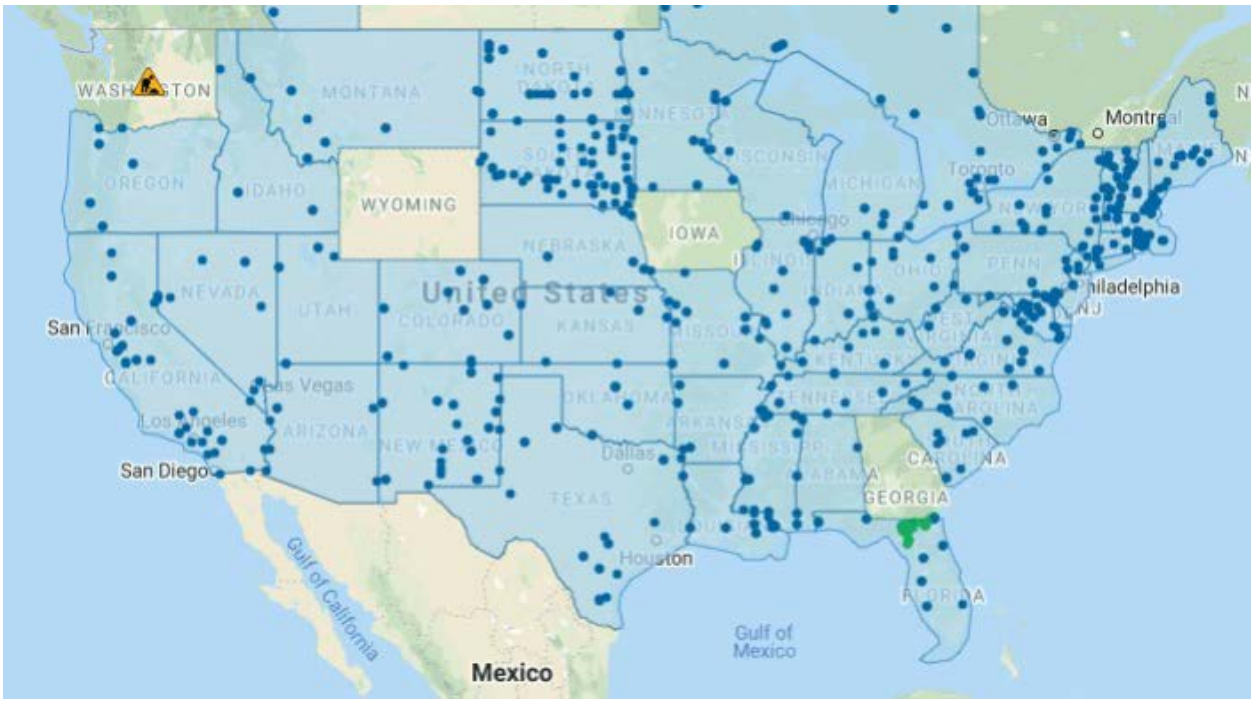
[18] Texas A&M Transportation Institute. https://static.tti.tamu.edu/conferences/ttc19/presentations/general-session-3/rutter.pdf
[19] TxDOT. https://www.txdot.gov/about/programs/innovative-transportation/texas-connected-freight-corridors.html
[20] Texas Department of Motor Vehicles. Texas Size/Weight Limits, 2023. https://www.txdmv.gov/motor-carriers/oversize-overweight-permits/texas-size-weight-limits

Motion and Vehicle Classification Strategic Plan in 2020 to determine optimal locations throughout the state and establish a deployment strategy.

Prescreening is typically done using transponders or smart phones. Under the transponder approach, trucks enroll in a program such as PrePass and are assigned a small wireless transponder designed to be mounted on the windshield. When one of these trucks approaches an equipped inspection site, an electronic reader mounted over the roadway automatically scans the transponder and identifies the vehicle and checks for compliance. Trucks not meeting compliance are required to pull over.

The smart phone approach is based on services provided by mobile application providers such as Drivewyze and, more recently, PrePass from Help Inc. In this approach, the enrollment process starts with the driver downloading and installing an application on their mobile phone. When the driver starts their trip, they turn on the application and start driving. The application will alert the driver when they cross a boundary drawn in a mapping program (a practice called geo-fencing) and are approaching an inspection location. Like the transponder approach, the vehicle is identified and compared against a list of criteria. Once a decision has been made, the driver is notified to continue driving or to pull into the inspection site via an alert on their cell phone. Figure 17 shows how widespread the Drivewyze application is deployed in the United States.

Figure 17: Drivewyze Bypass Service Locations



Source: Drivewyze Coverage Map 2022

Data Analytics / Artificial Intelligence

Another recent development in trucking technology is the use of data analytics and artificial intelligence (AI) to improve transportation operations. Data analytics and AI use a wide variety of statistical and mathematical tools to gain insights from data to support human-like decision making. Traffic data is generated from different sources, such as from traditional agency-owned road sensors and from private sector probe-based data aggregators like Google Maps and Waze. The integration of data from multiple sources, and the analysis and sharing of large

datasets or "big data" is crucial to understand travel patterns, and to help understand traffic conditions and operate transportation systems more efficiently. TxDOT has procured data subscriptions that include truck GPS data and other in-cab unit data to support planning and decision-making. Some subscriptions include access for MPOs to expand capacity for freight planning throughout the state.

Vehicle Electrification

Commercial-vehicle electrification has reached the point of being viable and cost effective in several applications. As the costs have decreased and governments increase incentives for electrification and raise standards for diesel-powered trucks, the electrification of truck fleets has become more of a practical possibility than ever. Truck electrification includes a wide range of technologies, each with different advantages. Truck electrification using batteries is the most common type, encompassing battery-only electric, hybrid electric, and plug-in hybrid electric.

Americas Commercial Transportation Research Company projects that by 2035, battery-electric trucks will comprise half of Classes 4 through 8 vehicles sold in the United States.[21] The company's cost analysis found that battery-electric, medium-duty trucks have cheaper total cost of ownership than comparable diesel trucks, and this advantage is expected to increase as battery technology continues to improve and new regulations are introduced to curtail diesel emissions. The highest adoption rates are forecast for Classes 6 through 7 trucks (60 percent in 10 years), while Classes 4 through 5 trucks are more likely to switch to gasoline engines. Class 8 trucks are likely to favor diesel engines until emission regulations are tightened. The transition to electric is well underway at Amazon, which committed to purchasing 100,000 new Rivian Electric vans. As of March 2023, Amazon has 3,000 Rivian Electric vans operating across the United States that have delivered 75 million packages since entering service (Figure 18).[22]

[21] https://www.truckinginfo.com/10161524/act-half-of-class-4-8-sales-to-be-bev-by-2035
[22] https://www.aboutamazon.com/news/transportation/everything-you-need-to-know-about-amazons-electric-delivery-vans-from-rivian

Figure 18: Amazon Rivian Electric Van

Source: Rivian Van – Amazon

In addition to traditional plug-in charging, electromagnetic induction, or wireless, charging technologies have been piloted for transit systems and show promise for freight use along local delivery routes. Induction charging involves in-pavement coils that transmit electricity to a vehicle outfitted with corresponding coils. The vehicles can park on top of the induction charging infrastructure for short intervals to receive partial charge. In 2021, Tesla partnered with WAVE, owned by Ideanomics, to pilot induction charging for its electric semi-truck. WAVE estimates charging power of 500 kilowatts to 1 megawatt.[23]

Texas National Electric Vehicle Implementation (NEVI) Plan

The Infrastructure Investment and Jobs Act (IIJA) authorizes a new formula funding program for NEVI, which allocates money to states specifically for vehicle electrification projects. Texas is set to receive approximately $408 million between FY2022 and FY2026 under this new program.[24] To meet program requirements, each state must submit a NEVI Plan. In 2022, Texas submitted its NEVI Plan, which documents the existing conditions regarding statewide vehicle electrification infrastructure and outlines planned infrastructure investments.

As of August 2023, TxDOT opened Phase 1 of the Texas Electric Vehicle Infrastructure program for applications. Within MPOs, grants are issued via the following steps:[25]

- TxDOT provides resources to MPOs through an Inter-Agency Contract to write regional EV charging plans using the Texas EV Plan as a template
- TxDOT drafts request for grant application based on regional EV charging plans

[23] https://www.vehiclesuggest.com/tesla-move-to-wireless-charging/
[24] USDOT, 5-year National Electric Vehicle Infrastructure Funding by State, 2022. https://www.fhwa.dot.gov/bipartisan-infrastructure-law/evs_5year_nevi_funding_by_state.cfm
[25] TxDOT, Texas Electric Vehicle Charging Plan, 2023. https://ftp.txdot.gov/pub/txdot/get-involved/statewide/EV%20Charging%20Plan/TexasElectricVehicleChargingPlan.pdf

- TxDOT scores responses
- TxDOT selects grant recipients
- MPO updates Transportation Improvement Program (TIP)
- Awardees construct and operate stations for 5 years
- TxDOT collects station usage reports from awardees and reports to FHWA.

Alternative Truck Fueling

Hydrogen fuel-cell engines run on stored hydrogen gas (similar to how gasoline is stored in a tank). The hydrogen is then piped to the fuel-cell stack, where chemical processes create electricity. This electricity, combined with electricity from a lithium-ion battery and from regenerative braking, then powers the vehicle. Hydrogen gas is refueled similarly to gasoline and diesel, making it relatively straightforward to integrate with existing truck fueling infrastructure.

Hydrogen trucks are currently being used in limited applications, and hydrogen cell equipment development has recently focused on reducing vehicle weight and the retrofitting of existing vehicles to make the technology more accessible and affordable. Range, power, investment in charging or fueling locations, and technology advances will all influence the future market share of battery and hydrogen fuel cell freight vehicles. Limited deployments exist in the US today, including drayage operations near the Ports of Los Angeles and Long Beach.[26,27]

Cargo Bikes

A cargo bike is a human-powered vehicle designed and constructed specifically for transporting freight. Cargo bike designs include a cargo area consisting of an open or enclosed box, a flat platform, or a wire basket, usually mounted over one or both wheels, low behind the front wheel, or between parallel wheels at either the front or rear of the vehicle. The frame, drivetrain, and wheels must be constructed to handle loads larger than those on an ordinary bicycle. An electric cargo bike adds an electric motor and battery to a cargo bike. This provides extra power and assistance up to a speed limit governed by electric bike laws.

Cargo bikes are increasingly being used for last-mile delivery, especially in dense urban areas. Cargo bikes and trailers can use bike lanes and travel where trucks and vans cannot and often carry smaller standardized mini-containers that can travel on vessels, trucks, or vans. Their width is typically about 3 feet, allowing them to travel in most bike lanes. However, some regions have prohibited cargo bikes of a certain size, speed, or number of wheels to use bike lanes. For example, the Code of Ordinances in the City of Austin prohibits use of motorized vehicles in bicycle lanes, excepting motorized bicycles, scooters, and similar vehicles traveling at speeds up to 20 miles per hour.[28] A typical cargo bike travels at speeds of 12 to 25 miles per hour and can carry a maximum load of about 400 pounds. Some cargo bikes are equipped with various sensors and displays to show location, engine power, wear, and weather.

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[26] FreightWaves, 2022. https://www.freightwaves.com/news/act-expo-exclusive-first-ride-in-hyzon-hydrogen-powered-fuel-cell-truck

[27] Telios, Toyota Port of Long Beach Fuel Cell, 2022. https://teliospc.com/projects/toyota-port-of-long-beach-fuel-cell/

[28] City of Austin, Code of Ordinances, Title 12, § 12-1-21 - DRIVING IN BICYCLE LANE. https://library.municode.com/tx/austin/codes/code_of_ordinances?nodeId=TIT12TRRE_CH12-1TRREAD_ART1DEAP_S12-1-1DE

Figure 19: UPS Quad Cargo Bike

Source: UPS

Cargo bikes have been successfully introduced in various markets across the world and for different types of deliveries. FedEx and UPS have conducted several large-scale field trials with cargo bikes and are ramping up their use. Some cargo bike products are being developed to meet the requirements for specific markets such as grocery delivery.

Delivery Robots

A delivery robot is an autonomous, electric-powered robot that provides last-mile delivery services via local streets and sidewalks. An operator may remotely monitor and take control of the robot in certain situations that it cannot resolve by itself, such as when it is stuck in an obstacle. Delivery robots can be used in various settings, including food delivery, package delivery, hospital delivery, and room service.

Delivery robots can reduce transportation costs for consumers while delivering small to medium sized loads in a sustainable , safe, and efficient way. Testing and pilot projects are ongoing throughout the world, with fully autonomous robots delivering goods in a variety of use cases, both on roads and in campus environments. Delivery robots can deliver anything from convenience goods and e-commerce packages to groceries and electronics. Robots developed by Nuro have full HVAC systems and are designed with grocery delivery in mind. Sodexo has procured "Kiwibots" for food delivery at 50 college campuses across the United States. While delivery robots typically travel at slower speeds and off the main roadway, the Nuro robot can travel on neighborhood streets at up to 25 miles per hour (Figure 20). The Capital Area has been home to operations of small food delivery vehicles, such as the Refraction AI pilot delivering food from two Austin Chick-fil-A locations (2021) and the COCO Delivery vehicles serving various restaurants and vendors (2022).[29]

[29] KVUE, Remotely-piloted robot deliveries rolling out in Austin, 2022. https://www.kvue.com/article/news/local/remotely-piloted-robot-deliveries-rolling-out-in-austin/269-b4567d88-a85b-4001-a837-b1fc28d8a666

Figure 20: Nuro Delivery Robot on Shared Roadway

Source: Nuro

Given the low travel speeds and small vehicle size compared to conventional vehicles, some delivery robots may operate best outside of main travel lanes on busy roadways and operate instead in bicycle lanes or on sidewalks. Although Texas's permissive regulatory environment is less restrictive than other states, possibly spurring adoption, large urban areas may be hesitant to embrace small delivery vehicles occupying sidewalk space due to concerns about pedestrian safety, accessibility, or operation of a motorized vehicle on sidewalks. The Texas Transportation Code permits personal delivery vehicles to operate on sidewalks traveling up to 10 miles per hour. [30]

Rail Industry Trends and Developments

While CAMPO does not have control over the freight rail system and its operation, the rail system directly influences CAMPO by providing alternatives to highway travel, interacting with other modes at at-grade crossings, and requiring coordination during project development.

Operational Practices and Precision Scheduled Railroading

Over the last decade, Class I railroads have prioritized lowering operating costs over expanding service, an operational practice frequently referred to as Precision Scheduled Railroading (PSR).[31] Not all railroads use the term PSR, and specific implementation methods vary. In general, this strategy results in railroads serving fewer, larger customers, foregoing stops at smaller yards or customers that may have been served under prior operational practices.

These trends have several impacts to the roadway network and land use planning:

- Truck traffic to or from rail-served facilities are destined for fewer, larger rail yards or customers, resulting in fewer locations generating this type of demand. As CAMPO plans for freight-generating land uses, access to these facilities is important.

[30] Texas Transportation Code. Title 7. Subtitle C. Chapter 552A. Subchapter A. Sec. 552A.0006. https://statutes.capitol.texas.gov/Docs/TN/htm/TN.552A.htm

[31] Class I railroads are the nation's largest rail companies which operate vast, multistate networks. There are three Class I railroads in Texas: BNSF Railway, CPKC (formerly Kansas City Southern), and Union Pacific.

- Smaller businesses are more dependent on trucks to ship goods, and shifting to rail to avoid congestion or seek a lower transportation cost is less likely to be feasible. While businesses may have the option to truck goods to a rail yard, moving goods between modes adds additional cost and potential for disruption. Instead, businesses may choose to rely on trucks for the entire shipment, increasing truck travel on the roadway system.
- PSR has also resulted in longer trains to increase revenue generated by each train. Longer trains require additional time to travel through at-grade crossings with the roadway system, resulting in additional delay on the roadway system to allow trains to pass. When planning grade separation projects or new corridors, CAMPO can consider options that reduce the impact of delay at at-grade crossings.
- Development or encouragement of new rail-served facilities requires significant coordination with railroad companies to determine whether future service is possible within the context of the larger system. Prioritization of the existing network was recently demonstrated in Texas when Union Pacific stopped construction of the Brazos Yard in Southeast Texas, choosing instead to focus on existing facilities.[32]

Rail Safety

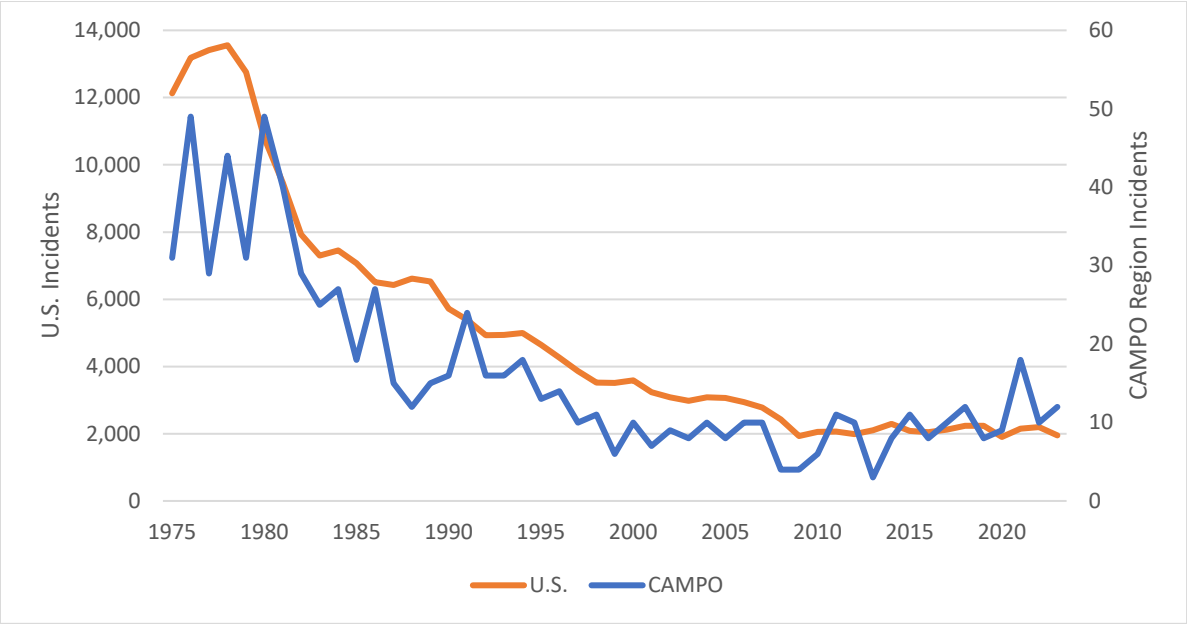
Transportation safety is a shared core goal of CAMPO and railroads, and safety projects are good candidates for collaboration between CAMPO and railroad operators. This section discusses safety trends at at-grade crossings and within the rail system.

At-Grade Crossings

At-grade crossings, or locations where the roadway and rail systems intersect, have potential for collisions between trains, vehicles of any kind, bicycles, and pedestrians. Grade crossing incidents were reduced significantly between 1975 and 2010 both nationally and within the CAMPO region due to measures such as signals and crossing arms to alert travelers and prevent crossings as trains approach (Figure 21). Since 2010, the number of incidents per year has remained steady nationwide. However, incidents in the CAMPO region trended up in the past 15 years.

[32] Trains. January 2021. https://www.trains.com/trn/news-reviews/news-wire/union-pacific-writes-down-brazos-yard-investment/

Figure 21: U.S. and CAMPO Region At-Grade Crossing Incidents Since 1975



Source: Federal Railroad Administration, Highway/Rail Grade Crossing Incidents, railroads.dot.gov

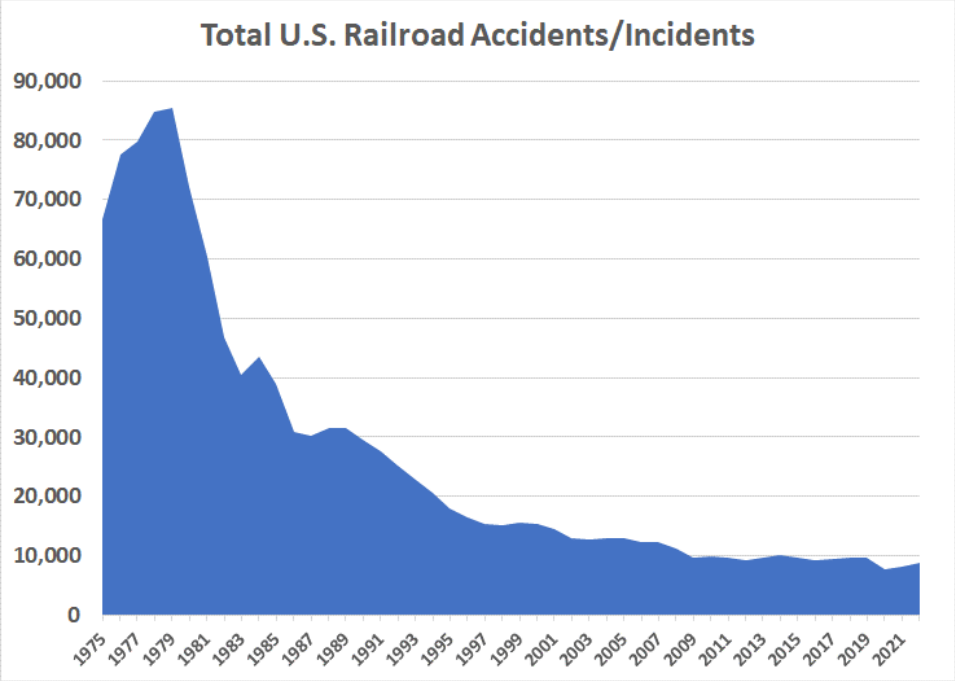
The U.S. Department of Transportation has recently encouraged investment in highway-rail safety projects through its requirement that states update their Grade Crossing Action Plans,[33] provision of dedicated funding to address at-grade crossings (Section 130),[34] and discretionary funding from the Railroad Crossing Elimination Grant Program authorized by the IIJA. TxDOT funding for these projects can be programed through its Railroad Grade Separation Program which dedicates $25 million per year.[35]

Rail System Safety

Safety trends within the rail system follow a similar pattern as at-grade crossing incidents. The total number of incidents on U.S. railroads peaked in 1979 and dropped significantly throughout the 1980s and 1990s (Figure 22). Over the past 20 years, approximately 10,000 railroad incidents were reported in each year.

[33] Federal Rail Administration. https://railroads.dot.gov/sap
[34] Texas Rail Plan, Section 2.1.5. https://ftp.dot.state.tx.us/pub/txdot-info/rail/texas-rail-plan-chapters.pdf
[35] TxDOT. http://onlinemanuals.txdot.gov/TxDOTOnlineManuals/TxDOTManuals/rho/railroad_grade_separation_program_rgs.htm

Figure 22: Total U.S. Rail Accidents and Incidents Since 1975



Source: Federal Railroad Administration, Accident / Incident Overview, railroads.dot.gov

Though rail incidents have generally remained at historic lows, safety improvements remain a priority for governments and railroads. A central focus of railroad safety in recent years is Positive Train Control (PTC). PTC prevents train-to-train collisions, speeding, and unauthorized train movement. The federal government required implementation of PTC by the end of 2020 following a 2009 collision between a freight train and passenger train in California.[36] The Federal Railroad Administration (FRA) reported full implementation of PTC prior to the deadline.[37]

Notably, implementation required technology that is interoperable across all railroads, laying the groundwork for future use of the communication infrastructure put in place for PTC. For example, the advancement of mobile technology, smart vehicles, and the implementation of PTC by railroads could provide in-vehicle warnings of oncoming trains. [38,39]

Derailments have been another on-going safety focus within the rail industry. On February 3, 2023, a Norfolk Southern train carrying 150 cars derailed near East Palestine, Ohio, a town just west of the Pennsylvania border with a population of 4,800. Five of the derailed cars were carrying the hazardous material vinyl chloride, a cancer-causing substance that is a key ingredient to hard plastic resins used in construction and health care. Officials ordered a 2-mile

[36] Association of American Railroads
[37] FRA, https://railroads.dot.gov/research-development/program-areas/train-control/ptc/positive-train-control-ptc
[38] https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/2784/Highway-Rail%20Intersection%20ITS%20GPS%20Based%20In-Vehicle%20Warning%20Systems_20121231_FINAL.pdf
[39] https://railroads.dot.gov/sites/fra.dot.gov/files/2022-02/RCVW%20Phase%20II%20Project%20Report.pdf

radius evacuation, and in consultation with Norfolk Southern, released the contents of one car into a trench where it was burned off, releasing a plume of toxic smoke (Figure 23). The Ohio Department of Natural Resources estimated that the release caused the death of 3,500 fish,[40] and as of August 2023 Norfolk Southern estimates the total cost from the derailment to have exceeded $800 million.[41] This event illustrates the importance of transportation safety and cascading impacts of freight incidents to surrounding land uses. Several bills were proposed in the 2023-2024 U.S. Congress to address railroad safety following the event, though none have become law as of February 2024.[42] If a new rail safety bill is passed, railroads and their public agency partners may have additional requirements resulting in new safety projects.

Figure 23: Norfolk Southern East Palestine, Ohio, Derailment in February 2023

Source: The Morning Journal. www.morningjournal.com

Fuel Sources and Carbon Emissions

Like the transportation industry at large, the U.S. rail industry is advancing vehicles powered by alternative fuels and implementing strategies to lower fuel consumption and emissions. One application involved integrating battery-electric locomotives with traditional diesel-fueled

[40] The Columbus Dispatch, Thousands of fish found dead days after Ohio train derailment, toxic spill in East Palestine, 2023. https://www.dispatch.com/story/news/environment/2023/02/14/thousands-of-fish-found-dead-after-train-derailment-in-east-palestine/69902454007/

[41] CNBC, Norfolk Southern CEO on Ohio derailment: 'We're making promises, and we're keeping promises', 2023. https://www.cnbc.com/2023/08/15/norfolk-southern-ceo-on-ohio-derailment.html

[42] Bills proposed in 2023-2024 Congress include: (1) Railway Safety Act (S.576), (2) Assistance for Local Heroes During train Crises Act (S.844), (3) Railway Accountability Act (S.1044), (4) Decreasing Emergency Railroad Accident Instances Locally (DERAIL) Act (H.R. 1238), (5) Reducing Accidents in Locomotives Act (H.R. 1633), and (6) Railway Safety Act of 2023 (H.R. 1674).

locomotives to reduce emissions while providing the necessary power for a freight train.[43,44] Freight rail manufacturers are also offering locomotives that can run on alternative fuels such as liquified natural gas and compressed natural gas. Manufacturers are producing conversion kits for existing locomotives, locomotives that rely on natural gas, as well as dynamic gas blending and injection capabilities that significantly reduce diesel usage.[45] [46] Hydrogen fuel-cell locomotives are also being tested in the rail industry.[47] As CAMPO and its partners advance infrastructure for alternative fuels for roadway transportation, adoption and demand from the rail industry should be considered in system capacity planning.

Figure 24: Wabtec FLXdrive Battery-Electric Locomotive

Source: Wabtec

Air Cargo Industry Trends and Developments

There have been a number of structural changes that have occurred in the air cargo industry over the past several years, most notably e-commerce growth and advancement of drone testing and use. These trends most directly impact how freight moves and are the focus of this section. Additionally, the industry must be responsive to security regulations, customer requirements and preferences, and an increased focus on emissions and sustainability from the public and policymakers.

e-Commerce

E-commerce, in particular, is resulting in significant changes to supply chain management and movement of commodities by air. The dominance of e-commerce platforms has accelerated the need for speed and flexibility, including in international cargo flows. This situation is leading to more decentralized trade flows that require superior tracking, logistics, and warehouse design.

[43] Wabtec. 2022. https://www.wabteccorp.com/newsroom/press-releases/union-pacific-railroad-makes-largest-investment-in-wabtec-s-flxdrive-battery-electric-locomotive
[44] Progress Rail. 2022. https://www.railfreight.com/technology/2022/02/07/union-pacific-to-have-largest-electric-locomotive-fleet-in-the-world/
[45] Progress Rail. 2023. https://www.progressrail.com/en/Segments/Engines/Natural_Gas_Solutions.html
[46] International Railway Journal. 2017. https://www.railjournal.com/regions/north-america/florida-east-coast-railway-converts-locomotive-fleet-to-lng/
[47] Trains. 2023. https://www.trains.com/trn/news-reviews/news-wire/can-cpkcs-hydrogen-fuel-cell-locomotives-doom-the-diesel/

Aviation is well suited to absorb much of this demand due to its speed and reliability across long distances, especially when compared to marine transportation for transcontinental shipments. Related air-cargo trends include the following:

- Development of products and services that provide end-to-end solutions with specialized handling and full tracking and tracing, on a retail basis.
- Changing customer expectations about delivery speed, reliability, and transparency.
- The growth of the freight integrators such as FedEx and DHL who can provide end-to-end, express delivery service.
- Retail internet platform providers' owner-controlled logistics networks such as Amazon, Walmart, and Target.
- The growth of very large freight forwarders that want to control their own airlift capacity.

As shown earlier in Figure 12, e-Commerce grew at an accelerated pace during the COVID-19 pandemic and has maintained nearly 15 percent of the retail market.

International e-commerce is causing significant changes to the movement of commodities throughout the supply chain. In order to accommodate these requirements, airports need a simplified clearance process for shipments, larger on-apron facilities to accommodate air cargo transfers, and specialized facilities to handle temperature controlled, hazardous, and bonded goods. They also need better connectivity to off-airport support facilities. Austin Bergstrom International Airport (AUS) has undertaken a $33 million cargo expansion to include flexible cargo space, trailer staging, and employee parking. As the airport increases its airside cargo capacity and on-site cargo-handling capabilities, CAMPO can facilitate growth by monitoring and planning for roadside capacity and efficiency accessing the airport.

Drones and Unmanned Aerial Vehicles (UAVs)

A delivery drone is a type of UAV used for distributing packages to consumers during the last-mile delivery process. Drone delivery is an intermodal technology likely to expand in the next five years. Offering a wide range of benefits, the major focus is on increased connectivity and reliability. As e-commerce direct-to-customer shipping grows, this intermodal technology allows for more efficient goods movement to the final consumer, especially in urban areas. Drone delivery also has applications in remote, less densely populated rural areas where customers are dispersed and the cost to deliver is high. Drones are likely to fill a niche in inspection roles, in local delivery of certain goods such as pharmaceuticals and other medical supplies, or in delivery to remote areas with few roads.

Most drones are fully autonomous and can take off and land vertically, making their use in dense urban areas practical. Their main infrastructure requirement is enough space to take off and land safely, resulting in the use of building rooftops as a common staging area for delivery drones. Their delivery range and load can vary based on battery capacity and other limitations. Delivery range can be up to 300 miles and maximum loads range from 300 to 500 pounds. However, most drones carry packages that weigh under 5 pounds.

Regulation

One of the main barriers to accelerated adoption of drones for last-mile delivery is compliance with various regulations and standards that govern the use of airspace, privacy, security, and noise, and these regulations continue to evolve as use cases and the regulatory environment

mature. For example, night operation under certain conditions were permitted in April 2021.[48] These changes to the FAA's Small Unmanned Aircraft Systems (UAS) Rule, Part 107 also allowed for drones under 0.55 pounds to fly over people and moving vehicles. While this weight requirement is prohibitive for freight applications, the changes can allow for remote traffic monitoring and surveying to enhance traffic information. For flight operations over vehicles, restrictions include either:

- The UAV must remain within a closed or restricted-access site, and all individuals inside any moving vehicle within the designated area must be on notice of the operation; or
- The UAV does not maintain sustained flight over moving vehicles.

Additional guidance is given by the State of Texas's Government Code, Chapter 423 which details what is permissible (423.002) and what is considered an offense (423.003, 423.004, 423.0045, 423.0046). This includes restrictions on use near critical infrastructure facilities such as ports, petroleum refineries, steelmaking facilities, among other contexts.[49] Drones also have to avoid collisions with other drones, birds, or buildings and ensure safe landing and delivery of goods.

Testing

UAV use cases are being tested and validated, including hub-to-hub, hub-to-van, rooftop deliveries, and direct-to-customer applications. The FAA is authorizing expanded testing conditions, beyond what is currently permitted by law, on a case-by-case basis to facilitate the safe evolution of UAS use. For example, in August 2023, the FAA authorized three companies (Phoenix Air Unmanned, UPS Flight Forward, and uAvionix) to operate drones beyond visual line of sight (BVLOS).[50]

Texas is home to many test programs for UAS. Texas A&M University in Corpus Christi has been one of seven test sites for the FAA since 2014. The objective of this testing is to provide verification of the safety of the public, operations, and related navigational procedures before drones are integrated into the National Airspace System (NAS).[51] In 2022, Walgreens launched its first drone delivery in a major U.S. market in suburbs north of Dallas.[52] The service is being offered in partnership with Alphabet's Wing drone which can carry three pounds and is flown autonomously but monitored by pilots.[53] In October 2023, Amazon announced the expansion of Prime Air, its drone delivery program, to include College Station, Texas, in addition to its existing

[48] Code of Federal Regulations. Title 14, Chapter I, Subchapter F, Part 107—Small Unmanned Aircraft Systems. https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-107.
[49] State of Texas's Government Code, Chapter 423. https://statutes.capitol.texas.gov/Docs/GV/htm/GV.423.htm.
[50] FAA. 2023. https://www.faa.gov/newsroom/faa-authorizes-ups-uavionix
[51] Federal Aviation Administration. UAS Test Site Program. https://www.faa.gov/uas/programs_partnerships/test_sites/.
[52] Walgreens. 2022. https://news.walgreens.com/our-stories/walgreens-and-wing-launch-drone-delivery-in-first-major-us-metropolitan-area.htm
[53] *Alphabet's Wing project unveils new drone delivery model in Texas.* Reuters. October 20, 2021. https://www.reuters.com/technology/alphabets-wing-project-will-unveil-new-drone-delivery-model-texas-2021-10-20/.

service in Lockeford, California.[54] Prime Air offers delivery of thousands of products under five pounds as well as pharmaceutical delivery.

Figure 25: *Delivery Drone Taking Off from Rooftop*

Source: ZF

Conclusion and Next Steps

This memorandum described the current drivers of freight generation, commodity flows and forecasts, land use and development patterns, and freight trends impacting the CAMPO region. The Capital Area has experienced rapid population growth alongside increased industrial investment, resulting in new freight demands on the transportation system. CAMPO can expect freight volumes on the highway, rail, and air systems to continue to increase. However, evolving transportation and infrastructure technology, shipping patterns and market demands present many opportunities to shape the future of goods movement in Central Texas.

The findings of this memorandum, as summarized in the introduction and detailed throughout, provide essential context behind the trends and developments transforming supply chain operations, logistics, and last-mile delivery. Many of these trends are driven by the private sector and fall outside CAMPO's direct purview. Nonetheless, they significantly influence how businesses, industries, and households in the region are served by freight logistics. Developments such as the use of drones and advanced delivery vehicle technologies, some which are operating in public rights-of-way, highlight the need for enhanced coordination between the public and private sectors. This coordination is vital to ensure that there are appropriate policies, regulations, and supporting infrastructure to safely accommodate these new operators.

This can be achieved through regular dialogue with the private sector, including outreach to freight industries and the technology sector. Opportunities for pilot demonstrations and working group discussions could foster collaboration and innovation. While these findings do not directly inform the recommendations of the final Regional Freight Plan, they offer a critical framework for understanding the dynamic landscape of freight movement. This understanding is imperative for developing a plan that is both responsive to current trends and adaptable to future changes in the freight industry.

[54] KXAN. 2023. https://www.kxan.com/news/texas/amazon-expands-drone-delivery-service-in-college-station-reveals-new-plans/

CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Trends and Forecasts Report

Appendix A: Future Land Use Assessment

Final 1: March 6, 2024

Table of Contents

Acronyms

CAMPO – Capital Area Metropolitan Planning Organization

EDA – Economic Development Administration

EDC – Economic Development Corporation

ETJ – Extra-Territorial Jurisdiction

GSMP – Greater San Marcos Greater Partnership

IH – Interstate Highway

LEDC – Lockhart Economic Development Corporation

SH – State Highway

SMART - San Marcos Air, Rail, and Transportation Terminal

THFN - Texas Highway Freight Network

TIF - Tax Increment Financing

US – United States Highway

Summary Overview

Numerous cities have future land use policies and vacant land available to welcome freight-intensive uses, as well as economic development policies supporting them. Vacant land with future industrial land use will be critical for freight growth areas located near major highways. Additional factors to consider are land values and environmental constraints.

The analysis of freight development and land use trends has identified cities to the north and east of Austin with direct access to the multimodal freight network and meeting the criteria for freight intensive users. These cities have the greatest potential as freight growth areas and will benefit from regional manufacturing and distribution development projects. They include:

- Bastrop (Industrial Park only)
- Marble Falls
- Caldwell County (Luling and Lockhart)
- Hays County (Buda, Kyle, and San Marcos)
- Austin (North Burnet/Gateway area; Metric and Highway 183)
- Williamson County (Pflugerville, Round Rock, Taylor, and Cedar Park)

Austin-Bergstrom International Airport and the IH 35 corridor are integral to the movement of freight for the cities above, along with other modes of transportation that are part of the Texas Highway Freight Network. Manufacturers and distributors will find these cities well-suited to their needs.

However, the roadway networks may not be currently designed to handle frequent truck traffic and oversized/overweight loads. Therefore, considerations for integrating freight-intensive land uses with the multimodal freight network are necessary, such as access management, rural highway safety, bridge and pavement asset management, and connectivity with the Texas Highway Freight Network (THFN).

County/City Analysis

In the CAMPO region, the cities have local control over land use policies and zoning, which influences the development and siting of industrial uses and freight generators. The following subsections are organized by county and focus on cities with land use policies and economic development priorities supporting freight-intensive users. Information on planned major projects is included where available. Numerous CAMPO municipalities are currently undergoing comprehensive plan updates to address growth and infrastructure needs.

Bastrop County

- 888 square miles (land only)
- Cities: Bastrop (county seat), Mustang Ridge, Elgin, Smithville
- Major highways: US 290, SH 21, SH 71, SH 95, SH 304

Bastrop

Comprehensive Plan Land Use Policies

Bastrop's comprehensive plan indicates that of the 3,500 acres of vacant land within the Bastrop municipal limits, approximately 1,500 acres are zoned for office, general retail, commercial, and industrial uses.[1] The plan lists several parameters related to industrial development, both within and outside the city limits. Several are specific to industrial land use and intended to minimize impacts to adjacent properties:[2]

- Industrial land uses should be located on and take vehicular access from arterial roads, or from industrial streets which lead directly to arterial streets.
- Heavy manufacturing or similar uses should not be located adjacent to existing residential land uses, areas targeted for residential use, or sensitive environmental areas, in addition to other performance measures contained in the Bastrop Code of Ordinances.
- In development involving loading docks and bays, arrange loading areas so they do not face the front property line or public right-of-way.

Furthermore, the plan envisions that industrial growth will remain centered in and around the current Bastrop Industrial Park.[3] The plan also notes that there is a lack of industrial street standards in Bastrop, which include sturdier road bases and surfacing, as well as greater dimensional standards for large vehicles, and that the Subdivision Code should be amended to incorporate industrial street standards.[4]

Economic Development Priorities

The Bastrop Economic Development Corporation (EDC) commissioned a study in 2010 to guide the creation of an economic development strategy for the community. The study, "Elevating Bastrop: An Economic Development Action Plan to Attract Talent and Investment," listed transportation and warehousing as one of six industry sectors with state and national growth.[5]

The plan suggests that businesses planning to expand or relocate within Bastrop Business and Industrial Park may be eligible for reduced property purchases, or even free land. The program is based on the amount of capital investment and the number of primary jobs created. The

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[1] City of Bastrop, "Bastrop Comprehensive Plan (2016-2026) Chapter 5 Land Use & Community Image" (pp. 5-3). (2016). Accessed from: https://www.zotero.org/foresightcitations/trash/items/U3PTIL5S/item-list
https://www.cityofbastrop.org/upload/page/0267/docs/Chap%205%20Land%20Use_Community%20Image.pdf
[2] Ibid pp. 5-30
[3] Ibid pp. 5-31
[4] Ibid pp. 5-43
[5] Golden Shovel Agency "Elevating Bastrop: An Economic Development Action Plan to Attract Talent and Investment" (p. 16) (2020). Accessed from: https://www.bastropedc.org/about/strategic-plan/p/item/11143/strategic-plan

business may receive a portion of the purchase price after a certain time, based upon reaching certain milestones. In addition, a project may also qualify for a Texas Department of Agriculture Capital Fund grant for up to $750,000 in infrastructure improvements.[6] The website notes that the city could apply for this grant on behalf of the project.

In addition, the City of Bastrop may provide tax abatements on value added to the real property or new business property to encourage business investment and/or expansion in the city, subject to city council approval.[7]

Major Planned Projects

In 2021, The Boring Company purchased 73 acres in Bastrop County to build an 80,000-square-foot warehouse and manufacturing facility at 130 Walker Watson Road north of the SH 71 and SH 21 westbound split.[8] Bastrop County Commissioner's Court tabled the conditional use permit in February 2022. As of July 2023, it is unknown if the project has been approved.

Burnet County

- 994 square miles (land only)
- Cities: Bertram, Burnet (county seat), Cottonwood Shores, Double Horn, Granite Shoals, Highland Haven, Horseshoe Bay (mostly in Llano County), Marble Falls, and Meadowlakes
- Major highways: US 183, US 281, SH 29

Burnet

Comprehensive Plan Land Use Policies

In December 2021, the Burnet City Council hired Freese & Nichols to update their comprehensive plan. As of July 2023, the status of the plan is pending, and future land use policies are currently not available.[9]

The EDC's website indicates the highest zoning category available within the city limits is commercial.[10] Permitted uses in that category include cafés, restaurants, taverns, food sales, food and beverage sales, convenience stores, hotels, banks, offices, service shops, and shopping

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[6] Ibid
[7] Bastrop Economic Development Corporation. "Bastrop, Tx Incentives." Accessed from: https://www.bastropedc.org/business/incentives/.
[8] Ashbrook, Maeve "Elon Musk's The Boring Company purchases land in Bastrop outside Austin" KVUE News. July 9, 2021. Accessed from: https://www.kvue.com/article/money/economy/boomtown-2040/elon-musk-the-boring-company-purchases-land-bastrop/269-1d1490d8-2595-4939-b914-289bcda43d2b
[9] Cooley, Brigid. "Burnet Council Approves Contract for City Comprehensive Plan." DailyTrib.Com (blog), December 16, 2021. Accessed from: https://www.dailytrib.com/2021/12/16/burnet-council-approves-contract-for-city-comprehensive-plan/.
[10] Burnet Economic Development Corporation. "Available Properties | Burnet Texas." Accessed from: https://www.burnetedc.com/ed/properties.

centers. Therefore, it is not likely for freight-intensive industries to pursue locating in Burnet without a zone change request.

Economic Development Priorities

The Burnet Economic Development Corporation notes that the city and county offer various incentives for qualifying businesses.[11] Some of these include:

- Tax abatements
- Utility incentives
- Reinvestment Zones
- Electric Utility Incentives
- Freeport Tax Exemptions

Marble Falls

Comprehensive Plan Land Use Policies

Marble Falls is currently updating their comprehensive plan, which may result in an increase or decrease of land designated for industrial use. The plan will address physical development, redevelopment, and the future direction of growth within the Marble Falls planning area.[12] Future land use policies are currently not available. The plan is expected to be complete in the fall of 2023.

Economic Development Priorities

The Marble Falls EDC has identified target industries.[13] They include freight-intensive uses, such as:

- E-ship and technical services
- Specialty Distribution
- Light Manufacturing
- Sustainable agriculture and ranching

Furthermore, the EDC completed a strategic plan process with an update in 2013.[14] Several of the goals support industrial-type development, such as:

- Develop a strong, goal-oriented business attraction program.
- Support the success of existing businesses.
- Strategically develop and recruit at the business park.

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[11] Burnet Economic Development Corporation. "Economic Incentives | Burnet Texas." Accessed from: https://www.burnetedc.com/ed/page/economic-incentives.
[12] Marble Falls Comprehensive Plan Update. May 2023. Accessed from: https://storymaps.arcgis.com/stories/34f6b1eb930b46578e0694eadd68af42
[13] Marble Falls Economic Development Corporation. "Marble Falls Target Industry Analysis | Marble Falls EDC," June 24, 2017. Accessed from: https://www.marblefallseconomy.com/target-industry-analysis/.
[14] Marble Falls Economic Development Corporation. "Marble Falls 2012-2013 Strategic Plan | Marble Falls EDC," April 25, 2017.Accessed from: https://www.marblefallseconomy.com/2012-2013-strategic-plan/.

- Create a competitive incentive program.

They also offer several grants supporting businesses, such as the business improvement grant program, a sign replacement grant, and a community leverage grant.[15]

Major Planned Projects

There are several planned business and industrial parks available for new businesses and industries in Marble Falls. The EDC's website says "manufacturing, distribution, regional service companies, regional corporate headquarters, and professional service firms will find a wide range of existing buildings and property for sale" and their locations.[16]

Caldwell County

- 545 square miles (land only)
- Cities: Lockhart (county seat), Niederwald, Martindale, Luling, San Marcos (mainly in Hays County)
- Major highways: IH-10, US 90, US 183, SH 80, SH 130

Caldwell County

Economic Development Priorities

Both Luling and Lockhart are well-positioned for future freight industry growth due to land use policies and economic development priorities, as well as a few environmental constraints.

The county's EDC boasts its prime location in the heart of the Texas Innovation Corridor, with quick and easy access to Austin and San Antonio as well as access to SH 130, which connects to IH 10 and Houston.[17]

The website also notes that Caldwell County is the site of the country's first and largest Job Corps program, Gary Job Corps, located adjacent to the San Marcos Regional Airport. The program provides free career training and on-the-job experience to low-income young adults, so they are ready for the workforce.[18]

Lockhart

Comprehensive Plan Land Use Policies

Lockhart's comprehensive plan lists a land use goal to "establish adequate acreage for industrial parks to facilitate expanded employment opportunities and enhance the community's tax

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[15]Marble Falls Economic Development Corporation. "Available Business Programs Offered by the Marble Falls EDC. | Marble Falls EDC," April 25, 2017. Accessed from: https://www.marblefallseconomy.com/available-programs-0/.
[16] Marble Falls Economic Development Corporation. "Marble Falls Business Industrial Parks | Marble Falls EDC," April 25, 2017. Accessed from: https://www.marblefallseconomy.com/business-industrial-parks/.
[17] Caldwell County Texas. "Caldwell County, Texas." Accessed July 14, 2023. Accessed from: https://www.co.caldwell.tx.us/page/caldwell.Economic%20Development.
[18]Gary Jobs Corps "Job Corps | Gary." Accessed July 14, 2023. http://gary.jobcorps.gov/.

base."[19] The goal validates Lockhart's plan to bring industrial users to their community.

The comprehensive plan also references numerous policy considerations related to the placement of industrial land uses and incompatible uses. These include:

- The compatibility of existing uses should be maintained with consideration given to the long-term transition of land use and opportunities for redevelopment.
- There should be sufficient buffering between incompatible land uses to minimize harmful effects on the value and enjoyment of land.
- Transportation access and circulation should be provided for uses that generate large numbers of trips.
- Land use decisions should be made to ensure adequate transportation facilities are existing or planned to support access and circulation needs.

Major Planned Projects

The Walton International Group has several master plans in Caldwell County, mostly with residential and commercial opportunities. However, the I-Zone Texas project in San Marcos has 1,744 acres in the Cotton Center Master Plan available for commercial and industrial uses. The project is located immediately south of the San Marcos Regional Airport and the Gary Job Corps Center. The plan has potential freight growth with direct access to SH 80 and SH 142, which provide direct access to IH 35 and the SH 130 Tollway.

Economic Development Priorities

The Lockhart Economic Development Corporation (LEDC) is seeking businesses to locate in Lockhart, as well as to retain and grow existing businesses.[20] The corporation assists in finding resources to help growing businesses, such as locating a larger building or land, financial incentives or assistance, or helping to train employees.

The LEDC targets several industries, such as auto parts, metal, and electronic manufacturing, food and beverage processing, logistics and distribution, pharmaceutical and medical supplies, and medical device manufacturing.[21]

In the report, "A Competitive Realities Report and Target Industry Strategy for Lockhart, Texas," Garner Economics, LLC advises Lockhart to be more proactive in building the assets and

[19] City of Lockhart. "Lockhart 2020 Comprehensive Plan." (p.3) Accessed from: https://www.lockhart-tx.org/page/open/1554/0/2020%20Comprehensive%20Plan.
[20] City of Lockhart Economic Development. "Retention & Expansion." Accessed from: https://lockhartedc.com/business-growth/retention-and-expansion.
[21] City of Lockhart Economic Development. "Target Industries." Accessed from: https://lockhartedc.com/site-selectors/target-industries.

infrastructure needed to attract higher-quality targets and companies.[22] To be considered by targeted industries, Garner Economics advises Lockhart to seek resources to build and provide sites and buildings for interested industries.

The report also includes several recommendations for Lockhart to support the target industry strategy:[23]

- Develop an inventory of existing sites and buildings.
- Create a culture of "yes" within the City's permitting and regulatory processes.
- Develop and sustain a coordinated effort for workforce training.

Luling

As a small municipality of less than 6,000 residents, there is limited information available online on Luling's comprehensive plan and economic development priorities. However, the location is ripe for freight-intensive growth and the city is poised to attract manufacturing and other industrial users as highlighted in recent economic development announcements.

Major Planned Projects

Earlier in 2023, the X-Bow rocket motor manufacturing company announced it would build a $25 million facility in Luling. The new campus will be built on the land that previously served as the Caldwell County Carter Memorial Airport, which closed in 2022.[24]

In June 2023, the U.S. Department of Commerce's Economic Development Administration (EDA) awarded $1 million to Luling for business growth. The KVUE article quotes Governor Abbott saying, "This grant to help support growth in aerospace manufacturing and other important industries will bring hundreds of good-paying jobs to Texans and the City of Luling."[25] The article also explains the $1 million will be invested in Luling's industrial park to spur business growth and development in the region.

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[22] Garner Economics LLC. "A Competitive Realities Report and Target Industry Strategy for Lockhart, Texas." (p. 72) Lockhart Texas Economic Development Corporation. Accessed from https://lockhart.nyc3.digitaloceanspaces.com/downloads/Final-Garner-Report-for-printing.pdf.
[23] Ibid p. 69
[24] kvue.com. "X-Bow Systems Planning Rocket Motor Manufacturing Facility in Luling," February 12, 2023. Accessed from: https://www.kvue.com/article/money/economy/boomtown-2040/x-bow-systems-rocket-manufacturing-facility-luling/269-d09fcb31-ab46-45fe-8ff9-15010c599a84.
[25] kvue.com. "City of Luling Receives $1M Federal Grant to Support Business Growth," June 12, 2023. Accessed from: https://www.kvue.com/article/money/economy/boomtown-2040/luling-grant-manufacturing-business-growth/269-d36f0820-efca-4ef4-8560-0c714f0f5dd1.

Buda

Comprehensive Plan Land Use Policies

Buda is also undertaking a comprehensive plan update.[26] A draft future land use plan was released in June 2023 for public comment. The plan shows large tracts of industrial land use along the Union Pacific railroad, between FM 1626 and IH 35. Two land use categories are included in the plan that would allow freight-intensive uses. The interstate land use category would permit light industrial and manufacturing uses, but not fronting service roads; industrial users also require heavy buffering from residential areas.[27] The industrial land use category is in Buda's primary industrial area, southwest of town. It would be available for target industries and provide an opportunity to expand the tax base with large users, as well as small businesses in the local supply chain. This area includes "legacy industrial users," but is also available for new industrial development. The area offers advantageous access to major thoroughfares and IH 35.

Although the comprehensive plan is being updated, the current plan supports industrial uses.[28] The goal of the industrial employment district is to provide the needed services and facilities to enable major industrial activity in Buda while being sensitive to future land uses. Heavy industrial is the dominant use in this district. The industrial employment district was created for the mining industry, which contributes heavily to the local economy but is incompatible with many other uses. The industrial companies own much of the land in this district, so this activity is expected to continue well into the future. The proximity to IH 35 permits direct access for the heavy truck traffic generated by industrial activities.

However, much of this district is located over the Edwards Aquifer, which requires additional protection measures for natural features and water quality of this area. This may be limiting for potential freight-intensive businesses wanting to locate in this area.

Economic Development Priorities

The City of Buda's Incentive Policy identifies advanced manufacturing/industrial as a target industry and indicates additional incentives may be offered to industries interested in locating in Buda.[29] In addition, a task force is established to streamline the process of evaluating these projects through the city's development process.

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[26] Our Buda. "Our Buda | Downtown Plan, Corridor Study, Etc. for Buda, TX." Accessed from: https://ourbuda.com/.
[27] Our Buda. "Draft Future Land Use Categories," June 21, 2023. https://ourbuda.com/wp-content/uploads/2023/07/DRAFT_Land-Use-Categories.pdf.
[28] City of Buda. "Buda 20030 Comprehensive Plan - Future Land Development Plan For Buda." (pp. 199-200) Accessed from: https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/250539/E_Comprehensive_Plan_Future_Land_Development_Excerpt_including_Map.pdf
[29] City of Buda. "City of Buda Incentive Policy 2018." Accessed from: https://legistarweb-production.s3.amazonaws.com/uploads/attachment/pdf/1245992/Buda_Incentive_Policy_-_2018_1_.pdf

The Buda EDC and the city can provide incentives to businesses locating in or expanding in Buda. Advanced manufacturing and industrial businesses are desired.[30] Many local and state incentives are available to assist with business development.

Hays County

- 680 square miles (land only)
- Cities: San Marcos (county seat), Niederwald, Uhland, Buda, Dripping Springs, Hays, Kyle, Mountain City, Wimberley, Woodcreek
- Major highways: IH 35, US 290, SH 21, SH 80

Hays County is another area well suited for growth. Several cities along IH 35 have available land, industrial land uses, and supportive economic development policies. Hays County is also part of the Greater San Marcos Greater Partnership (GSMP), a nonprofit public-private partnership serving as the regional economic development organization for San Marcos, Hays, and Caldwell counties.[31] The GSMP promotes and markets on behalf of the region, drawing new companies and supporting expansion of existing companies.

Kyle

Comprehensive Plan Land Use Policies

Kyle is another city currently updating its comprehensive plan. They recently had an open house in May 2023 to gather community input on two growth scenarios. The consultant presented both scenarios to the City Council, and the plan adoption is expected in late 2023.[32]

Economic Development Priorities

The City of Kyle is willing to offer a range of incentives to attract businesses based on a variety of factors, such as capital investment, tax revenue potential, and job creation.[33] The Economic Development Corporation website lists many local incentives to enhance economic development and streamline the development process.[34] Some of these include:

- Chapter 380 Economic Development Agreements
- First year tax rebates up to $10,000
- Freeport tax exemptions
- Infrastructure Projects
- Public Improvement District

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[30] Buda TX Economic Development Corporation. "Incentives | Buda EDC." Accessed from: https://budaedc.com/incentives.
[31] Great San Marcus Partnership. "Our Services | Greater San Marcos Partnership." Accessed from: https://greatersanmarcostx.com/about/our-services.
[32] City of Kyle, Texas - Official Website. "Comprehensive Plan Open House." Accessed from: https://www.cityofkyle.com/communications/comprehensive-plan-open-house.
[33] City of Kyle Economic Development. "Incentives | Kyle, TX Economic Development." Accessed from: https://kyleed.com/choose-kyle/incentives.
[34] Ibid

- Tax abatement

Dripping Springs

Comprehensive Plan Land Use Policies

Due to its recent rapid growth, the City of Dripping Springs initiated a comprehensive plan update in April 2022. The city also placed a moratorium on development until September 2022.[35] The growth has impacted the city's infrastructure, including wastewater capacity. The comprehensive plan update will establish future land use priorities, as well as guide infrastructure investments and economic development.[36]

It is important to note that the current future land use map does not have an industrial land use category.[37] Therefore, it is unknown if there will be an opportunity for freight-intensive uses in the plan update. The public input process will continue through 2023.

Economic Development Priorities

Although Dripping Springs seeks business growth, it is concerned with sustainability. They have an economic development program created by the Economic Development Committee to develop and expand the local economy, and they are willing to provide incentives on a case-by-case basis.[38] The committee's mission is to facilitate business growth and attract clean and sustainable businesses to Dripping Springs while providing employment opportunities.

The Chapter 380 Economic Development Program promotes commercial and manufacturing businesses to locate, remain, and expand in Dripping Springs. The purpose of the Chapter 380 program is to expand the local economy by enhancing its economic development efforts to attract and retain high quality development and jobs.[39]

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[35] kvue.com. "City of Dripping Springs Extends Development Moratorium yet Again | Kvue.Com." February 16, 2022. Accessed from: https://www.kvue.com/article/money/economy/boomtown-2040/dripping-springs-extends-development-moratorium-until-may-kvue/269-d3ac1d61-5fc1-4b18-9481-aba3922021f2.

[36] City of Dripping Springs. "Dripping Springs Launches Comprehensive Plan Initiative | Dripping Springs, TX," April 18, 2022. https://www.cityofdrippingsprings.com/site-home/news/dripping-springs-launches-comprehensive-plan-initiative.

[37] City of Dripping Springs. "City of Dripping Springs Comprehensive Plan 2016," November 15, 2016. Accessed from: https://www.cityofdrippingsprings.com/sites/g/files/vyhlif6956/f/uploads/final_comprehensive_plan_11.15.16_1.pdf.

[38] Dripping Springs Chamber. "Economic Development." Accessed from: https://drippingspringstx.org/economic-development/.

[39] City of Dripping Springs. "CHAPTER 380 ECONOMIC DEVELOPMENT PROGRAM POLICIES & PROCEDURES," November 15, 2016. Accessed from: https://www.cityofdrippingsprings.com/sites/g/files/vyhlif6956/f/uploads/380_guidelines_adopted_10-16-07.pdf

San Marcos

Comprehensive Plan Land Use Policies

San Marcos is another city in the process of a comprehensive plan update. A draft was released in January 2023. The commercial/employment census category indicates light to heavy industrial and warehousing and distribution as primary land uses.[40] New commercial/employment areas should be focused on designated areas along or near highways. The land use is primarily distinguished by light to heavy industrial, warehouse and distribution, lower density office, and general commercial uses.

The draft plan includes several economic development goals supporting target industries, which include aerospace, aviation, security and defense, regional distribution, materials science, and life science. Specific economic development goals in the draft plan include:[41]

- ECD-3.1 Regularly assess and update target industries and collaborate with all educational
  institutions to support workforce development for specific industry needs.
- ECD-3.2 Leverage the Greater San Marcos Partnership "Texas Innovation Corridor" identity to attract investment and new employment opportunities.
- ECD-3.3 Plan for commercial land and employment centers consistent with the Preferred Scenario Map, including Class A office, industrial, and other uses to attract target industries.
- ECD-3.5 Develop partnerships to create transit connections between the community and major
  airports in nearby cities; and improve connections between the community and the San Marcos Regional Airport through enhanced transit, road, and utility infrastructure.

The city has a strong infrastructure network and a ready workforce to support business growth, so it does not offer financial incentives. However, it will consider incentives when filling gaps and when supporting business developments that would not locate in San Marcos or choose not to expand their operation.[42]

Major Planned Projects

Forty acres of land in the San Marcos Extra-Territorial Jurisdiction (ETJ) were annexed in 2022 and have freight-intensive growth potential.[43] It is on Posey Road between Transportation Way

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[40] Vision SMTX. "Revised Draft San Marcos Comprehensive Plan," (pp. 108-111) January 2023. Accessed from: https://www.visionsmtx.com/wp-content/uploads/2023/02/VisionSMTX_FinalDraft_02.16.23_.pdf.
[41] Ibid p.50
[42] City of San Marcos. "Incentives | City of San Marcos, TX." Accessed from: https://sanmarcostx.gov/3561/Incentives.
[43] Weilbacher, Eric. "San Marcos City Council approves annexation, rezoning for two industrial, heavy commercial areas," May 6, 2022. Community Impact Newspaper. Accessed from San Marcos City Council approves annexation

and IH 35. The zoning allows for a significant increase in commercial and industrial development on the fringes of San Marcos.

Hill Country Studios was set to begin construction in April 2023, and the expected completion is in August 2025.[44] The film production studio is located near Wonder World Drive and West Center Point Road in the La Cima development. The 820,000-square foot facility will include stages, workshops, offices, and support spaces. The project will include additional retail space for public use. It is expected that the development will support local businesses and industries.

The area of the newly constructed one million square foot Amazon Delivery Station on Fortuna Road in San Marcos has a large freight-growth potential due to its proximity to IH 35 and planned road improvements.

The Gas Lamp District Master Plan development by the Walton International Group in San Marcos has lots available for commercial and industrial uses. The master plan has direct access to Centerpoint Road and Old Bastrop Road, as well at IH 35.

The CAMPO Existing Conditions report included information on a pending annexation and zoning request for the SMART (San Marcos Air, Rail, and Transportation) Terminal. As of June 2023, the owner withdrew the annexation and zoning request for the Axis Logistics Park. The land was east of FM 110, between SH 80 and the Union Pacific railroad tracks. The site is east of the alignment for the new FM 110 loop.

Travis County

- 990 square miles (land only)
- Cities: Austin (county seat with small parts in Hays and Williamson Counties), Cedar Park (mainly in Williamson County), Elgin (mostly in Bastrop County), Leander (mainly in Williamson County), Mustang Ridge (small parts in Caldwell and Bastrop Counties), Pflugerville (small part in Williamson County), Round Rock (mainly in Williamson County), Bee Cave, Creedmoor, Jonestown, Lago Vista, Lakeway, Manor, Rollingwood, Sunset Valley, West Lake Hills
- Major highways: IH 35, US 183, US 290, SH 71, TX Loop 1 (MoPac Expressway), SH 45, SH 130

Austin

Austin is competing with numerous, adjacent smaller cities with available land, industrial zoning, access to the freight network, and very few environmental constraints. In addition, these cities are offering economic incentives to attract new industries. Most of Austin's future industrial land uses are on the city's eastern edge, near the airport. Without redevelopment efforts, zone

[44] https://storymaps.arcgis.com/stories/c7056df1cc3742a68e6e59fc26a83aea

changes, or the acquisition of new land, it is not likely for large scale industries to pursue locating in Austin.

Comprehensive Plan Land Use Policies

Austin's 2035 North Burnet/Gateway Master Plan is a redevelopment vision to transform the area from an "aging, auto-oriented commercial and industrial uses" into a mixed-use, pedestrian and transit-friendly neighborhood.[45] The plan's objective is to increase residential dwelling units, commercial space, hotels, and industrial warehouse and service center space. The plan targets increasing industrial warehouse and service center space to five to six million square feet over the next 25 to 30 years.

The plan recognizes trucking as the most utilized mode for freight transportation in the North Burnet/Gateway area. Most parcels in the southeast side of the study area are zoned industrial and include warehousing or distribution uses.[46] It is one of the largest distribution centers within the city, and most of the loading/unloading occurs in this area.

However, the plan proposes reducing the number of parcels with industrial zoning. There is a regional need to provide for industrial land uses and trucking activity, however, the desire is to concentrate industrial land uses in the southeast portion of the plan area, where there is convenient roadway access to MoPac and Highway 183.[47]

Economic Development Priorities

The Austin Area EDC has several objectives and priorities supporting development and increasing the tax base. The objectives and priorities in the Interlocal Agreement include 6.5(d) and (e) which directly encourage freight-intensive development:[48]

- 6.5(d) The proactive and innovative development and expansion of infrastructure, communities, public facilities, and other socially beneficial real estate projects.
- 6.5(e) Increasing the tax base within the City of Austin and generating revenues and other resources for the City through the promotion of job growth and business growth.

[45] City of Austin Texas "North Burnet Gateway 2035 Master Plan." November 2007. Accessed from: https://www.austintexas.gov/sites/default/files/files/Housing_%26_Planning/Adopted%20Neighborhood%20Planning%20Areas/19_NorthBurnetGateway/nbg-np.pdf
[46] Ibid pp.2-14
[47] Ibid pp.4-19
[48] City of Austin. "COA and AEDC Interlocal Agreement 20230308.Pdf," (p.8) June 10, 2021. https://drive.google.com/file/d/1CUHRohnqvvKtXT15hbSVIOSfxuOYauRV/view?usp=embed_facebook.

Major Planned Projects

The South Central Waterfront Project is a 118-acre redevelopment project with a vision of accessible economic and community benefits over the next 20 years.[49] The project may be an opportunity for freight-intensive users.

Williamson County

- 1,118 square miles (land only)
- Cities: Georgetown (county seat), Austin (mostly in Travis County and a small part in Hays County), Bartlett (partly in Bell County), Cedar Park (a small part in Travis County), Leander (small part in Travis County), Pflugerville (mostly in Travis County), Round Rock (small part in Travis County), Thorndale (mostly in Milam County), Coupland, Florence, Granger, Hutto, Jarrell, Leander, Liberty Hill, Taylor, Thrall, Weir
- Major highways: IH 35, US 79, US 183, SH 29, SH 45, SH 95, SH 130, TX Hwy Loop 1, SH 195, 183A Toll Road

Pflugerville

Comprehensive Plan Land Use Policies

Pflugerville's 2040 Comprehensive Plan was adopted in April 2022. The plan has reserved 180 acres for industrial future land use, reduced from 593 acres in the city's existing land use and 59 acres in ETJ.[50]

The plan's "Employment" future land use category applies to the industrial flex space opportunities along SH 45 and SH 130. Employment centers are primarily used for office, industrial, and flex space development. Industrial flex space development includes a range of manufacturing and storage uses with varying appearances and intensities.[51] The plan recommends industrial areas be located along arterial thoroughfares, in proximity to freeways, rail lines, and areas with access to airports and other transportation links.[52]

Pflugerville recognizes the importance of diversifying commercial and industrial businesses, and the plan has included an action item to support the Employment and Commercial Centers Goal and Policy Statement: 3.30.3, which is to "promote diversification of the commercial/industrial base."[53]

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[49]AEDC Austin Economic Development Corporation. "AEDC 2023 Annual Report 20230215.Pdf," (p.3) February 15, 2023. https://drive.google.com/file/d/12FXIQrGBh6Nk0UCyGv6SUS3M_yEAZi-m/view?usp=embed_facebook.

[50] City of Pflugerville. "Aspire Pflugerville 2040 Comprehensive Plan | Chapter 3: Land Use, Growth & Development." (p.66) Accessed from: https://www.pflugervilletx.gov/home/showpublisheddocument/9910/637866437201130000.

[51] Ibid p.82

[52] Ibid p.83

[53] Ibid p.101

Economic Development Priorities

Pflugerville offers incentives to attract businesses, including individual tax abatement. The Pflugerville Community Development Corporation offers incentives enticing businesses to locate there, which could be beneficial to freight-intensive uses. The website list includes:[54]

- Tax Abatement – individual basis
- Triple Freeport Exemption
- Chapter 380 financing
- Tax Increment Financing
- Eligible for Foreign Trade Zone
- Industrial foundation
- Public utility incentives
- Low property tax rates
- Workforce development and training grants
- Relocation assistance
- Low-cost land
- Tenant finish-out assistance
- EB-5 financing
- Low-cost reuse of water for irrigation or chilling

Major Planned Projects

Electronic Vision Systems Inc. (EVS) purchased 14.5 acres in the One Thirty Business Park at 15825 Impact Way. In August 2023, the New Jersey-based company will begin building a 175,000-square-foot warehouse and manufacturing facility.[55] EVS does welding, laser cutting, powder coating, and assembly for various industries, including aerospace and semiconductors.

Round Rock

Comprehensive Plan Land Use Policies

Round Rock's Future Land Use Map indicates industrial land use along IH 35.[56] The comprehensive plan has specific criteria regarding the location of industrial land uses:

- New industrial development shall not be permitted within 500 feet of single-family or two-family uses or within 500 feet of designated arterial roadways or future arterial roadways.
- Little or no visibility from public view, other than from the adjacent roadway.

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[54] Pflugerville Chamber of Commerce. "Economic Development - Pflugerville Chamber of Commerce, TX." Accessed from: https://www.pfchamber.com/economic-development.
[55] Pflugerville Chamber of Commerce. "Economic Development - Pflugerville Chamber of Commerce, TX." Accessed from: https://www.pfchamber.com/economic-development.
[56] City of Round Rock Texas. "ROUND ROCK 2030 – ROUND ROCK 2030," (pp.135-136). June 25, 2020. Accessed from: https://www.roundrocktexas.gov/wp-content/uploads/2020/09/Round-Rock-2030-Adopted-Web.pdf.

- No adjacent residential or commercial development.

The plan's criteria for the light industrial land use category include:

- Direct access to a collector street or arterial roadway
- No adjacent residential development

The Land Use Inventory table in the comprehensive plan indicates that, as of 2020, only two percent of the city's 663 acres reserved for industrial land uses have been developed.[57] Between 2000 and 2010, significant portions of land intended for industrial land use were developed instead for commercial and office uses.[58] If Round Rock continues the trend, there will be less industrial land available for freight-intensive uses.

Economic Development Priorities

Round Rock is also actively attracting businesses and willing to offer tax breaks. The Round Rock Economic Development Partnership website states that Round Rock avoids burdening industrial development with high taxes. Instead, they offer tax breaks, and they claim to have the lowest property taxes in the region.[59]

Furthermore, the partnership's website indicates they have the proper infrastructure to work with local industries and will develop the best package for a project. Round Rock can also offer various incentives case-by-case, which may include tax abatement, foreign trade zone, reinvestment zone, and Freeport exemptions.

The economic development section of the comprehensive plan has policies and implementation strategies that support new and existing freight-intensive businesses.[60] One strategy is to provide a navigable regulatory and development review process that is efficient, streamlined, and meets or exceeds established performance measures. Another is supporting zoning and annexation decisions that attract desirable employment centers and consider appropriate incentives. The city also prioritizes infrastructure projects associated with major employers. Lastly, economic development projects encounter an expedited development review process.

Major Planned Projects

Link Logistics has two industrial projects that will bring one million square feet of industrial space to Round Rock.[61] Settlers Grove, a 631,000-square-foot industrial and warehouse development,

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[57] Ibid p.111
[58] Ibid p.110
[59] Round Rock Texas. "Economic Development - City of Round Rock." Accessed from: https://www.roundrocktexas.gov/city-businesses/economic-development/.
[60] Round Rock 2030. "POLICIES AND IMPLEMENTATION – ROUND ROCK 2030." Accessed from: https://roundrock2030.com/policies-and-implementation/.
[61] Sjoberg, Brooke. "Industrial Projects in Round Rock to Bring Nearly 1M Square Feet of Industrial Space." Community Impact, January 20, 2023. Accessed from: https://communityimpact.com/austin/round-rock/development/2023/01/20/industrial-projects-in-round-rock-to-bring-nearly-1m-square-feet-of-industrial-space/.

was expected to be complete in June 2023. The other project, Round Rock 45, will have three Leadership in Energy and Environmental Design-certified structures. The project broke ground in October 2022 and the three structures will be sized at 139,000 square feet, 127,240 square feet, and 102,000 square feet.

Taylor

Comprehensive Plan Land Use Policies

The Envision Taylor Comprehensive Plan provides big ideas and policies to accommodate projected growth. The plan also has land uses that would permit freight-intensive uses. The Employment Centers land use is a mixed-use area centered around office or industrial uses that can support significant employment. There are 2,407 acres designated as Employment Centers in the future land use plan, of which 60% are designated as industrial. [62]

Samsung's location in Taylor led to the creation of the Special Employment District, which provides a location for large-scale employment that is associated with Samsung or other high-tech businesses in the region. The city prioritizes keeping these areas for industrial use. The total land use area for this district is 5,203 acres.[63]

During public and stakeholder meetings, it was discussed that reserving land around the rail line for manufacturing is an opportunity for transporting materials and supplies. It is beneficial for industrial uses to locate near rail lines.[64]

The city also created a new sector within the restricted growth sector called Controlled Growth Tier II. These areas are prime for future industrial development due to their proximity to major transportation infrastructure and potential expansions of the City's sewer system. The city can add areas to the Controlled Growth Sector where they want to encourage industrial growth.[65] The Controlled Growth Sector was expanded with the primary goal of providing more space to assist in the development of other industrial and manufacturing uses that can support the Samsung facility.[66]

Economic Development Priorities

The City of Taylor is attracting new businesses by offering incentive packages, tax abatements, and tax rebate opportunities. The city has also streamlined the plan review, permitting, and inspection processes, combined with a City Council willing to partner with developers.[67] They

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[62] City of Taylor Texas. "Envision Taylor Comprehensive Plan," (p.75) November 18, 2021. Accessed from: https://www.ci.taylor.tx.us/DocumentCenter/View/13206/Envision-Taylor-Comprehensive-Plan-Second-Amendment-Final?bidId=.
[63] Ibid p.81
[64] Ibid p.82
[65] Ibid p.85
[66] Ibid p.86
[67] City of Taylor Texas. "Economic Development | Taylor, TX - Official Website." Accessed from: https://www.ci.taylor.tx.us/644/Economic-Development.

offer many incentives to encourage businesses to locate in Taylor, which include cash grants, land grants, forgivable loans, property tax rebates and/or sales tax rebates, Tax Increment Financing (TIF) grants, and downtown rental assistance.

Major Planned Projects

Samsung is building a 6-million square-foot semiconductor manufacturing facility, and the plant is expected to be fully operational by the end of 2025. The plant will be located near US 79 and CR 401, on more than 1,000 acres of land.[68]

Cedar Park

Comprehensive Plan Land Use Policies

Planning areas are established in Cedar Park's future land use map to support unique developments. Industrial uses are permitted in several planning areas of the comprehensive plan. A portion of planning area "A" includes Lime Creek Quarry, which is approximately 350 acres in size.[69] RM 1431 and Lakeline Boulevard provide convenient access to Planning Area "A."

Planning area "C" is located along Brushy Creek Road between 183A and Parmer Lane and is approximately 100 acres. The area is near several schools; therefore, future development should be compatible and have minimal impacts, such as a corporate headquarters.[70]

The planning area "G" is mostly undeveloped and at the eastern edge of the city limits. It is approximately 105 acres and located south of E. Whitestone Boulevard, southeast of Toro Grande Boulevard.[71]

The city's heavy commercial land use designation is suitable for manufacturing, processing, assembling, packaging, and fabricating previously prepared materials, as well as warehousing. The comprehensive plan recognizes that it is difficult for the industrial business community to find large parcels of land with easy access to the freight network system. The city considers freight-intensive businesses a beneficial source of employment and an increased tax base.[72]

Economic Development Priorities

Cedar Park is home to a diverse mix of businesses, including regional or national headquarters, defense and aerospace, healthcare and biotechnology, software development, clean

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[68] Ortiz, Monica "Samsung development leaves residents questioning Taylor's infrastructure plans" December 12, 2021. Spectrum News 1. Accessed from: https://spectrumlocalnews.com/tx/south-texas-el-paso/news/2021/12/10/samsung-development-leaves-130--year-church-questioning-taylor-s-infrastructure-plans-

[69] Cedar Park Texas. "Comprehensive Plan City of Cedar Park, Texas," (p.23) March 10, 2022. Accessed from: https://www.cedarparktexas.gov/DocumentCenter/View/1848/Adopted-Comprehensive-Plan-PDF.

[70] Ibid p.25

[71] Ibid p.29

[72] Ibid p.18

technology, and advanced manufacturing. They offer incentives case-by-case. The Triple Freeport exemption is one of the incentives offered on property taxes on inventory for employers that manufacture or distribute goods shipped outside of Texas.

The city assists businesses with many free services to locate and/or expand in Cedar Park. The city's Economic Development Department works directly with regional partners such as the Governor's Office of Economic Development, the Cedar Park Chamber of Commerce, the Capital Certified Development Corporation, the Opportunity Austin program of the Austin Chamber of Commerce, the Pedernales Electric Cooperative, and the Texas Workforce Commission to assist with the needs of businesses.[73]

Major Planned Projects

Shop LC is relocating its headquarters from Austin to Cedar Park.[74] The home shopping network's headquarter office has an anticipated completion date in mid-2024. The 200,000-square-foot facility will be constructed near East New Hope Drive and North Bell Boulevard (US 183).

Another business set to open in Cedar Park is NFM, a home store previously known as Nebraska Furniture Mart.[75] It will build a 117-acre project located near the H-E-B Center. The NFM development will also include a 250-room hotel, a 30,000-square-foot convention center, and additional commercial space.

Indigo Ridge is a 155-acre mixed-use major project located a few miles to the east of Cedar Park's downtown, located at the intersection of Whitestone Boulevard and County Road 175.[76] The mixed-use development includes office, living, retail/dining, hotel, and recreational uses. The headquarters for the United States Tennis Association (USTA Texas) will also be housed at Indigo Ridge.

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[73] Cedar Park Texas Economic Development Corporation. "City of Cedar Park, Texas Economic Development Corporation." Accessed from: https://cedarparktexasedc.com/.
[74] kvue.com. "Shop LC to Move Headquarters from Austin to Cedar Park | Kvue.Com," November 19, 2021. Accessed from: https://www.kvue.com/article/money/economy/boomtown-2040/shop-lc-moving-headquarters-austin-to-cedar-park/269-acf37e4a-2ad0-46be-8f9a-e4aaed2eb780.
[75] Washington, Zacharia. "8 Large Projects Underway as Cedar Park, Leander Prioritize Commercial Development." Community Impact, January 14, 2023. Accessed from https://communityimpact.com/austin/cedar-park-leander/development/2023/01/14/8-large-projects-underway-as-cedar-park-leander-prioritize-commercial-development/.
[76] Indigo Ridge. "Indigo Ridge – Mixed-Use Development in Cedar Park, Texas." Accessed from: https://www.indigoridgeatx.com/.

Georgetown

Comprehensive Plan Land Use Policies

Georgetown recently updated its comprehensive plan, and several land use policies encourage and protect industrial uses while buffering from non-compatible uses.[77]

- Land Use Policy 1 calls for placement of more intense uses where services and transportation networks are more established. It is expected that more intense uses will generate more traffic.
- Land Use Policy 4 encourages redevelopment, which is described as the clearing of land and construction of new buildings and/or the conversion of existing buildings to a different use. The city encourages redevelopment in target areas through small area planning, intentional infrastructure investment, and/or specialized development standards. Identified target areas include Williams Drive, South and North Austin Avenue, and Downtown.
- Land Use Policy 8 is to protect and promote land uses that support Georgetown's target industries, support diversification of the City's tax base, and enhance economic development through intentional infrastructure planning, recruitment, and the land use entitlement process. Georgetown's target industries include advanced manufacturing, life sciences, and professional services.

Economic Development Priorities

Georgetown wants to keep existing businesses and attract new ones, particularly in the identified industries of advanced manufacturing, life sciences, professional development, and destination retail. Georgetown's Economic Development Strategic Plan has identified several goals and priorities related to supporting businesses and attracting industries.[78]

- Strategic Goal 1: Support existing businesses and industries.
- Strategic Goal 2: Enhance targeted recruitment of identified industries.
- Strategic Goal 4: Encourage speculative development.

Major Planned Projects

Georgetown Logistics Park is a new industrial park with 625,000 square feet of industrial space development for larger tenant warehouse space driven by e-commerce, last-mile delivery, and manufacturing tenants.[79] The development is at the southwest corner of IH 35 and Tx Hwy 130

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[77] Georgetown 2030 Plan Update. "Land Use." Accessed from: https://2030-comprehensive-plan-georgetowntx.hub.arcgis.com/pages/land-use.
[78] City of Georgetown. "Economic Development Strategic Plan – Georgetown Economic Development." Accessed from: https://invest.georgetown.org/economic-development-strategic-plan/.
[79] Widner, Cindy. "Stonelake breaks ground on massive Georgetown logistics park," August 1, 2022. Urbanize Austin. Accessed from: https://austin.urbanize.city/post/austin-suburb-georgetown-industrial-park

along Aviation Drive, just east of Georgetown Municipal Airport. It is suited to larger warehousing, distribution, and manufacturing tenants in the greater Central Texas region.

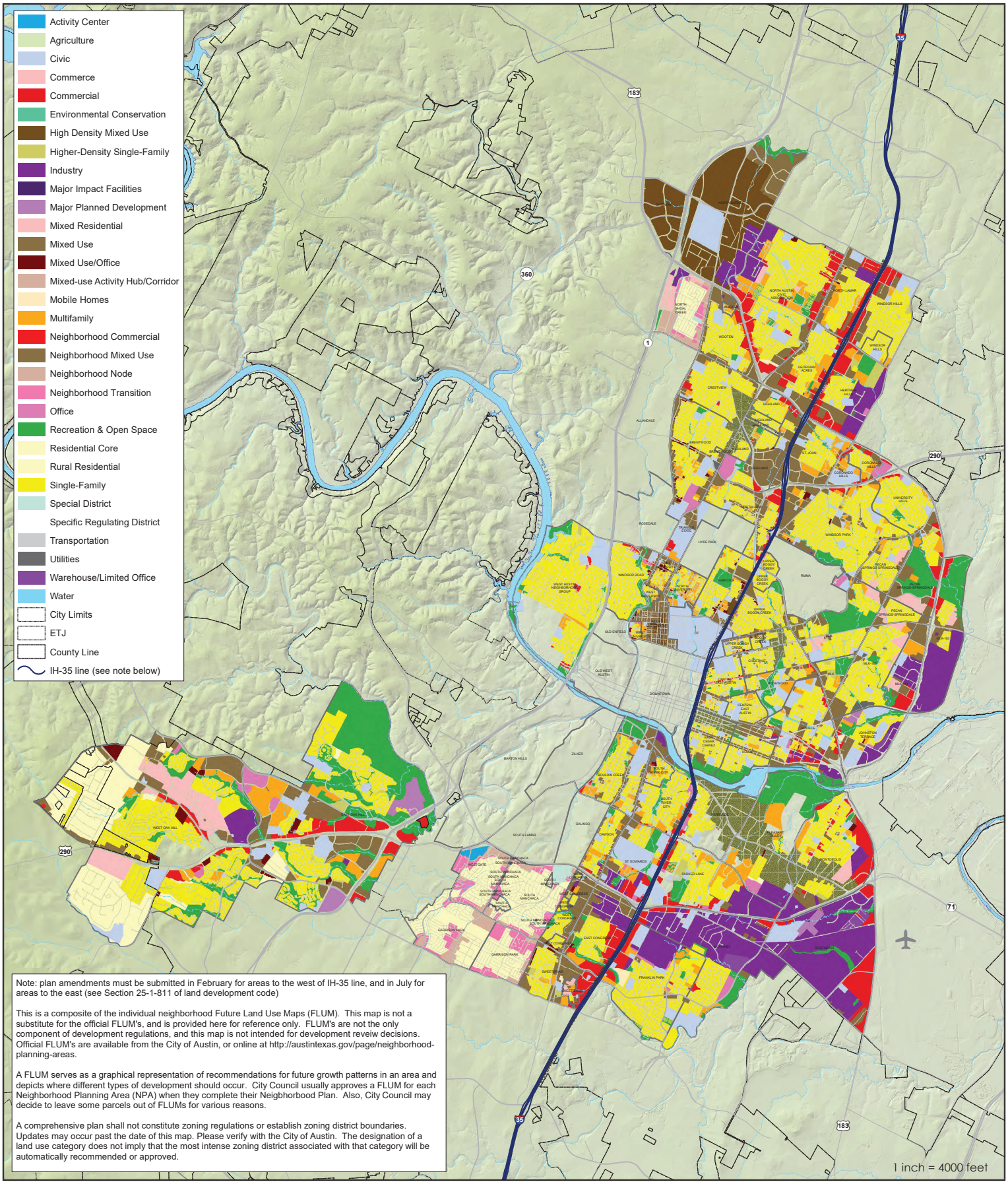
CAMPO

CAPITAL AREA METROPOLITAN PLANNING ORGANIZATION

Trends and Forecasts Report

Appendix B: Future Land Use Maps

Final 1: March 6, 2024



Note: plan amendments must be submitted in February for areas to the west of IH-35 line, and in July for areas to the east (see Section 25-1-811 of land development code)

This is a composite of the individual neighborhood Future Land Use Maps (FLUM). This map is not a substitute for the official FLUM's, and is provided here for reference only. FLUM's are not the only component of development regulations, and this map is not intended for development reveiw decisions. Official FLUM's are available from the City of Austin, or online at http://austintexas.gov/page/neighborhood-planning-areas.

A FLUM serves as a graphical representation of recommendations for future growth patterns in an area and depicts where different types of development should occur. City Council usually approves a FLUM for each Neighborhood Planning Area (NPA) when they complete their Neigbhorbood Plan. Also, City Council may decide to leave some parcels out of FLUMs for various reasons.

A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries. Updates may occur past the date of this map. Please verify with the City of Austin. The designation of a land use category does not imply that the most intense zoning district associated with that category will be automatically recommended or approved.

Future Land Use Map Composite

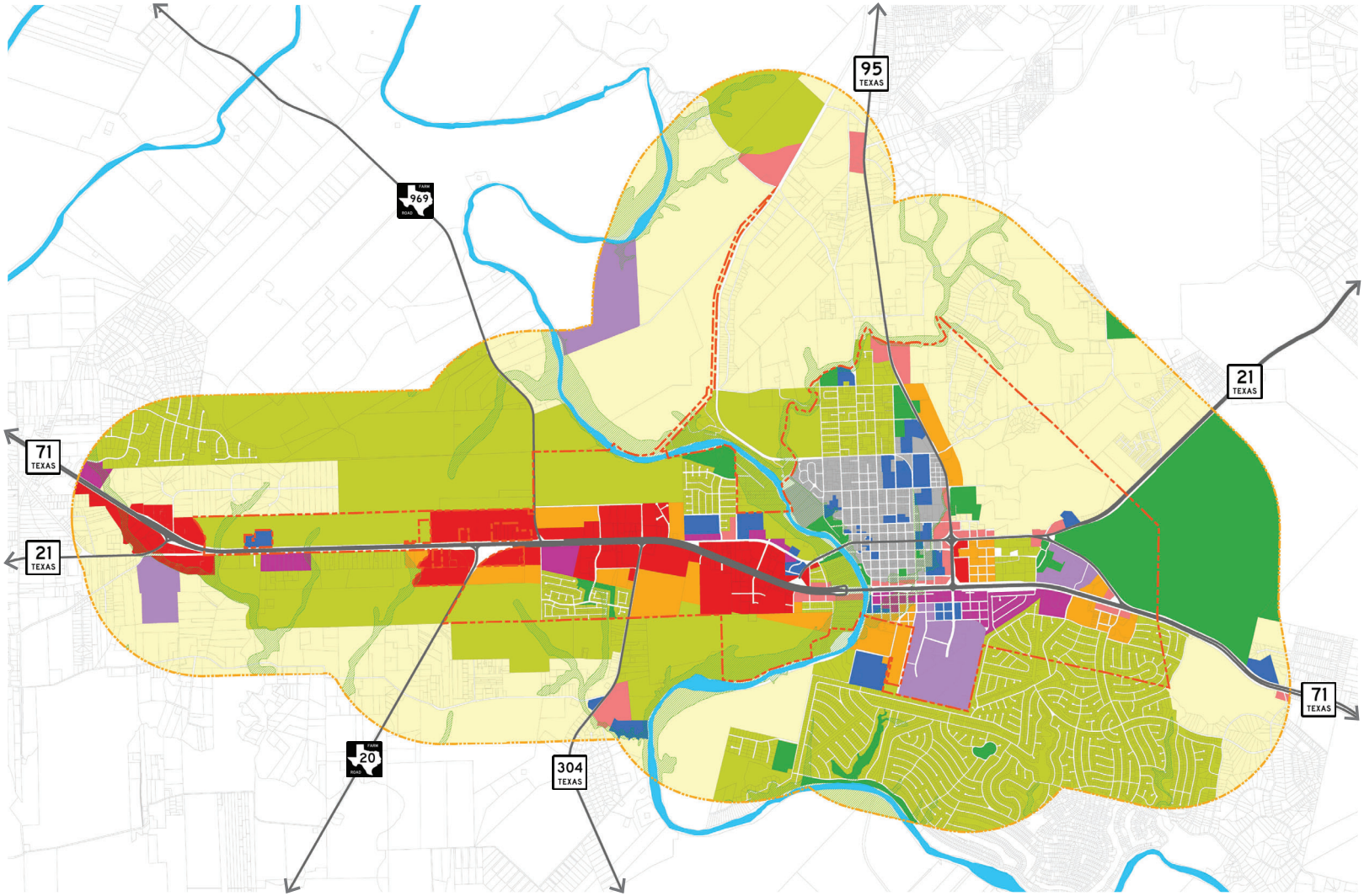
CITY OF AUSTIN

Created: Thursday, August 29, 2019
File: future_land_use_map_composite.mxd

PLANNING AND ZONING DEPARTMENT

FUTURE LAND USE MAP - BASTROP

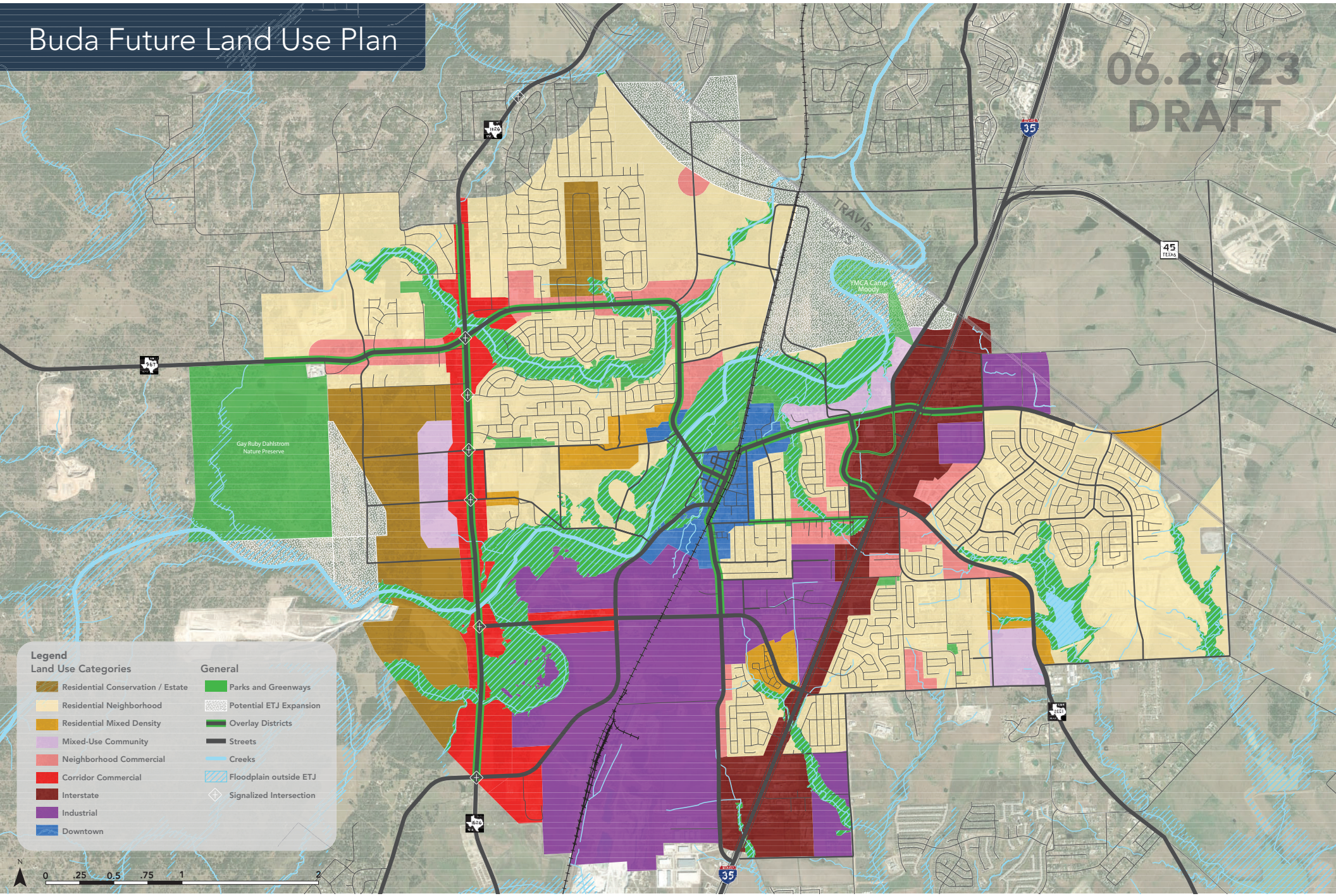
MAP 5-B:



LEGEND:

- CITY LIMITS
- STATUTORY ETJ
- PARKS & OPEN SPACE
- RURAL RESIDENTIAL
- NEIGHBORHOOD RESIDENTIAL
- TRANSITIONAL RESIDENTIAL
- NEIGHBORHOOD COMMERCIAL
- GENERAL COMMERCIAL
- PROFESSIONAL SERVICES
- DOWNTOWN BASTROP[1]
- PUBLIC & INSTITUTIONAL
- INDUSTRY
- FLOODPLAIN OVERLAY[2]

Notes: [1]Boundary is similar to the DB-FBC. [2]The Floodplain Overlay denotes environmentally sensitive land where development impacts should be minimized, and land could be preserved or dedicated as public parkland or open space.


Buda Future Land Use Plan
06.28.23
DRAFT
TRAVIS
YMCA Camp Moody
Gay Ruby Dahlstrom Nature Preserve
Legend
Land Use Categories
Residential Conservation / Estate
Residential Neighborhood
Residential Mixed Density
Mixed-Use Community
Neighborhood Commercial
Corridor Commercial
Interstate
Industrial
Downtown
General
Parks and Greenways
Potential ETJ Expansion
Overlay Districts
Streets
Creeks
Floodplain outside ETJ
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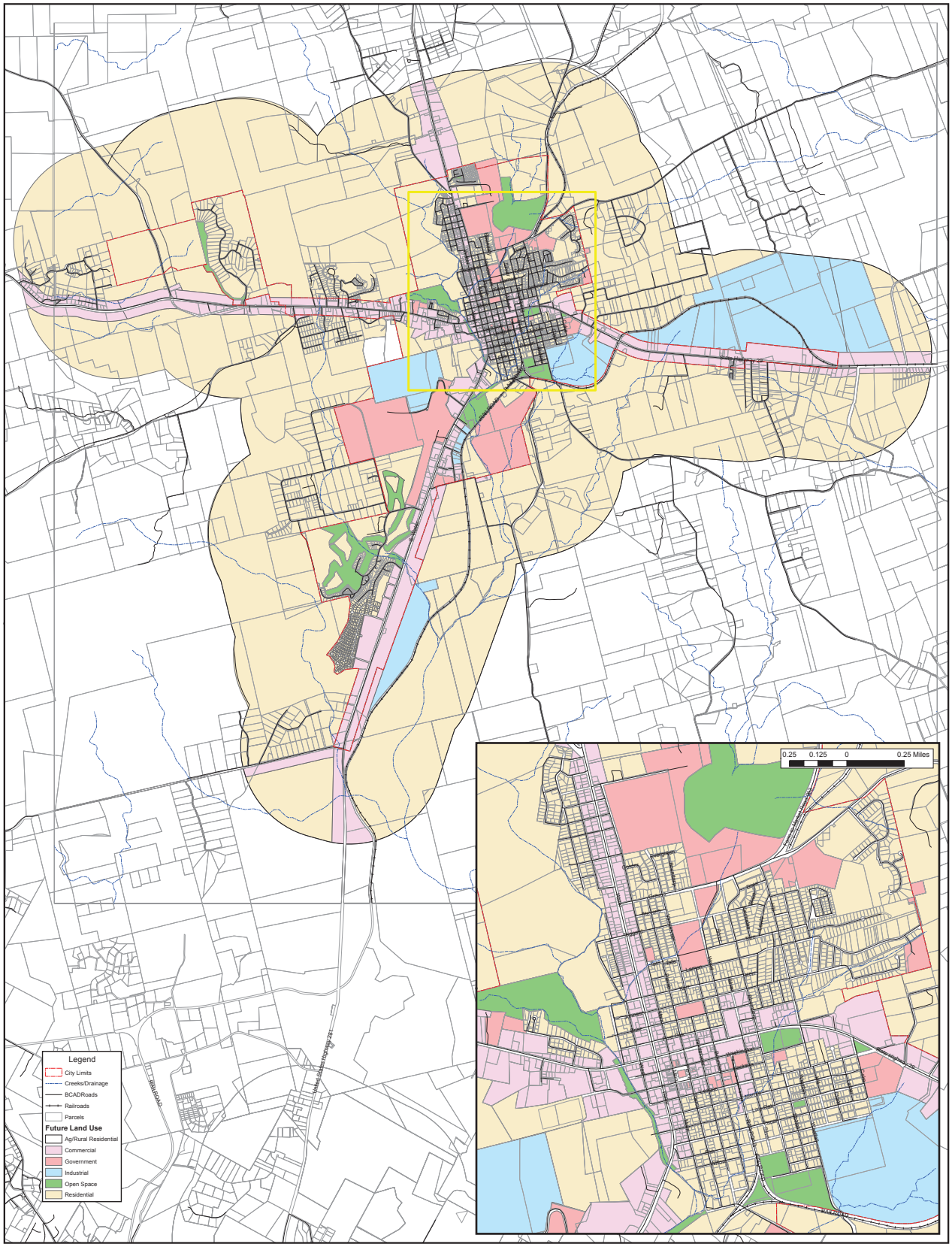
0.5
.75
1
2



CITY OF BURNET

Adopted Future Land Use

March 13, 2012

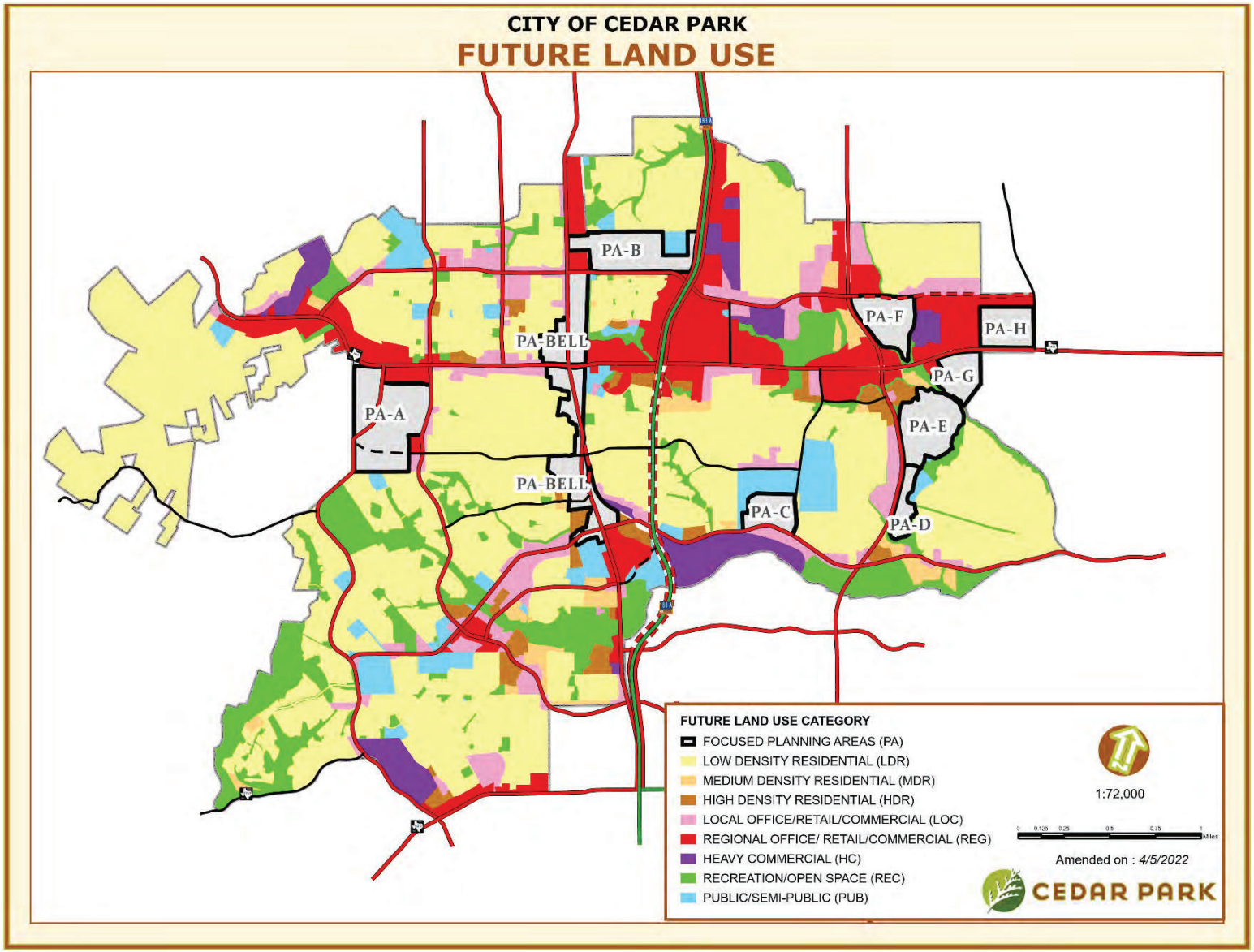
City of Burnet
P.O. Box 1369
1001 Buchanan Dr, Suite 4
Burnet, Texas 78611
(512) 756-6093
Fax (512) 756-8560
www.cityofburnet.com

Pursuant to Chapter 213.005 of the Local Government Code,
"A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries."

1 0.5 0 1 Miles

Printing Date: 3/21/2012
Map by: Jakob Hageman

Figure 10. Future Land Use Map



Dripping Springs

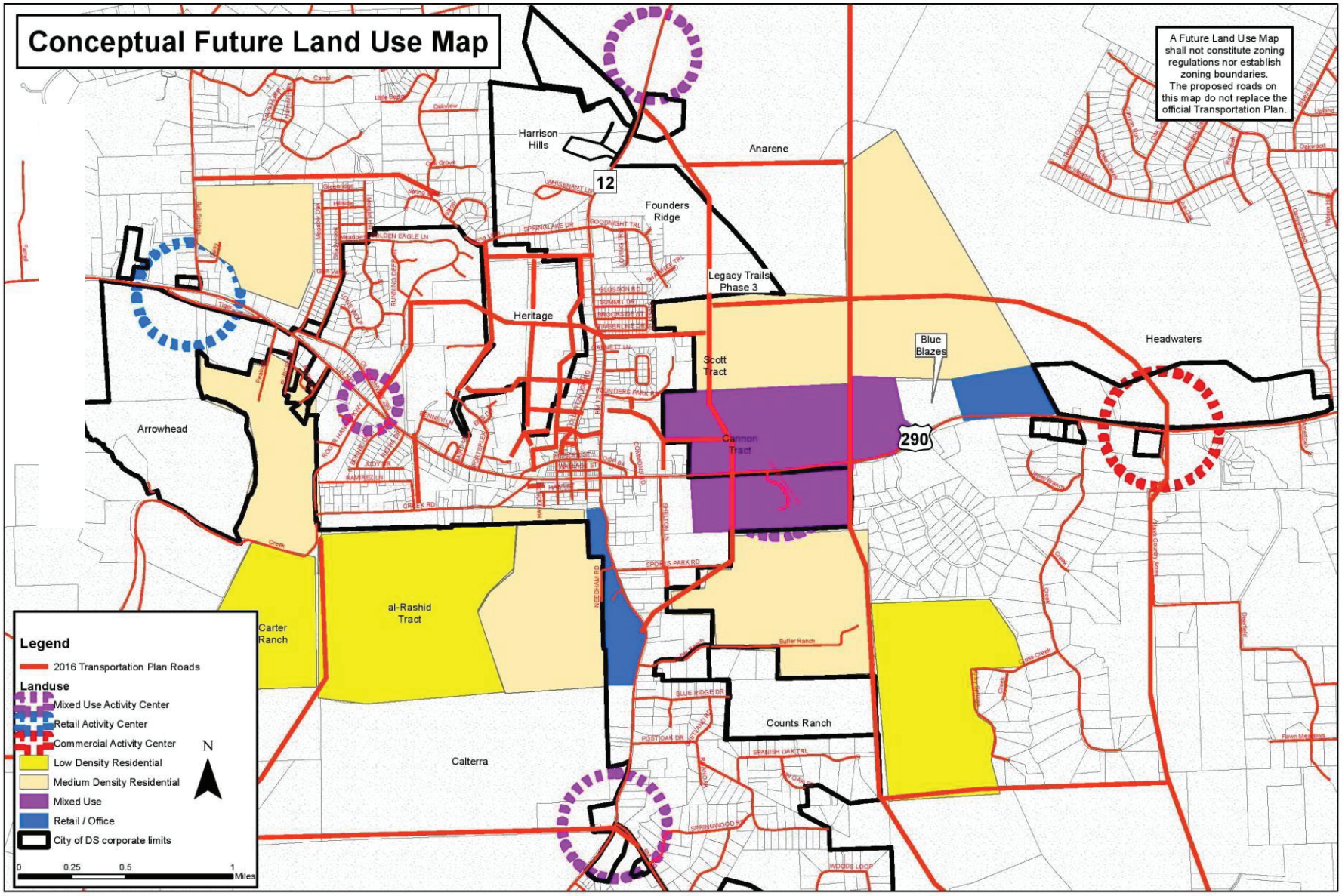
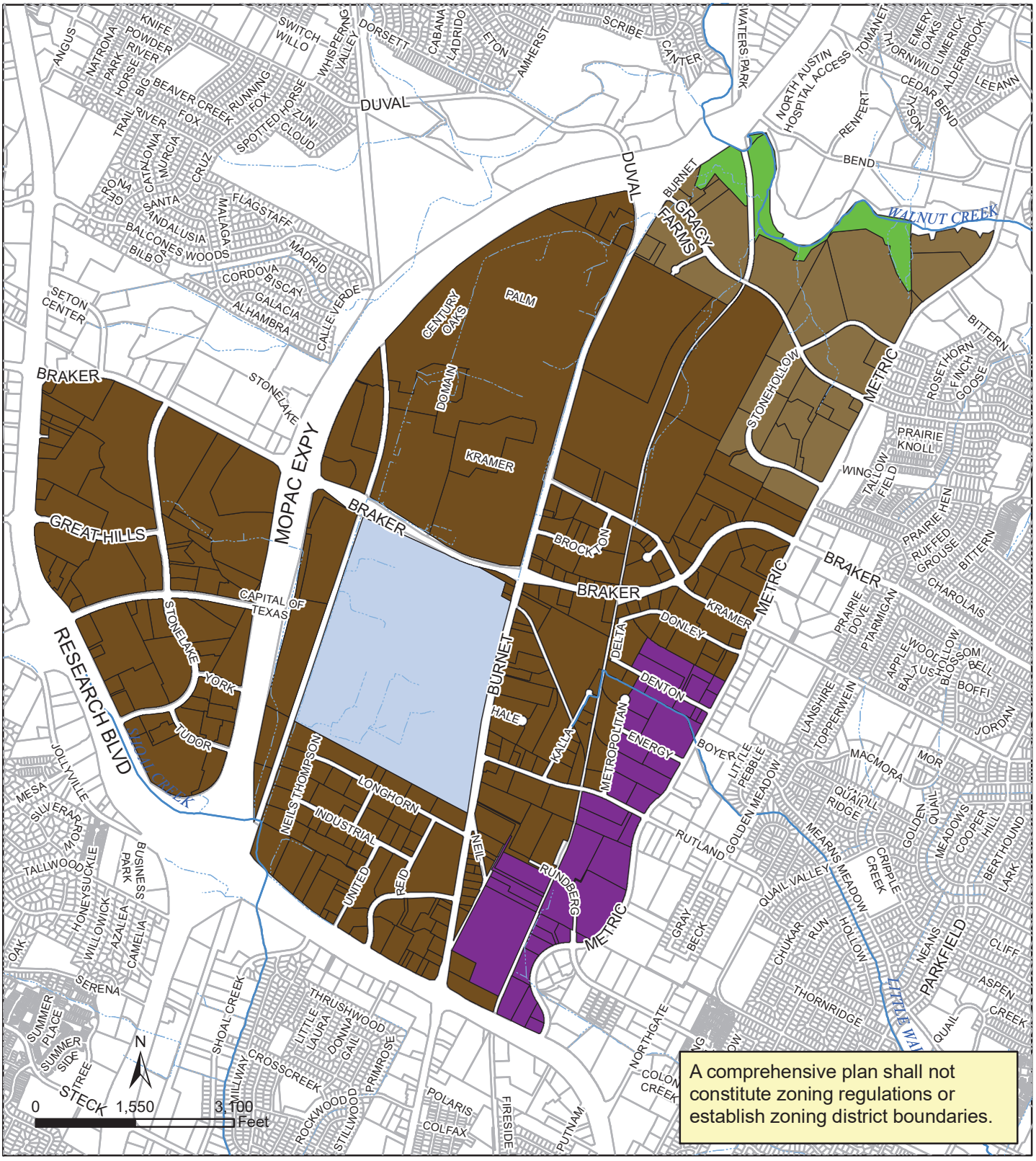


Figure 1: Conceptual Future Land Use Map



North Burnet-Gateway Combined Neighborhood Planning Area Future Land Use Map (FLUM)

Future Land Use Categories

- Mixed Use
- High Density Mixed Use
- Industry
- Civic
- Recreation & Open Space

City of Austin
Neighborhood Planning and Zoning Dept.
Map Created July 11, 2007

Pflugerville

Map 3.3. Future Land Use Map

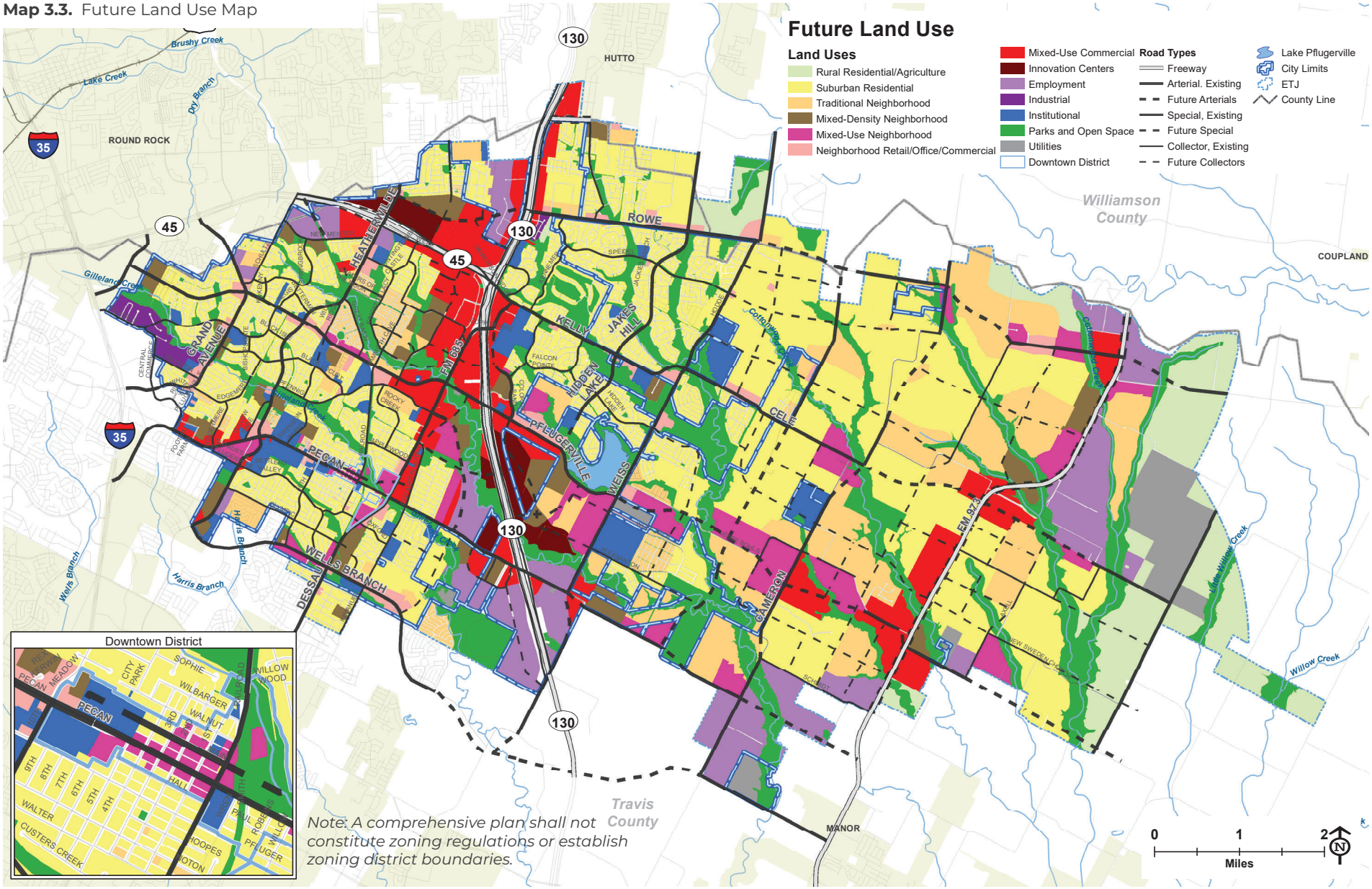
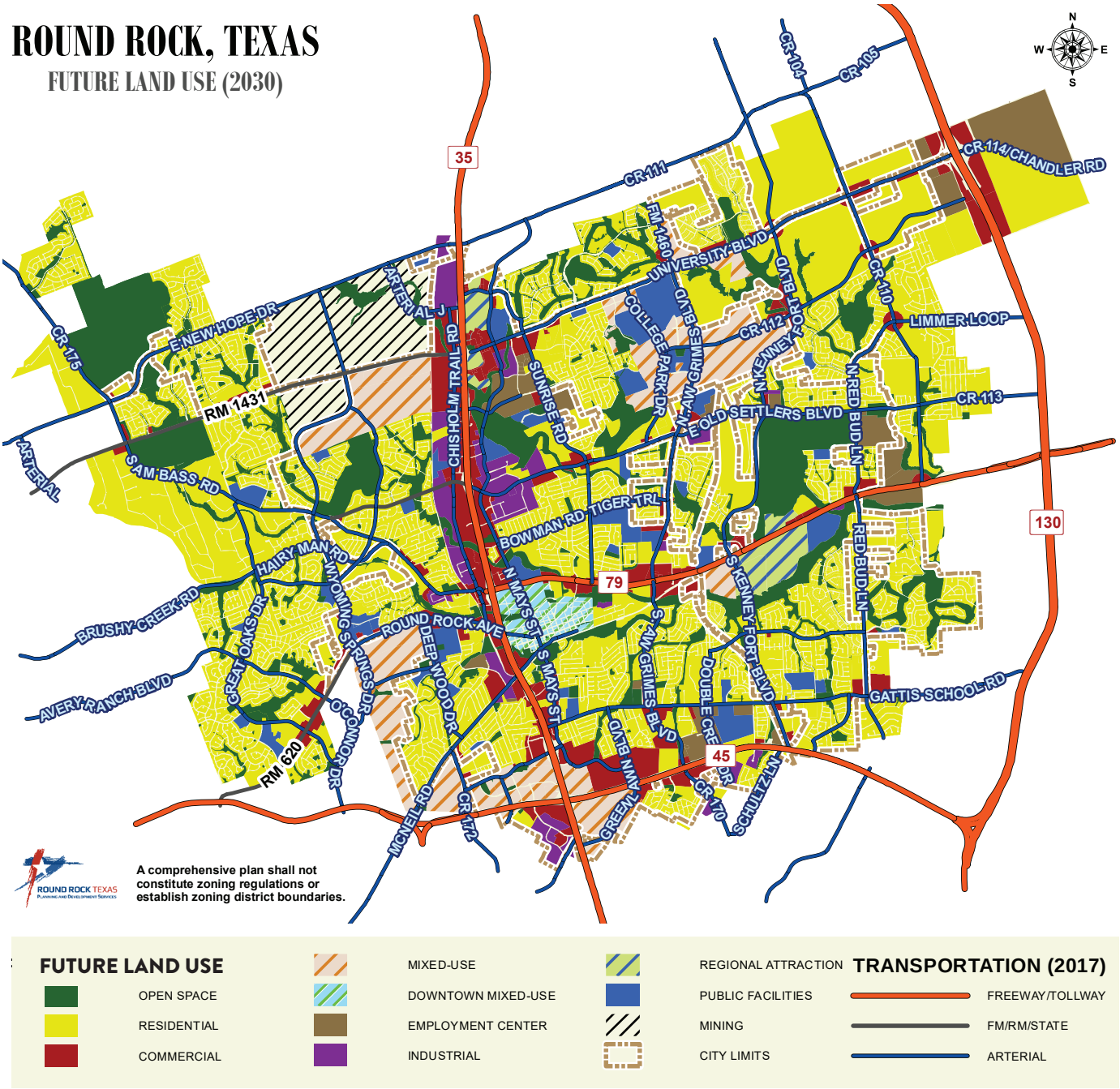


FIGURE 29. FUTURE LAND USE MAP



changes to map categories associated with new zoning districts and changing land use trends. To consider adjustments on the FLUM, staff conducted a preliminary review of the existing FLUM and identified potential revisions to create a new draft map. Staff then offered individual meetings between staff and stakeholders owning 100-plus acres of land in the city limits and/or ETJ to discuss potential changes to their land envisioned in the next ten years. Once a new draft FLUM was created, staff held an open house on July 22, 2019 to solicit public input. Staff identified 402 parcels of land in the city limits and ETJ consisting of five acres or more with a single owner and sent a letter inviting those owners to attend the Open House. The Open House was open to the public as well. The public and stakeholders provided input on how they saw the city and their parcels being developed or redeveloped in the future. Staff then revised the FLUM based on the input received.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
LUBBOCK DIVISION

STATE OF TEXAS, et al., Plaintiffs, v. UNITED STATES DEPARTMENT OF TRANSPORTATION, et al., Defendants.	No. 5:23-CV-304-H

MEMORANDUM OPINION AND ORDER

A federal administrative agency cannot act without congressional authorization. Here, the Federal Highway Administration created a rule requiring the states to measure, report, and set declining targets for the amount of carbon dioxide emitted by vehicles using the interstate and national-highway systems. For authority, the agency relied on 23 U.S.C. § 150(c)(3), which permits it to create measures to assess pavement conditions, bridge conditions, and "the performance of the Interstate System . . . [and] the National Highway System." Texas sued, alleging that the agency lacked authority to enact the rule. Given the statutory text's plain language and context, the Court agrees. The relevant definitions and related performance measures make clear that "performance of the Interstate/National Highway Systems" focuses on the infrastructure's effectiveness in facilitating travel, commerce, and national defense—not environmental outputs of vehicles using the systems. Moreover, the DOT's expansive interpretation is undermined by the fact that adopting it would render other statutory provisions superfluous. Additionally, Section 150(c)(3)'s performance measures only exist to carry out Section 119's National Highway Performance Program, which also distinguishes between the highway system's performance and environmental impact. Thus, the Court concludes that the rule was unauthorized.

1. Factual and Procedural Background

A. The National Highway Performance Program (NHPP) and 23 U.S.C. § 150's Performance Measures

i. The NHPP facilitates the construction, maintenance, and improvement of the nation's transportation infrastructure.

The federal government has provided some form of highway funding to the states for more than 100 years. These programs are "almost entirely focused on highway construction," and "[s]tate [departments of transportation (DOTs)] largely determine which projects are funded" so long as the fund-use is statutorily authorized. Robert S. Kirk, Cong. Rsch. Serv., R47022, Federal Highway Programs: In Brief 1 (2022). The NHPP is the largest federal-aid highway program in the country, with recent annual authorizations averaging nearly $30 billion dollars. *Id.* at 5. The NHPP "funds projects to achieve national performance goals consistent with state and metropolitan planning" by supporting "improvement of the condition and performance of the National Highway System, which includes Interstate System highways and bridges." *Id.*

The NHPP's statutory authorization and funding requirements are found in 23 U.S.C. § 119. In addition to restricting the way that funds may be used, the statute also identifies the program's four broad purposes:

> (1) to provide support for the condition and performance of the National Highway System;
>
> (2) to provide support for the construction of new facilities on the National Highway System;
>
> (3) to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in an asset management plan of a [s]tate for the National Highway System; and

> (4) to provide support for activities to increase the resiliency of the National Highway System to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters.

23 U.S.C. § 119(b). Conceivably, a broad range of projects could support those purposes, but the statute only funds certain "eligible projects" that are consistent with them. *See id.* § 119(d).

To be eligible for funding, projects must first "support[] progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the National Highway System." *Id.* § 119(d)(1)(A). Second, projects must be consistent with the broader transportation planning process and its goals, which are codified at 23 U.S.C. §§ 134 and 135.[1] *Id.* § 119(d)(1)(B). Should a project meet those two threshold requirements, Section 119 then provides a specific list of purposes that NHPP funds may finance. *See id.* § 119(d)(2). Many of those purposes relate to building, maintaining, or improving the

[1] 23 U.S.C. § 134 is entitled "Metropolitan transportation planning." The goal of the statute is "to encourage and promote the safe and efficient management, operation, and development of surface transportation systems" that will "serve the mobility needs of people and freight," "foster economic growth and development," and "better connect housing and employment," while "minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes identified in this chapter." 23 U.S.C. § 134(a)(1). Broadly speaking, the section is devoted to laying out the planning requirements for "long-range transportation plans and transportation improvement programs through a performance-driven, outcome-based approach to planning for metropolitan areas of [a] [s]tate." *Id.* § 134(c)(1).

23 U.S.C. § 135 is entitled "Statewide and nonmetropolitan transportation planning." Section 135 explicitly incorporates the goals laid out in Section 134(a), in addition to other stated goals. *Id.* § 135(a). In general, whereas Section 134 is focused specifically on metropolitan areas, Section 135 provides for the transportation-planning process for non-metropolitan areas. *See generally id.* § 135.

In many respects, Sections 134 and 135 have similar, if not identical, language and fulfill similar purposes as to their respective targets (metropolitan areas and non-metropolitan areas). *See generally id.* §§ 134, 135. States and the designated organizations are required to complete these plans to be eligible for NHPP funds. *See id.* §§ 134(c), 135(a).

physical infrastructure of the National Highway System, the Interstate System, and other federal-aid highways, as well as the tunnels, bridges, ferries, and public bus stations that service those systems. *See, e.g.*, *id.* § 119(d)(2)(A)–(C), (F), (G), (P). Other purposes authorize funding for operational programs, such as training bridge and tunnel inspectors, paying for the bridge and tunnel inspections themselves, or providing for the operating costs of traffic-monitoring systems. *See, e.g.*, *id.* § 119(d)(2)(D), (E), (J). Some purposes authorize funding for specific environment-related projects, like mitigating water pollution or environmental degradation caused by a transportation facility, controlling noxious weeds, implementing mitigation efforts authorized by Section 119(g),[2] or making resiliency improvements along the National Highway System.[3] *See, e.g.*, *id.* § 119(d)(2)(M)–(O), (R). Thus, to be eligible for funding under the NHPP, a project must (1) support progress towards a specified national performance goal or goals; (2) be consistent with Sections 134 and 135; and (3) qualify as one of the explicitly enumerated purposes. *See id.* § 119(d).

[2] Section 119(g) authorizes NHPP funds for "participation in natural habitat and wetlands mitigation efforts." 23 U.S.C. § 119(g)(1). These authorized efforts include "participation in mitigation banking or other third-party mitigation arrangements," "contributions to statewide and regional efforts to conserve, restore, enhance, and create natural habitats and wetlands," and "the development of statewide and regional environmental protection plans." *Id.* Authorization is limited, however, to programs "relating to projects funded under [Title 23]." *Id.*

[3] This authorization allows funds to go toward the "protective features" described in Section 119(k)(2), which include things likes "raising roadway grades," "relocating roadways" located in flood plains, and "increasing the size or number of drainage structures." U.S.C. § 119(d)(2)(R), (k)(2).

ii. Section 150 authorizes the federal Department of Transportation (DOT) to promulgate performance measures to accomplish the NHPP's purpose.

In 2012, and then again in 2015, Congress amended the NHPP to authorize the Secretary of Transportation to promulgate rules establishing "performance measures."[4] *See id.* § 150. These performance measures "provide a means to the most efficient investment of [f]ederal transportation funds by refocusing on national transportation goals . . . and improving project decisionmaking through performance-based planning and programming." *Id.* § 150(a). Section 150 then lists seven "national goals" on which "Federal-aid highway program[s]" should be focused, including safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, and reduced project delivery delays. *Id.* § 150(b). Most relevant here is the goal of environmental sustainability: "To enhance the performance of the transportation system while protecting and enhancing the natural environment." *Id.* § 150(b)(6).

In spite of those broad national goals, Section 150's reach is limited. The statute provides that performance measures may only be promulgated if they are specifically authorized in Section 150(c). *Id.* § 150(c)(2)(C). In other words, Congress deliberately

[4] Section 150 was last amended in December 2015. *See* Fixing America's Surface Transportation Act, Pub. L. No. 114-94, § 1446, 129 Stat. 1312, 1437–38 (2015). That said, Congress has considered amending Section 150 in the years since. The parties dispute whether one prior proposed amendment is relevant to the analysis. Specifically, an earlier House of Representatives version of the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021), would have amended Section 150. *See* INVEST in America Act, H.R. 3684, 117th Cong. § 1403 (2021) (as introduced in the House).

One such proposed amendment would have authorized federal agencies to establish "measures for the [s]tates to use to assess (A) carbon dioxide emissions per capita on public roads; (B) carbon dioxide emissions using different parameters than described in subparagraph (A) that the Secretary determines to be appropriate; and (C) any other greenhouse gas emissions on public roads that the Secretary determines to be appropriate." *Id.* This language was ultimately stricken from the final bill and the subsequently codified law. *See* Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021).

limited the types of performance measures that Section 150 authorizes the government to create. *See id.* Sections 150(c)(3)–(6) describe the authorized measures, three categories of which are specifically tied to other provisions of Title 23. Section 150(c)(3)'s measures, for instance, are "for the purpose of carrying out [S]ection 119." *Id.* § 150(c)(3). To that end, Section 150(c)(3) directs the Secretary to establish "measures for [s]tates to use to assess" pavement conditions, bridge conditions, and "the performance of the Interstate System . . . [and] the performance of the National Highway System." *Id.* § 150(c)(3)(A).

The statute mandates measures for three additional topics—highway safety, congestion mitigation and air quality, and national freight movement. *Id.* § 150(c)(4)–(6). And, regarding air quality, Congress specifically directs the Secretary to establish measures relating to "on-road mobile source emissions." *Id.* § 150(c)(5). For safety and air quality, the measures are for the purposes of carrying out 23 U.S.C. §§ 148 and 149.[5] *See id.* § 150(c)(4)–(5). Further, while not tied to another provision of Title 23, Section 150(c)(6) requires the Secretary to "establish measures for [s]tates to use to assess freight movement on the Interstate System." *Id.* § 150(c)(6). In addition to the rule-making authorization, the statute requires such measures to be promulgated in a specific manner and for states to report on their progress towards achieving such measures. *See id.* § 150(c)(1)–(2), (e).

[5] Section 148 codifies the Highway Safety Improvement Program—the purpose of which is to "achieve a significant reduction in traffic fatalities and serious injuries on all public roads" by authorizing funding for safety-related projects and planning. *See* 23 U.S.C. § 148. Section 149 codifies the Congestion Mitigation and Air Quality Improvement Program, which authorizes Title 23 funds for specific projects which include the regulation of on-road mobile source emissions like ozone, carbon monoxide, and particulate matter. *Id.* § 149.

B. The History of the DOT's Greenhouse Gas (GHG) Emissions Measure

i. The 2017 Rule

Following the codification of Section 150, the first performance-measurement rules were issued in 2016.[6] One such rule, promulgated by the DOT's Federal Highway Administration,[7] established a performance measure related to GHG emissions. *See* National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program, 82 Fed. Reg. 5970, 5974 (Jan. 18, 2017) (to be codified at 23 C.F.R. pt. 490) (the "2017 Rule"). In relevant part, the rule required state DOTs and metropolitan planning organizations (MPOs) to measure and track CO_2 emissions on system highways, "establish [declining CO_2 emissions targets,] and report on [their] progress" towards achieving those targets. *Id.* at 5974, 5980–81.

For statutory support for the GHG emissions measure, the DOT relied on the general provisions of Section 150(c)(3)(A)(ii), which authorize it to establish metrics to assess the "performance" of the Interstate System and National Highway System. *Id.* at 5994; *see also* 23 U.S.C. § 150(c)(3)(A)(ii)(IV)–(V). In finding that authority, the DOT interpreted "performance" to include "environmental performance," which it described as "an integral part of the Federal-aid Highway Program." 82 Fed. Reg. at 5995. It claimed

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[6] *See, e.g.*, National Performance Management Measures: Highway Safety Improvement Program, 81 Fed. Reg. 13882 (Mar. 15, 2016) (to be codified at 23 C.F.R. pt. 490); National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program, 82 Fed. Reg. 5886 (Jan. 18, 2017) (to be codified at 23 C.F.R. pt. 490).

[7] Because Section 150 requires "the Secretary" of Transportation to "promulgate . . . rulemaking[s] that establish[] performance measures and standards," 23 U.S.C. § 150(c)(1), the Court refers to the rules as DOT actions.

that its interpretation was supported by the national goal of "environmental sustainability" found in Section 150(b)(6), the transportation-planning provisions in Sections 134 and 135, and other provisions in Title 23. *See id.* The interrelatedness of the various provisions, the DOT argued, supported a broad interpretation of "performance," which then necessarily included "environmental performance." *See id.* at 5995–96. But the 2017 Rule's shelf life was short.

ii. The 2018 Rule's Repeal of the 2017 Rule

The agency reversed course in 2018 and concluded that Section 150 did not enable the agency to establish a GHG emissions measure. Following a change in the presidential administration and a series of executive orders,[8] the DOT began a review of its existing regulations "to determine whether changes would be appropriate to eliminate duplicative regulations and streamline regulatory processes." National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program, 83 Fed. Reg. 24920, 24922 (May 31, 2018) (codified at 23 C.F.R. pt. 490) (the "2018 Rule"). The DOT subsequently identified the 2017 Rule, and specifically the GHG emissions measure, as one such regulation. *See id.* As a result, the DOT began the process of the rule's repeal. *See id.*

The 2018 Rule was simple in scope—it repealed the 2017 Rule. *Id.* at 24920. In doing so, it identified three problems with the 2017 Rule: (1) that the 2017 Rule exceeded the statutory authority delegated to the DOT in Section 150; (2) that the costs of the 2017

[8] *See, e.g.*, Exec. Order No. 13771, 82 Fed. Reg. 9339 (Jan. 30, 2017); Exec. Order No. 13777, 82 Fed. Reg. 12285 (Feb. 24, 2017).

Rule outweighed its benefits; and (3) that the 2017 Rule was duplicative of other regulatory efforts. *See id.* at 24923–26. Particularly, it stated that the 2017 Rule could point to no "statutory provision that specifically directs or requires [the DOT] to adopt a GHG measure." *Id.* at 24923. It further observed that "the national goals language" in Section 119(d)(1)(A) imposed limitations on NHPP funds. *Id.* at 24923–24. Section 119's language focuses on "physical condition[s] of the system and the efficiency of transportation operations across the system . . . [but it does not] support [the DOT's] prior, broader interpretation of 'performance' under [S]ection 150(c)(3)." *Id.* In other words, "[t]he structure of [S]ection 150 itself supports a narrower construction of the [S]ection 150 performance measures authorization than previously adopted by [the DOT]." *Id.* at 24924. And, for a few years, that was the final word on the matter.

iii. The 2022 Proposed Rule and the 2023 Final Rule

In 2022, after another administration change and updated agency directives,[9] the DOT once again revisited the scope of its authority under Section 150, and it began the process of promulgating a new iteration of the GHG emissions measure. National Performance Management Measures; Assessing Performance of the National Highway System, Greenhouse Gas Emissions Measure, 87 Fed. Reg. 42401, 42402–03 (proposed July 15, 2022) (to be codified at 23 C.F.R. pt. 490) (the "2022 Proposed Rule"). The 2022 Proposed Rule sought to re-establish the GHG emissions measure, and it proposed requiring states "to establish declining [CO_2] targets and to establish a method for the measurement and reporting of [GHG] emissions associated with transportation" on the

[9] *See, e.g.*, Exec. Order No. 13990, 86 Fed. Reg. 7037 (Jan. 20, 2021); Exec. Order No. 14008, 86 Fed. Reg. 7619 (Jan. 27, 2021).

highway system. *Id.* at 42401. Unlike the 2017 Rule, it gave states additional flexibility to establish their own targets, but it required those targets to meet the Administration's targets of net-zero emissions by 2050. *Id.*

Despite the 2018 Rule, the DOT asserted that it did in fact have the authority to promulgate the GHG emissions measure under Section 150(c)(3)(A)(ii)(IV)–(V). *See id.* at 42407–10. The agency's review contended that the 2018 Rule had "adopted a narrow interpretation of" Section 150 and that the 2022 Proposed Rule's reading was consistent with the statute. *Id.* at 42408. In response, Texas and the Texas Department of Transportation (TXDOT) each commented on the proposed rule's statutory authorization. *See* Dkt. Nos. 1-3 (Texas's comments on the proposed rule); 1-6 (TXDOT's comments on the proposed rule). Each entity claimed, among other things, that the 2022 Proposed Rule would exceed the statutory authority present in Section 150. Dkt. Nos. 1-3 at 6, 8 (arguing that the DOT's interpretation of "performance" ignores the statutory text found in Section 119 and that the national-goals language found in Section 150(b)(6) does not create rule-making authority); 1-6 at 4 (arguing the same).

The agency disagreed. In December 2023, the DOT issued the 2023 Rule establishing the GHG measure. National Performance Management Measures; Assessing Performance of the National Highway System, Greenhouse Gas Emissions Measure, 88 Fed. Reg. 85364 (Dec. 7, 2023) (to be codified at 23 C.F.R. pt. 490) (the "2023 Rule"). The 2023 Rule was different than the 2022 Proposed Rule in two primary ways. First, the 2023 Rule clarified that while states must set declining targets for GHG emissions, those targets do not need to demonstrate reductions toward net-zero emissions by 2050. *Id.* at 85380. Second, the 2023 Rule stated that there were no penalties for a state's failure to meet those

targets or even to achieve significant progress toward those targets—other than having to explain the lack of progress towards its self-established target. *Id.* at 85378. A state that "set[s] a declining target but fail[s] to achieve [that] target[] can satisfy regulatory requirements by documenting the actions [the state] will take to achieve that target" in their next report. *Id.* Aside from those differences, the crux of the 2022 Proposed Rule remained—states are required to measure and report CO_2 emissions generated by on-road mobile sources on the highway system and to establish declining CO_2 emission targets. *See id.* at 85364.

The finalized 2023 Rule reiterates that the DOT relied on 23 U.S.C. § 150(c)(3)(A)(ii)(IV)–(V) for statutory authority. The 2023 Rule "reaffirms that Congress provided the [DOT] with clear authority" to promulgate the GHG emissions measure. *See id.* at 85367. That directive, the DOT argues, necessarily means that "performance" in Section 150(c)(3)(A)(ii)(IV)–(V) includes "environmental performance." *See id.* The DOT asserts that its current reading of "performance" is limited in scope to the performance only of the National Highway System and the Interstate System, but it nevertheless broadly authorizes the DOT to attack climate change. *See id.* at 85375–76, 85379. It further argues that its current reading of "performance" is consistent with other sections of Title 23, *see id.* at 85367–68, and that the 2018 Rule's statutory analysis was flawed, *id.* at 85369–70. The 2023 Rule was scheduled to take effect on January 8, 2024, with the states' targets originally due on February 1, 2024. *Id.* at 85364.

C. Procedural History

On December 19, 2023, Texas and TXDOT filed a complaint challenging the legality of the 2023 Rule. Dkt. No. 1. The complaint alleges that the 2023 Rule: (1) exceeds the

DOT's statutory authority; (2) is arbitrary and capricious in violation of the Administrative Procedure Act (APA); and (3) violates the Spending Clause of the U.S. Constitution. *Id.* at 17–22. The plaintiffs seek a declaration from the Court that the 2023 Rule is unlawful because it was promulgated in excess of the agency's authority and that it was arbitrary and capricious, vacatur of the 2023 Rule, and attorneys' fees. *Id.* at 22. After several weeks had passed, and in light of the looming February 1 reporting deadline, the Court ordered the plaintiffs to report on the status of this case, including whether the plaintiffs intended to request emergency relief. Dkt. No. 5.

In response to that Order, the plaintiffs informed the Court that they did intend to seek a preliminary injunction, *see* Dkt. No. 7, so the Court ordered the parties to confer and submit a proposed briefing schedule, *see* Dkt. No. 8. Shortly after the plaintiffs filed their request for an injunction (Dkt. Nos. 9–10), the parties informed the Court that they had agreed to a "45-day extension of the [2023] Rule's upcoming deadline"—effectively pushing the operative date of the 2023 Rule to March 17, 2024, *see* Dkt. No. 11. The Court issued a scheduling order adopting the parties' proposed schedule. *Id.*; Dkt. No. 12. The parties later informed the Court that the defendants had extended the 2023 Rule's delayed deadline from March 17, 2024, to March 29, 2024. Dkt. No. 13. Further, the parties notified the Court that they wished to resolve this case on the merits through cross-motions for summary judgment. *Id.* In light of that update, the Court vacated its previous scheduling order and set a schedule for the parties to complete briefing on the cross-motions for summary judgment. Dkt. No. 14.

After the plaintiffs withdrew their motion for a preliminary injunction (Dkt. Nos. 16; 17), they filed their motion for summary judgment (Dkt. No. 18). The defendants

responded with their own cross-motion for summary judgment. Dkt. No. 24. Briefing on the cross-motions is now complete. The American Road and Transportation Builders Association and the Associated General Contractors of America, Inc. (together, "Amici") filed an amicus brief in support of the plaintiffs. Dkt. No. 28. Further, the defendants have filed a copy of the 2023 Rule's administrative record. Dkt. No. 15. The cross-motions for summary judgment (Dkt. Nos. 18; 24) are now ripe and before the Court.

2. Standard of Review

The parties agree that summary judgment is appropriate to resolve the plaintiffs' complaint. *See* Dkt. No. 13 at 1. Summary judgment is proper where "there is no genuine issue as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). In the context of a challenge to an agency action under the APA, "[s]ummary judgment is the proper mechanism for deciding, as a matter of law, whether an agency action is supported by the administrative record and consistent with the APA standard of review." *Blue Ocean Inst. v. Gutierrez*, 585 F. Supp. 2d 36, 41 (D.D.C. 2008). In other words, in evaluating an APA case on summary judgment, courts apply the standard of review from the APA. *See Shell Offshore Inc. v. Babbitt*, 238 F.3d 622, 627 (5th Cir. 2001). That standard requires a court to "hold unlawful and set aside agency action, findings, and conclusions found to be," among other things, promulgated in excess of statutory authority. 5 U.S.C. § 706(2)(A)–(D).

3. Jurisdiction

Neither party has challenged the Court's jurisdiction. But even where Article III standing has not been challenged, a court "must—where necessary—raise it *sua sponte*." *Ford v. NYLCare Health Plans of Gulf Coast, Inc.*, 301 F.3d 329, 331–32 (5th Cir. 2002).

Federal courts have jurisdiction over cases or controversies only, and standing is "an essential and unchanging part of the case-or-controversy requirement of Article III." *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 560 (1992). "[S]tanding is not dispensed in gross," so a court must conclude that standing has been established as to each claim and for each form of relief sought. *See TransUnion LLC v. Ramirez*, 594 U.S. 413, 431 (2021). To demonstrate standing, the plaintiffs must suffer an "injury in fact" that is both "concrete and particularized" and "actual or imminent." *Lujan*, 504 U.S. at 560 (quoting *Whitmore v. Arkansas*, 495 U.S. 149, 155 (1990)). That injury must be "fairly traceable to the challenged action of the defendants." *Id.* (cleaned up) (quoting *Simon v. E. Ky. Welfare Rts. Org.*, 426 U.S. 26, 41–42 (1976)). And it must be "likely"—not speculative—that the injury will be "redressed by a favorable decision." *Id.* at 561 (quoting *Simon*, 426 U.S. at 38). The "ordinary rule," however, is that a party that is the "object of the regulation may challenge it." *Contender Farms, L.L.P. v. U.S. Dep't of Agric.*, 779 F.3d 258, 266 (5th Cir. 2015) (cleaned up). The Court considers each aspect of standing in turn. But in light of the lack of any challenge to the Court's jurisdiction, it does so briefly.

First, the Court finds that the plaintiffs would suffer an injury in fact if the 2023 Rule were to take effect. While such injury need not have already occurred, an injury must be "certainly impending" for a court to find that there is an injury in fact. *See Clapper v. Amnesty Int'l USA*, 568 U.S. 398, 409 (2013) (emphasis omitted) (quoting *Lujan*, 504 U.S. at 565 n.2). Here, the 2023 Rule would indisputably require either Texas or TXDOT[10] to

[10] All that is required of the case-or-controversy requirement is that one party has standing. *See Rumsfeld v. F. for Acad. & Institutional Rts., Inc.*, 547 U.S. 47, 52 n.2 (2006). The 2023 Rule itself does not make clear which plaintiff would bear this cost—but it is obvious that one of them would. *See* Dkt. No. 15-2 at 2.

expend compliance costs. Dkt. No. 15-2 at 2; *see also* Dkt. Nos. 19 at 21 (noting that the 2023 Rule would require compliance costs); 25 at 24 (estimating the final cost to state DOTs). At a minimum, the plaintiffs would be forced to spend money to "establish[] the GHG measure" and "implement[] the GHG measure for each component of the rule that may involve costs." Dkt. No. 15-2 at 2. This "amounts to an increased regulatory burden," which "typically satisfies the injury in fact requirement." *Contender Farms, L.L.P.*, 779 F.3d at 266. The Court finds that this certainly impending injury is sufficient to establish the plaintiffs' injury in fact.

Resolving the remaining two elements of standing is straightforward. Where a plaintiff would suffer injury as the object of the challenged government action, "there is ordinarily little question that the action . . . has caused him injury, and that a judgment preventing . . . the action will redress it." *Id.* at 264 (quoting *Lujan*, 504 U.S. at 561–62). Here, there is little doubt that the plaintiffs' imminent injuries—which they would incur should the 2023 Rule take effect—are the direct result of the DOT's enforcement of the 2023 Rule and are therefore fairly traceable to the challenged rule. *See* Dkt. No. 15-2 at 2. Further, the relief sought by the plaintiffs—vacatur of the rule—would redress the plaintiffs' injuries. Without the 2023 Rule, the plaintiffs need not incur costs from establishing and implementing the GHG emissions measure. Therefore, the Court finds that the plaintiffs have established traceability and redressability. And finding that all three elements of standing are present, the Court concludes that the plaintiffs have standing to challenge the 2023 Rule.

4. Analysis

A. Administrative agencies may only do what Congress authorizes them to do.

"It is axiomatic that an administrative agency's power to promulgate legislative regulations is limited to the authority delegated [to it] by Congress." *VanDerStok v. Garland*, 86 F.4th 179, 187 (5th Cir. 2023) (quoting *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988)). Legislative grants to agencies are policed by the APA, which requires courts to "set aside agency action found to be, among other things, 'in excess of statutory jurisdiction, authority, or limitations, or short of statutory right.'" *Id.* at 187–88 (quoting 5 U.S.C. § 706(2)(C)). The "core inquiry" in an APA case is whether the rule in question is a "lawful extension of the statute under which the agency purports to act, or whether the agency has indeed exceeded its 'statutory jurisdiction, authority, or limitations.'" *Id.* at 188 (quoting 5 U.S.C. § 706(2)(C)).

"No matter how it is framed, the question a court faces when confronted with an agency's interpretation of a statute it administers is always, simply, whether the agency has stayed within the bounds of its statutory authority." *City of Arlington v. FCC*, 569 U.S. 290, 297 (2013) (emphasis omitted). Therefore, an analysis of a rule's authority must begin with the text of the authorizing statute. *Sackett v. EPA*, 598 U.S. 651, 671 (2023). The "ordinary meaning and structure of the law itself" guides this inquiry. *Food Mktg. Inst. v. Argus Leader Media*, 139 S. Ct. 2356, 2364 (2019). The words of an authorizing statute must be read "in their context and with a view to their place in the overall statutory scheme." *Davis v. Mich. Dep't of Treasury*, 489 U.S. 803, 809 (1989); *K Mart Corp. v. Cartier, Inc.*, 486 U.S. 281, 291 (1988) ("In ascertaining the plain meaning of the statute, the court must look to the particular statutory language at issue, as well as the language and design of the statute as a

whole."). After all, a word's context in a statute dictates its meaning. *See Graham Cnty. Soil & Water Conservation Dist. v. United States ex rel. Wilson*, 559 U.S. 280, 289–90 (2010) (stating that "[s]tatutory language has meaning only in context" and that a court has a "duty to construe statutes, not isolated provisions" (alteration in original) (quotations omitted)).

Additionally, statutory interpretation is not an exercise in determining "the outer limits of [a word's] definitional possibilities." *See FCC v. AT&T Inc.*, 562 U.S. 397, 407 (2011) (alteration in original) (quoting *Dolan v. U.S. Postal Serv.*, 546 U.S. 481, 486 (2006)). Flowing from that principle, courts have generally looked with suspicion on "cryptic" delegations of authority. *See FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 160 (2000). Courts should generally be skeptical of agencies that seek to find "elephants in mouseholes" or otherwise seek to rely on tiny grants of authority to justify major actions. *See West Virginia v. EPA*, 597 U.S. 697, 746–47 (2022) (Gorsuch, J., concurring) (quoting *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 468 (2001)).

B. The DOT's authorization to promulgate performance measures is expressly limited to those listed in Section 150(c).

As detailed above, Congress created the NHPP to provide support for the condition and construction of the National Highway System. 23 U.S.C. § 119(a), (b)(1)–(2). The NHPP also ensures that investments of federal highway funds "are directed to support progress toward the achievement of performance targets" established in a state's asset-management plan. *Id.* § 119(b)(3). The NHPP further provides funding to states for eligible projects. *Id.* § 119(d).

But Congress did not want to invest blindly in the highway system. As a result, Congress ordered the DOT to establish certain performance measures and targets, which "provide a means to the most efficient investment of [f]ederal transportation funds." *Id.*

§ 150(a), (c). The states, in turn, must track those measures for use in NHPP-fund investment and set targets based off those measures. *See id.* § 150(c)–(d). States must then submit reports to the DOT detailing, among other things, their progress toward achieving those targets. *Id.* § 150(e).

Critically, however, Congress did not authorize the DOT to create any performance measure it deemed appropriate. To the contrary, Congress expressly limited the permissible performance measures to only those specifically enumerated in the statute. *Id.* § 150(c)(2). The statute provides that, "[i]n carrying out paragraph (1) [establishing performance measures and standards], the Secretary shall . . . limit performance measures only to those described in this subsection[—that is, subsection 150(c)]." *Id.* § 150(c)(2)(C).

Thus, Congress provided a clearly delineated and expressly limited grant of authority to the DOT in establishing performance measures, and the Court must be faithful to that limitation. And precedent makes clear that when Congress provides an agency with a limited grant of authority, courts should be hesitant to adopt an agency's expansive interpretation of its own power. *See Biden v. Nebraska*, 143 S. Ct. 2355, 2368–71 (2023) (interpreting a limiting provision to require a strict reading of a statute's authorization). Recognizing this limitation, the DOT cites Section 150(c)(3)(A)(ii) as authority to establish the GHG emissions measure, but Section 150(c)'s limited, precise statutory language cannot bear the weight of the DOT's proposed expansive interpretation.[11]

[11] Although the Court interprets Section 150's scope of authority in light of this express limitation, the Court does not rely on the major-questions doctrine. The plaintiffs invite the Court to invoke the doctrine because, in their view, the states will incur significant costs to comply with the 2023 Rule. *See* Dkt. No. 19 at 21–22; *see also West Virginia*, 597 U.S. at 716, 724–32 (discussing the major-questions doctrine). The defendants counter that the doctrine does not apply because the costs are limited to around $13 million. *See* Dkt. No. 25 at 20–21. But because the statutory language itself makes clear that the DOT lacked authorization to promulgate the 2023 Rule, the Court need not

C. Section 150's text makes clear that "the performance of the Interstate System . . . [and] the National Highway System" focuses on the system's effectiveness in facilitating travel, commerce, and national defense—not the environmental performance of vehicles using that system.

The Court's task is to determine the scope of Section 150's authorized performance measures. In doing so, the Court's analysis begins with the statute's plain language. "In matters of statutory interpretation, text is always the alpha." *In re DeBerry*, 945 F.3d 943, 947 (5th Cir. 2019); *see also United States v. Koutsostamatis*, 956 F.3d 301, 306 (5th Cir. 2020) ("In statutory interpretation, we have three obligations: '(1) Read the statute; (2) read the statute; (3) read the statute!'" (quoting Henry J. Friendly, *Benchmarks* 202 (1967))). As a result, the Court must determine whether "measures for [s]tates to use to assess . . . the performance of the Interstate System . . . [and] the National Highway System" may appropriately include measures regarding GHG emissions from vehicles using the highways. *See* 23 U.S.C. § 150(c)(3)(A)(ii)(IV)–(V). In Texas's view, "performance," by its plain language, cannot authorize the GHG emissions measure. *See* Dkt. No. 19 at 18–22. The DOT, in contrast, argues a more expansive reading and asserts that "performance" encompasses the highway systems' environmental performance, including the GHG emissions from vehicles using the systems. *See* Dkt. No. 25 at 15–22.

After carefully examining the statutory language and the parties' arguments, the Court concludes that the relevant statutory provisions do not authorize the DOT's GHG emissions measure. Four reasons support this conclusion. First, the key terms' definitions focus on the infrastructure's effectiveness at achieving its purposes and not on the

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resolve whether the issue presented constitutes a "major question." If the doctrine applied, given its requirement of "clear congressional authorization," *see West Virginia*, 597 U.S. at 732, the Court's conclusion would be especially apparent.

environmental impact of vehicles using the infrastructure. Second, all of the related performance measures in Section 150(c)(3) focus on physical infrastructure, which makes it less likely that the DOT's broad interpretation is accurate. Third, the DOT's proposed interpretation would render other portions of the statute superfluous. And fourth, Section 150(b)'s list of—and language related to—the national goals of the federal-aid highway program indicate that "performance" of the system does not include environmental performance. Thus, the statutory text demonstrates that "measures . . . to assess . . . the performance of the Interstate System . . . [and] the National Highway System" do not include GHG emissions from vehicles using the systems.

i. The definitions of "performance," "National Highway System," and "Interstate System" do not encompass the environmental impact of vehicles.

Section 150 does not define "performance," nor does it point to a particular provision elsewhere in the code that does. *See* 23 U.S.C. § 150. Title 23 does contain a definitions provision, but that section does not define "performance." *See* 23 U.S.C. § 101. Where Congress does not define a term within a statute, a court should "interpret the words consistent with their ordinary meaning at the time Congress enacted the statute." *Wis. Cent. Ltd. v. United States*, 585 U.S. 274, 277 (2018) (cleaned up) (quoting *Perrin v. United States*, 444 U.S. 37, 42 (1979)).

Heeding that advice, the Court will look to a dictionary definition of "performance" at the time of statutory enactment. *See Taniguchi v. Kan Pac. Saipan, Ltd.*, 566 U.S. 560, 566–67 (2012) (noting that "[w]hen a term goes undefined in a statute, [a court should] give the term its ordinary meaning," which may be discerned from dictionaries in use at the time of enactment). Section 150 is a relatively recent statute—its first version became law in

2012, and it was subsequently amended in 2015. *See* 88 Fed. Reg. at 85365 (describing the history of Section 150).[12] At the time of the statute's enactment, the dictionary definition of "performance" was, in relevant part, "the competence or effectiveness of a person or thing in performing an action; *spec.* the capabilities, productivity, or success of a machine, product, or person when measured against a standard."[13] *Performance*, Oxford English Dictionary, https://perma.cc/6VPX-2JLS (last visited Mar. 26, 2024). The term focuses on an identified object's or person's capability. *See id.* Applying the definition to the statute at issue, Congress authorized the DOT to create a measure to assess "the [competence or effectiveness]" of the identified objects—the Interstate System and National Highway System.

Because the DOT may properly measure the competence or effectiveness of the Interstate and National Highway Systems, the Court's analysis likewise depends on the scope of the latter terms. Thankfully, Congress provided precise definitions for "Interstate System," "National Highway System," and "Highway." 23 U.S.C. § 101(11), (12), (16). As detailed below, the critical point is that each definition relates to transportation infrastructure and describes their purposes as facilitating travel, commerce, and national defense. *See id.*; *see also id.* § 103(b) (defining "National Highway System"), (c) (defining "Interstate System").

Title 23's definition of "highway" includes a long list of transportation infrastructure, including:

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[12] *See also supra* note 4.

[13] Given the relative recency of Section 150's enactment, the Court uses a modern dictionary. *See* Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 419, 423 (2012). Further, neither party has directed the Court to a particular definition that would contradict this approach.

> (A) a road, street, and parkway;
>
> (B) a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure including public roads on dams, sign, guardrail, and protective structure, in connection with a highway; and
>
> (C) a portion of any interstate or international bridge or tunnel and the approaches thereto, . . . including such facilities as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel.

Id. § 101(11).

"National Highway System" is defined as "the Federal-aid highway system described in [S]ection 103(b)." *Id.* § 101(16). In turn, Section 103(b) defines "National Highway System" as "the highway routes and connections to transportation facilities" that serve three purposes—none of which relate to environmental emissions or impact:

> (A) serve major population centers, international border crossings, ports, airports, public transportation facilities, and other intermodal transportation facilities and other major travel destinations;
>
> (B) meet national defense requirements; and
>
> (C) serve interstate and interregional travel and commerce.

Id. § 103(b)(1). The definition specifies that various components are included in the National Highway System, like "urban and rural principal arterial routes." *Id.* § 103(b)(2).

Unsurprisingly, "Interstate System" is likewise defined as certain transportation infrastructure and does not include environmental emissions or impact. The term "means the Dwight D. Eisenhower National System of Interstate and Defense Highways described in [S]ection 103(c)." *Id.* § 101(12). And Section 103(c) specifies that the Interstate System "consists of highways designed, located, and selected in accordance with this paragraph." *Id.* § 103(c)(1)(A). Moreover, the interstate highways must be located to fulfill three purposes:

(i) to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers;

(ii) to serve the national defense; and

(iii) to the maximum extent practicable, to connect at suitable border points with routes of continental importance in Canada and Mexico.

Id. § 103(c)(1)(C).

Synthesizing the various definitions brings into focus the proper scope of Section 150's congressional authorization for the DOT to create "measures . . . to assess . . . the performance of the Interstate System . . . [and] the National Highway System." The performance of these transportation systems turns on their "competence or effectiveness" at achieving the specified aims of each of these roadways. For the National Highway System's performance, the DOT may establish measures to assess the "competence or effectiveness" of "the highway routes['] and connections[']" ability to "serve major population centers," "meet national defense requirements," and "serve interstate and interregional travel and commerce." *Id.* §§ 101(16); 103(b); 150(c)(3). For the Interstate System's performance, the DOT may establish measures to assess the "competence or effectiveness" of the interstate highways' ability to directly connect "metropolitan areas, cities, and industrial centers," "serve the national defense," and "connect at suitable border points with routes of continental importance in Canada and Mexico." *Id.* §§ 101(12); 103(c); 150(c)(3).

Nothing within these definitions or the statutory goals of the National Highway System or Interstate System indicate that GHG emissions are a relevant metric. The focus is on how well the highways, routes, and connections within the systems are achieving their goals of facilitating travel, commerce, and the national defense. The statute's plain language does not include within the scope of the National Highway System or the

Interstate System the environmental performance or impact of the vehicles that use those systems. As a result, the very definitions of the relevant terms undercut the DOT's argument and proposed expansive definition, and the statute does not authorize the GHG emissions measure.

ii. Section 150(c)(3)'s remaining performance measures relate to physical infrastructure, further indicating that these measures focus on the highways' effectiveness, not the vehicles' environmental impact.

When interpreting words with disputed meanings, courts should consider words in light of the terms surrounding them. *See Dubin v. United States*, 599 U.S. 110, 118 (2023) (citing *Leocal v. Ashcroft*, 543 U.S. 1, 9 (2004)). After all, "a word is known by the company it keeps." *Yates v. United States*, 574 U.S. 528, 543–44 (2015) (plurality opinion). Thus, "[w]hen several nouns or verbs or adjectives or adverbs—any words—are associated in a context suggesting that the words have something in common, they should be assigned a permissible meaning that makes them similar." Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 195 (2012). And, relevant in this case, "[t]he canon especially holds that 'words grouped in a list should be given related meanings.'" *Id.* at 195 & n.2 (quoting *Third Nat'l Bank in Nashville v. Impac Ltd.*, 432 U.S. 312, 322 (1977)).

Here, the company "performance of the Interstate System . . . [and] the National Highway System" keeps is uniformly focused on the physical condition of transportation infrastructure. The relevant subsection provides that the DOT shall establish measures to assess:

> (I) the condition of pavements on the Interstate [S]ystem;
>
> (II) the condition of pavements on the National Highway System (excluding the Interstate);

(III) the condition of bridges on the National Highway System;

(IV) the performance of the Interstate System; and

(V) the performance of the National Highway System (excluding the Interstate System)[.]

23 U.S.C. § 150(c)(3)(A)(ii).

The clear focus of Section 150(c)(3)(A)(ii) on the physical structures of the interstate and national-highway systems demonstrates that "performance" is also focused on those physical structures. Congress authorized the DOT to measure the system's physical infrastructure itself and how well that physical infrastructure meets its objectives. Three of the five measures relate expressly to physical conditions—the condition of interstate pavement, the condition of highway pavement, and the condition of bridges. These are tactile, material items. Given these closely associated measurements, the two immediately following measurements—interstate and national-highway performance—are likewise limited to the systems' physical infrastructure and its ability to meet its objectives.

The DOT's expansive reading of "performance" to include CO_2 emissions from vehicles ignores its context in this list of tactile measurements, which favors a more confined reading. Unlike interpreting the list of items in relation to one another, the DOT's proposed interpretation would "generate confusion or unpredictability," like a list of "fire-engine red, light pink, maroon, *navy blue*, or colors that otherwise involve shades of red." *Cf. Johnson v. United States*, 576 U.S. 591, 603 (2015) (emphasis in original) (quotation omitted). Construing "performance" following the specified "condition of pavements" and "bridges" as pertaining to the performance of the physical structure maintains the unified nature of the statute. But if "performance" instead encompasses things as vast as the GHG emissions of vehicles using the interstate and national-highway systems, the provision's scope is

unfettered—it introduces navy blue into a list otherwise clearly constrained to ordinary reds. *See Johnson*, 576 U.S. at 603. Given all these considerations, the Court concludes that the measurements are associated with one another and should be interpreted harmoniously and in relation to one another. *See Yates*, 574 U.S. at 543–44 (plurality opinion).

That understanding is confirmed when examining the rest of the statute and related statutes because "condition" and "performance" are often grouped together. *See* 23 U.S.C. § 150(e)(1) (requiring that states report on "the condition and performance of the National Highway System in the [s]tate"); *id.* § 119(b)(1) (stating that a purpose of the NHPP is "to provide support for the condition and performance of the National Highway System"); *id.* § 119(e)(2) (requiring a state's asset-management plan to include strategies "leading to a program of projects that would make progress toward achievement of the [s]tate targets for asset condition and performance of the National Highway System"). This frequent pairing further demonstrates that "condition" and "performance" are related and bear on each other's meaning within Section 150. *See id.* §§ 119, 150. Because "condition" is focused on the physical attributes of the interstate and national-highway systems, the text indicates that "performance" is likewise tied to the physical infrastructure. *See id.*

Further, this interpretation avoids the contradiction with the statute's express limitation on the number of authorized performance measures that would result from the DOT's position. "The provisions of a text should be interpreted in a way that renders them compatible, not contradictory." Scalia & Garner, *supra*, at 180. Section 150 speaks in mandatory, limiting language in providing that the DOT "Secretary shall . . . limit performance measures only to those described in this subsection." 23 U.S.C. § 150(c)(2)(C). But the DOT's view would untether the limitation from the interstate and national-highway

systems' infrastructure, instead permitting the DOT to require states to measure anything that happens to use or relate in any way to those systems. And the DOT does not dispute this expansive view. In the 2023 Rule, the DOT notes that, while its authority to impose "performance" measures is not unlimited, the only limitation is the scope of the interstate and national-highway systems. *See* 88 Fed. Reg. at 85367. In other words, the only limit on permissible performance measures is that they can only apply to certain roads and things coming into contact with or relating to those roads—not that the measures themselves are limited to certain subjects. *See id.* Given the expansive systems at issue and the number of things and people that relate in some way to them, this is no limit at all. The agency's interpretation would figuratively open the floodgates and effectively eliminate the strict limit that Congress placed on the agency's authority to promulgate measures. *See* 23 U.S.C. § 150(c)(2)(C). But once the Court interprets the relevant terms in relation to the associated list, the contradiction falls away.

iii. The DOT's proposed interpretation would render other portions of the statute superfluous.

Although the analysis thus far has focused on Section 150(c)(3)'s performance measures, the statute mandates measures for three additional topics—highway safety, congestion mitigation and air quality, and national freight movement. 23 U.S.C. § 150(c)(4)–(6). And, regarding air quality, Congress specifically directs the DOT to establish measures relating to "on-road mobile source emissions." *Id.* § 150(c)(5). The plaintiffs argue that this provision cabins the DOT's authority to establish performance measures to ozone, carbon monoxide, and particulate matter through its tie to Section 149. *See* Dkt. No. 19 at 20. The defendants counter that the provision does not prohibit the DOT from otherwise adopting other measures to combat CO_2 emissions. *See* Dkt. No. 25 at 20.

The statutory text and settled canons of statutory interpretation support the plaintiffs' argument.

Section 150(c)(5) provides that, "[f]or the purpose of carrying out [S]ection 149, the Secretary shall establish measures for [s]tates to use to assess . . . on-road mobile source emissions." 23 U.S.C. § 150(c)(5). Section 149 codifies the "congestion mitigation and air quality improvement program" (CMAQ), which allows states to obligate funds apportioned to it under Title 23 to certain programs that relate to road congestion and air quality. *See id.* § 149. Under Section 149, the states are authorized to regulate on-road mobile source emissions of ozone, carbon monoxide, and particulate matter. *See id.* § 149(b). That section does not authorize programs to address CO_2 emissions, which the parties do not dispute. *See id.*

"When presented with two plausible readings of a regulatory text, this court common-sensically . . . prefers the reading that does not render portions of that text superfluous." *Exelon Wind 1, L.L.C. v. Nelson*, 766 F.3d 380, 399 (5th Cir. 2014). As Justice Scalia and Bryan Garner explain: "If possible, every word and every provision is to be given effect (*verba cum effectu sunt accipienda*). None should be ignored. None should needlessly be given an interpretation that causes it to duplicate another provision or to have no consequence." Scalia & Garner, *supra*, at 174 (footnote omitted).

Here, the 2023 Rule seeks to have states establish targets for and measure GHG emissions generated by "on-road mobile sources." 88 Fed. Reg. at 85364. But instead of ozone, carbon monoxide, and particulate matter, it seeks to regulate CO_2 emissions. *See id.* In citing to Section 150(c)(3)(A)(ii)(IV)–(V), the agency claims another source of authority to regulate on-road mobile source emissions. *Compare* 23 U.S.C. § 150(c)(3)(A)(ii)(IV)–(V),

with id. § 150(c)(5). In effect, the DOT claims that both sections authorize the regulation of on-road mobile source emissions. But if air quality and "on-road mobile source emissions" were contemplated by Congress when it used "performance" in Section 150(c)(3)(A)(ii), then the authorization found in Section 150(c)(5) would be superfluous. If "performance" included the broad authority to promulgate measures related to on-road mobile source emissions, Congress would not have needed to separately authorize such measures later in the statute.[14] *See id.* § 150(c). The DOT's "reading is thus at odds with one of the most basic interpretive canons, that a statute should be construed so that effect is given to all its provisions, so that no part will be inoperative or superfluous, void or insignificant." *Corley v. United States*, 556 U.S. 303, 314 (2009) (cleaned up) (quoting *Hibbs v. Winn*, 542 U.S. 88, 101 (2004)). Congress had no need to duplicate the provision of this authority in two separate subsections, and it is especially unlikely that it created an expansive, duplicative authorization after limiting the universe of possible measures "only to those described in this subsection." 23 U.S.C. § 150(c)(2)(C).

Moreover, Section 150(c)(5)'s on-road mobile source emission standard is precisely drafted to cover only certain pollutants, and it excludes CO_2. *See id.* § 149(b). Nothing in the statute's text indicates that, despite the precision in (c)(5) and the limitation of permissible measures in (c)(2), Congress wanted the DOT to go beyond (c)(5) and create

[14] The Court recognizes that CMAQ might cover a "transportation project or program" that is not part of the Interstate System or National Highway System. *See* 23 U.S.C. § 149(b). For such a project, an on-road mobile source emissions measure might be promulgated under Section 150(c)(5) that would not fit under (c)(3). However, given the breadth of the definitions of the Interstate System and National Highway System, *see supra* Section 4.C.i, there is undoubtedly a very large overlap between those systems and any project covered by CMAQ, rendering (c)(5) superfluous. For that reason, and for the other textual and contextual reasons detailed in this order, this aspect of CMAQ does not materially alter the Court's analysis.

additional measures for on-road source emissions based on the more general authorization related to "the performance of the Interstate System . . . [and] the National Highway System." Additionally, the agency fails to point to how, as a matter of logic, its interpretation of "performance" could encompass on-road mobile source emissions related to CO_2 but not carbon monoxide. *See generally* 88 Fed. Reg. at 85364. Congress chose to use "on-road mobile source emissions" in one place—which authorized measures relating to ozone, carbon monoxide, and particulate matter. *See* 23 U.S.C. § 150(c)(5). The Court will not interpret (c)(3) in a way that renders (c)(5) superfluous.[15]

And to the extent the DOT asserts that, despite the duplication in (c)(3) and (c)(5), Congress could nevertheless detail the air-quality program specified in subsection (c)(5), that assertion runs roughshod into the negative-implication canon. That canon teaches that "[t]he expression of one thing implies the exclusion of others." Scalia & Garner, *supra*, at 107. Congress specifically addressed an air-quality program and on-road mobile source emissions in (c)(5), and no party argues that this subsection can authorize the GHG

[15] Relatedly, the plaintiffs argue that legislative history provides support for their position that Congress deliberately chose to exclude performance measures related to CO_2 emissions. *See* Dkt. No. 19 at 18–19. Because of the limited analytical benefit derived from legislative history, the Court finds that argument unconvincing. After all,

> Apart from th[e] political problem [that the legislature makes law only by voting on proposed statutes] and a torrent of practical problems . . . the use of legislative history poses a major theoretical problem: It assumes that what [a court is] looking for is the intent of the legislature rather than the meaning of the statutory text. That puts things backwards. To be "a government of laws, not of men" is to be governed by what the laws *say*, and not by what the people who drafted the laws intended.

Scalia & Garner, *supra*, at 375 (emphasis in original). As stated more succinctly by Justice Holmes: "We do not inquire what the legislature meant; we ask only what the statute means." Oliver Wendell Holmes, *The Theory of Legal Interpretation*, 12 Harv. L. Rev. 417, 419 (1899) (quoted with approval in *Schwegmann Bros. v. Calvert Distillers Corp.*, 341 U.S. 384, 397 (1951) (Jackson, J., concurring)).

emissions measure. *See generally* Dkt. Nos. 19; 25. The implication is clear. Congress's choice to address emissions in (c)(5), and to do so in a way that cannot authorize the 2023 Rule, implies the exclusion of other on-road mobile source emission measurements, including GHG emissions. *See Bartenwerfer v. Buckley*, 598 U.S. 69, 78 (2023) ("'[W]hen Congress includes particular language in one section of a statute but omits it in another section of the same [a]ct,' [courts] generally take the choice to be deliberate." (quoting *Badgerow v. Walters*, 596 U.S. 1, 11 (2022))); *see also* Dkt. No. 28 at 10–11.

In an attempt to establish otherwise, the defendants confuse the source of an agency's power to act. They assert that the 2023 Rule is justified despite Section 150(c)(5)'s specific mention of on-road emissions because "Congress did not include any language prohibiting [the DOT] from establishing other measures related to emissions for the NHPP." Dkt. No. 25 at 20. This gets things backwards. An agency must have statutory authorization to enact a rule; the absence of a statutory prohibition does not indicate that such authority has been given. *See City of Arlington*, 569 U.S. at 297; *see also VanDerStok*, 86 F.4th at 187. Thus, the lack of a statutory prohibition provides no support for the defendants' position.

iv. Section 150(b)'s list of national goals indicates that "performance" of the interstate and national-highway systems does not include environmental performance.

The DOT relies heavily on the national goals articulated in Section 150(b) to justify its interpretation of "performance"—particularly the goal of environmental sustainability. *See* Dkt. No. 25 at 15–19. The plain language of the provision and the statutory structure, however, undermine the agency's interpretation. While environmental sustainability is undoubtedly a statutory goal, it does not follow that, as a result, measuring the interstate

and national-highway systems' "performance" includes the GHG emissions measure. To the contrary, environment-related measures are included in Section 150(c)(5), and environmental sustainability is also addressed in various other sections of the Title 23. Thus, the DOT cannot properly use the broad national goal mentioned in Section 150(b) to shoehorn the GHG emissions measure into Section 150(c)'s limited, specific list of performance measures that the states must track and report.

Turning to the goals themselves, the Court recognizes that the NHPP aims to "provide a means to the most efficient investment of [f]ederal transportation funds by refocusing [the program] on national transportation goals." 23 U.S.C. § 150(a). These goals include (1) safety; (2) infrastructure condition; (3) congestion reduction; (4) system reliability; (5) freight movement and economic vitality; (6) environmental sustainability; and (7) reduced project delivery delays. *Id.* § 150(b). Critically here, the environmental-sustainability goal is "[t]o enhance the performance of the transportation system while protecting and enhancing the natural environment." *Id.* § 150(b)(6).

Contrary to the DOT's contention, the environmental-sustainability goal does not authorize the 2023 Rule for three reasons. First, and most simply, neither GHG emissions nor environmental sustainability more broadly is included as one of the categories of performance measures in Section 150(c)(3). Those five measures focus on the condition of pavements, the condition of bridges, and the competence or effectiveness of the interstate and national-highway systems. *Id.* § 150(c)(3)(A)(ii)(I)–(V). In contrast, the environment-related goal relates to the measures detailed in (c)(5)'s air-quality program. Similarly, other national goals have related and easily identified measures. The safety goal corresponds to (c)(4)'s "[h]ighway safety improvement program." The infrastructure-condition and system-

reliability goals correspond to (c)(3)'s infrastructure and efficiency-related measures. Congestion reduction corresponds to (c)(5)'s "[c]ongestion mitigation" program. The freight-movement goal corresponds to (c)(6)'s "[n]ational freight movement" measures.

But not every goal appears to have a corresponding measure. Specifically, the goal of reducing project-delivery delays seeks to reduce costs of federal highway projects by "eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices." *Id.* § 150(b)(7). Despite this goal, none of the specified performance measures in subsection (c) address costs or project delays, which indicates that the states do not necessarily need to measure and report on every aspect of the national goals. Because the environmental-sustainability goal is not included in (c)(3)'s authorized measures, that provision cannot authorize the GHG emissions measure.

Second, the language of the environmental-sustainability goal itself undermines the DOT's position that it may be measured as an aspect of "the performance of the Interstate System . . . [and] the National Highway System." Again, the national goal is to "enhance the performance of the transportation system while protecting and enhancing the natural environment." *Id.* § 150(b)(6). Pared down, the goal is to do one thing (enhance system performance) while also doing another thing (enhance the environment). By separating the two aspirations with the conjunction "while," the statutory language distinguishes "the performance of the transportation system" from "protecting and enhancing the natural environment." *See id.* Given that the Court must "give effect to every word that Congress used in the statute," *Lowe v. SEC*, 472 U.S. 181, 207 n.53 (1985), the Court concludes that, within the context of Section 150, the "performance of the transportation system" is distinct

from "protecting and enhancing the natural environment." *See* 23 U.S.C. § 150(b). To include "protecting and enhancing the natural environment" in the definition of "the performance of the transportation system"—and by extension, the performance of the Interstate System and the National Highway System—would render portions of the environmental-sustainability goal's provision redundant. *See id.* If the DOT's interpretation were correct, the national goal could be restated as "to protect and enhance the natural environment while protecting and enhancing the natural environment." Adopting such a nonsensical interpretation would create a redundancy in the statute—something precedent cautions the Court against. *See Williams v. Taylor*, 529 U.S. 362, 404 (2000) ("It is, however, a cardinal principle of statutory construction that [a court] must 'give effect, if possible, to every clause and word of a statute.'" (quoting *United States v. Menasche*, 348 U.S. 528, 538–39 (1955))). Nor can the Court assume that "performance" as used in Section 150(b)(6) is different than "performance" as used within Section 150(c)(3)(A)(ii) absent some evidence in the text supporting different readings. *See Mohasco Corp. v. Silver*, 447 U.S. 807, 826 (1980) (concluding that a court cannot unreasonably give a word a different meaning across the same section of a statute).

Third, the environmental-sustainability goal is more obviously and naturally accounted for in other portions of the statute. As discussed elsewhere in this Order, other portions of the statutory scheme shed light on how programs authorized under Section 119, Section 150, and elsewhere in Title 23 further environmental sustainability. *See supra* Section 4.C.iii; *infra* Section 4.D. For instance, Section 119 allows funding for specific projects that support the goal of protecting and enhancing the natural environment. *See, e.g.*, 23 U.S.C. § 119(d)(2)(M) (authorizing funding for projects that accomplish

"[e]nvironmental restoration and pollution abatement in accordance with [S]ection 328"). And within Section 150 itself, subsection (c)(5) allows the defendants to promulgate performance measures related to traffic congestion and non-CO_2 types of on-road mobile source emissions. *See id.* §§ 149(b), 150(c)(5). Each of those sections supports the national goal of environmental sustainability.

Given that (1) environmental measures are not included in Section 150(c)(3)'s performance measures; (2) the language of the environment-sustainability goal contrasts system performance with environmental enhancement; and (3) environmental sustainability is expressly accounted for in other portions of Title 23, (c)(3)'s infrastructure-specific measures do not include measures of environmental performance.

D. Section 150's statutory context demonstrates that "performance" of the interstate and national-highway systems is not broadly defined to include the GHG emissions from cars using the system.

In light of the above analysis, the plain language of Section 150 alone demonstrates that the 2023 Rule exceeded the DOT's authority. If any doubt remains, however, the broader statutory context proves the same. "Context is a primary determinant of meaning." Scalia & Garner, *supra*, at 167; *see also Graham Cnty. Soil & Water Conservation Dist.*, 559 U.S. at 289–90. Because a statute "typically contains many interrelated parts that make up the whole," "[t]he entirety of the document thus provides the context for each of its parts." Scalia & Garner, *supra*, at 167.

Here, the context reveals that Section 150—and the performance measures at issue—are connected to Section 119. Congress instructed in Section 150 that (c)(3)'s performance measures exist expressly "for the purpose of carrying out [S]ection 119." 23 U.S.C. § 150(c)(3)(A). Thus, Section 119 and its purposes aid the Court in determining the scope of

Section 150's permissible performance measures, and they provide further support for the Court's conclusion.

i. Section 119(b)'s purposes distinguish between the highway system's performance and the system's resilience to avoid environmental disasters.

Section 119 requires the DOT to implement the NHPP and enumerates four purposes for that program. 23 U.S.C. § 119(b). Specifically, the statute provides that "[t]he purposes of the national highway performance program" are:

> (1) to provide support for the condition and performance of the National Highway System;
>
> (2) to provide support for the construction of new facilities on the National Highway System;
>
> (3) to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in an asset management plan of a [s]tate for the National Highway System; and
>
> (4) to provide support for activities to increase the resiliency of the National Highway System to mitigate the cost of damages from sea level rise, extreme weather events, flooding, wildfires, or other natural disasters.

Id.

Two aspects of these purposes aid the Court. First, the statute lists "performance of the National Highway System" as a separate purpose from "mitigat[ing] the cost of damages from" natural disasters. *Cf. id.* § 119(b)(1), (b)(4). As distinct purposes using different terminology, the Court construes them as having independent meaning. *See Williams*, 529 U.S. at 404. If the "performance" of the system included its resiliency to mitigate the cost from environmental impacts, then (b)(4) would be redundant. Once again, the Court will not interpret "performance" in a way that renders other portions of the statute superfluous. *Exelon Wind 1, L.L.C.*, 766 F.3d at 399. This is yet another indicator that the

"performance" of the highway system means the efficiency of the infrastructure itself and not its "environmental performance."

Second, the statutory purpose related to natural disasters demonstrates that Section 119's environmental focus is increasing the system's "resiliency . . . to mitigate the cost of damages" resulting from potential disasters—not the potential underlying cause of those disasters. 23 U.S.C. § 119(b)(4). Congress seeks to support activities that make the National Highway System able to withstand or recover quickly from things like sea-level rise, extreme weather, flooding, and wildfires. *See id.* That is, the purpose is not about mitigating the causes of the damage to the system, but about mitigating the damage to the system. *See id.* Further, when damage does occur, the provision is directed at ensuring that the system may survive that damage. *See id.* But environmental inputs, like vehicle emissions, are omitted from the list, and it is unclear how measuring GHG emissions could make the system itself more resilient to natural disasters when they occur. Thus, Section 119(b)(4) is yet another indicator that GHG emissions are not properly included in Section 150(c)(3)'s scope.

ii. In defining eligible projects, Section 119(d)(1)(A)'s list of "performance goals" focuses on the infrastructure's capabilities; it does not mention environmental sustainability.

As detailed in Part 1, to be eligible for NHPP funding, a project must meet certain criteria. *Id.* § 119(d). First, funds "may be obligated only for a project on an eligible facility that" supports progress in achieving the national performance goals for improving "infrastructure condition, safety, congestion reduction, system reliability, or freight movement." *Id.* § 119(d)(1)(A). Second, the project must be "consistent with [S]ections 134

and 135."[16] *Id.* § 119(d)(1)(B). Third, the project must be for one or more defined purposes. *Id.* § 119(d)(2).

It is telling that, in defining which projects are eligible for funding, Section 119's "national performance goals" do not mention environmental sustainability. Each of the goals—infrastructure condition, safety, reducing congestion, system reliability, and freight movement—focuses on the system's infrastructure and efficiency. These goals, which Section 150(c)(3) exists to carry out, are consistent with the Court's interpretation of "performance of the Interstate System . . . [and] the National Highway System" as focusing on the system's physical condition and efficiency. And they undermine the DOT's more expansive interpretation to include "environmental performance."

[16] The Court notes that Sections 134 and 135 each contain provisions that require a state to assess the environmental impact of its transportation planning. *See, e.g.*, 23 U.S.C. § 134(a) (noting that "[i]t is in the national interest" to "minimiz[e] transportation-related fuel consumption and air pollution"); *id.* § 135(d)(1)(E) (noting that an aspect of a state's plan should include "consideration and implementation of projects" that "protect and enhance the environment"). While this language requires states to consider the environmental impact of transportation decisions in their planning processes, that consideration is wholly divorced from whether Section 150(c) authorizes a GHG emissions measure. The performance goals in Section 119(d)(1)(A) exclude environmental sustainability—so NHPP funding is not conditioned on a project accomplishing progress toward that goal. And projects may of course be consistent with the planning requirements of Sections 134 and 135 without achieving progress towards an environmental-sustainability national goal. Finally, to assert that the language in Sections 134 and 135 indicates that "performance" includes "environmental performance" ignores the more relevant statutory language present in both Section 150 and Section 119. Finding authority to promulgate the GHG emissions measure in Sections 134 and 135—two sections removed from Section 150—would be the sort of "cryptic" authority that the Supreme Court has viewed with suspicion. *See Brown & Williamson Tobacco Corp.*, 529 U.S. at 160. The defendants' references to 23 U.S.C. § 101(b)(3)(G) for authorization fall into the same category. *See* Dkt. No. 25 at 17; *see also* 23 U.S.C. § 101(b)(3)(G) (providing in a declaration of policy that "transportation should play a significant role in promoting economic growth, improving the environment, and sustaining the quality of life").

iii. Section 119(d)(2)'s list of eligible project purposes specifies multiple environmental purposes; none include GHG emission reduction.

Assuming that a project can meet the threshold eligibility requirements found in Section 119(d)(1), Section 119(d)(2) enumerates a variety of purposes for which funds may be directed. It includes 19 separate purposes for which funds may be authorized. Nine are explicitly tied to the construction or maintenance of infrastructure on the National Highway System, Interstate System, and related facilities. *See id.* § 119(d)(2)(A)–(C), (F)–(H), (L), (P), (Q). Two more relate to the inspection of and the training of inspectors for the National Highway System's infrastructure. *See id.* § 119(d)(2)(D)–(E). Several more purposes relate to safety and operations. *See id.* § 119(d)(2)(I)–(K), (S). Most relevant here, four of the permissible purposes relate to the environment. *See id.* § 119(d)(2)(M)–(O), (R).

Like all the provisions found in Section 119(d)(2), those environmental provisions only authorize funds for specific, narrow activities. Section 119(d)(2)(M) provides that funds may be used towards "[e]nvironmental restoration and pollution abatement in accordance with [S]ection 328." *Id.* § 119(d)(2)(M). Section 328 provides for specific projects related solely to "minimiz[ing] or mitigat[ing] the impacts of any transportation project" funded by the NHPP. *See id.* § 328(a). Further, projects funded under subsection (M) are only allowed "to address water pollution or environmental degradation caused wholly or partially by a transportation facility." *Id.* Section 119(d)(2)(N) provides that funds may be used towards the "[c]ontrol of noxious weeds and aquatic noxious weeds and establishment of native species in accordance with [S]ection 329." *Id.* § 119(d)(2)(N). Section 329, in turn, deals with protecting plant systems specifically "related to transportation projects funded under this title." *Id.* § 329(a). It further lists discrete activities related to that goal that may be addressed through NHPP funding, such as the establishment

of plants for the abatement of water runoff and the control or elimination of plants that impede or impair a transportation system. *See id.* § 329(a)–(b). Section 119(d)(2)(O) provides that funds may go towards "[e]nvironmental mitigation efforts related to projects funded under this [S]ection, as described in [Section 119(g)]." *Id.* § 119(d)(2)(O). Section 119(g) allows funds for a variety of mitigation efforts, such as participating in mitigation banking or contributions to statewide and regional efforts to conserve natural habitats and wetlands. *See generally id.* § 119(g)(1)–(2). Section 119(d)(2)(R) permits funds to go towards "[r]esiliency improvements on the National Highway System, including protective features described in [Section 119(k)(2)]." *Id.* § 119(d)(2)(R). Section 119(k)(2) lists protective features for which NHPP funds may be used, including things like "raising roadway grades," "stabilizing slide areas," and "increasing the size or number of drainage structures." *Id.* § 119(k)(2).

What these environmentally related purposes all have in common is a strict limitation on how NHPP funds may be used. Section 119(d)(2)(M) is strictly limited to accomplishing the terms of Section 328. *See id.* §§ 119(d)(2)(M), 328. Section 119(d)(2)(N) is likewise controlled by Section 329. *See id.* §§ 119(d)(2)(N), 329. Section 119(d)(2)(O) is tied to the mitigation efforts described in Section 119(g)—which, while broad in nature, are limited to reactive purposes, as demonstrated by the term "mitigation." *See id.* § 119(d)(2)(O), (g)(1)–(2). Section 119(d)(2)(R) is limited to "resiliency" improvements, which are tied to constructive or reconstructive efforts to protect infrastructure. *See id.* § 119(d)(2)(R), (k)(2). Thus, the funds could not properly apply towards the reduction of GHG emissions.

Further, the explicit enumeration of these provisions evince that Congress specifically excluded other environmental purposes. *See NLRB v. SW Gen., Inc.*, 580 U.S. 288, 302 (2017). Importantly, none of the provisions touch a subject even remotely related to CO_2 emissions by vehicles on the Interstate System or National Highway System. They are each more limited in scope to particular aspects of environmental impacts of the interstate and national-highway systems. The specific inclusion of these authorized environmental purposes—and the omission of anything related to GHG emissions—further weigh against adopting the DOT's broad interpretation of "performance."

* * *

In sum, the statutory text indicates at every turn that measuring the "performance of the Interstate System . . . [and] the National Highway System" does not authorize measures of environmental performance. The definitions of "performance," "National Highway System," and "Interstate System" instruct that it is the roadways' efficiency and reliability in facilitating travel, commerce, and the national defense that may be measured. The associated measures in Section 150(c)(3) support this conclusion by focusing on the systems' physical infrastructure. The DOT's position, in contrast, would render other portions of the statute superfluous, and the national goal on which the DOT relies so heavily provides more support for the plaintiffs' position. Likewise, the statutory context consistently instructs the Court to reject the DOT's expansive interpretation. Thus, the Court concludes that the DOT's GHG emission measure is unauthorized by the statute.[17]

[17] In light of this conclusion, the Court need not, and does not, reach the plaintiffs' remaining claims that the 2023 Rule is arbitrary and capricious under the APA and also violates the Constitution's Spending Clause.

5. Remedy

Having concluded that the DOT promulgated the GHG emissions measure in excess of its statutory authority, the Court now turns to the proper remedy. The plaintiffs ask the Court to vacate the 2023 Rule. Dkt. No. 1 at 22. They defer to the Court as to whether the remedy should be party-specific. Dkt. No. 30 at 14. The defendants argue that any relief should be limited to the State of Texas. Dkt. No. 25 at 27. For the reasons described below and in light of binding precedent, the Court remands the rule with vacatur, a remedy that inherently sweeps broader than the parties.

A. The Rule is vacated and remanded.

Under the APA, a court shall hold unlawful and set aside agency action that is in excess of the statutory authority. 5 U.S.C. § 706(2). Section 706(2) goes "beyond the mere non-enforcement remedies available to courts" and "empowers courts to set aside—*i.e.*, formally nullify and revoke—an unlawful agency action." *Data Mktg. P'ship v. U.S. Dep't of Lab.*, 45 F.4th 846, 859 (5th Cir. 2022) (cleaned up) (quotation omitted). The 2023 Rule is such an agency action. *See* 5 U.S.C. § 551(13).

When awarding relief under Section 706(2), the Court may fashion the remedy in one of two ways: remand the rule with vacatur or remand the rule without vacatur. *See Texas v. United States*, 50 F.4th 498, 529–30 (5th Cir. 2022). The default rule is to vacate and remand the rule. *See Data Mktg. P'Ship*, 45 F.4th at 859. Remand without vacatur is an exceptional remedy that is appropriate where "there is at least a serious possibility that the agency will be able to substantiate its decision given an opportunity to do so." *See Texas v. Biden*, 10 F.4th 538, 560 (5th Cir. 2021) (quoting *Tex. Ass'n of Mfrs. v. U.S. Consumer Prod.*

Safety Comm'n, 989 F.3d 368, 389 (5th Cir. 2021)); *see Am. Bankers Ass'n v. Nat'l Credit Union Admin.*, 934 F.3d 649, 674 (D.C. Cir. 2019).

When deciding whether vacatur is appropriate, a court should consider two factors. First, the court should evaluate "the seriousness of the deficiencies of the action" or "how likely it is the agency will be able to justify its decision on remand." *Texas*, 50 F.4th at 529 (quoting *United Steel v. Mine Safety & Health Admin.*, 925 F.3d 1279, 1287 (D.C. Cir. 2019)). Second, the court should assess "the disruptive consequences of vacatur." *Id.* (quoting *United Steel*, 925 F.3d at 1287). "A strong showing of one factor may obviate the need to find a similar showing of the other." *Am. Bankers Ass'n*, 934 F.3d at 674.

Here, the 2023 Rule was promulgated in excess of the agency's statutory authority and is therefore substantially deficient. *See supra* Section 4. Further, the defendants have not explained how they would substantiate the 2023 Rule if given the opportunity to do so. Without any such explanation, and in light of the 2023 Rule's deficiencies, the Court finds it unlikely that the defendants will be able to justify their decision on remand. *See Texas*, 10 F.4th at 560.

Further, there are no disruptive consequences that would support remand without vacatur. As a preliminary matter, the defendants do not raise any arguments on this front, other than noting that setting the rule aside would affect other court decisions currently pending around the country. *See* Dkt. No. 25 at 27–29. But that argument is more relevant to the scope of relief, discussed below. The Court notes that the 2023 Rule's effective date has been delayed several times, and the first reporting deadline is not until March 29, 2024. *See* Dkt. No. 13 at 1. Thus, the Court cannot identify a disruptive effect that would be caused by vacating the Rule. After all, the 2023 Rule is not functionally effective at this

moment, and its predecessor has not been in effect since the 2018 repeal. Having considered both the applicable factors, the Court concludes that remanding the Rule with vacatur is appropriate.

B. Fifth Circuit precedent provides that setting aside an unlawful agency action under the APA nullifies and voids that action; thus, the Court does not limit the vacatur to the plaintiffs.

Having determined what relief is appropriate, the Court now considers the scope of relief. The defendants urge the Court to limit relief to the plaintiffs in this case. *See* Dkt. No. 25 at 27–29. For support, they cite a host of authority regarding the propriety of nationwide injunctions, *see id.* at 27–28, before addressing the scope of relief under the APA, *see id.* at 28–29. Here, the plaintiffs have requested vacatur, not an injunction, so the injunction-related case law misses the mark.

While injunctions can be narrowly tailored to the parties, vacatur "formally nullifies and revokes an unlawful agency action." *Data Mktg. P'ship*, 45 F.4th at 859 (cleaned up) (quotation omitted); *see also Vacate*, Black's Law Dictionary (11th ed. 2019) ("To nullify or cancel; make void; invalidate."); John Harrison, *Vacatur of Rules under the Administrative Procedure Act*, 40 Yale J. on Reg. Bull. 119, 120 (2023) ("[V]acatur is inherently universal."). In other words, "[u]nlike an injunction, which merely blocks enforcement, vacatur unwinds the challenged agency action." *Data Mktg. P'ship*, 45 F.4th at 859 (quoting *Driftless Area Land Conservancy v. Valcq*, 16 F.4th 508, 522 (7th Cir. 2021)). Vacatur therefore "erase[s] [the agency action] from the books." *See United States v. Texas*, 143 S. Ct. 1964, 1981 (2023) (Gorsuch, J., concurring in the judgment). And, if erased from the books, this relief cannot logically be limited to the plaintiffs—if the rule no longer exists, it does not exist at all. *See Data Mktg. P'ship*, 45 F.4th at 859; *Harmon v. Thornburgh*, 878 F.2d 484, 495 n.21 (D.C. Cir.

1989). While this sweeping result has led some jurists to criticize the grant of such relief, *see, e.g.*, *Texas*, 143 S. Ct. at 1980–86 (Gorsuch, J., concurring in the judgment), this Court is bound by Fifth Circuit precedent that has continually maintained that vacatur is "the appropriate remedy" by "default." *Data Mktg. P'ship*, 45 F.4th at 859; *Cargill v. Garland*, 57 F.4th 447, 472 (5th Cir. 2023) (en banc), *cert. granted*, 144 S. Ct. 374 (2023).

To be sure, vacatur's status as the default rule does not mean the Court is without discretion to choose "a more limited remedy" if appropriate. *See Cargill*, 57 F.4th at 472. But a more limited remedy is not party-specific vacatur. It is instead some other kind of remedy—"injunctive, declarative, or otherwise." *See id.* The present predicament is that there is no other clear, more limited remedy requested by the plaintiffs that the Court could grant here that would redress the plaintiffs' injury. *See* Dkt. No. 18 at 2. While the plaintiffs previously sought injunctive relief, they withdrew that request before the defendants had an opportunity to respond. Dkt. Nos. 9; 16. Of course, the Court has discretion in fashioning relief, even if not requested by a party, Fed. R. Civ. P. 54(c), but that relief must have been "tested adversarially, tried by consent, or at least developed with meaningful notice to the defendant[s]." *Peterson v. Bell Helicopter Textron, Inc.*, 806 F.3d 335, 340 (5th Cir. 2015); *Deanda v. Becerra*, --- F.4th ----, No. 23-10159, 2024 WL 1059721, at *13 (5th Cir. Mar. 12, 2024). Several federal appellate courts have found it improper to use Rule 54(c) to grant injunctive relief even when actually requested in the complaint if the plaintiff fails to pursue an injunction throughout litigation. *See id.* at 341 (collecting cases). If those discretion-based injunctions were improper, it would seem odd that a sua sponte injunction where none is requested would be a valid use of Rule 54(c). Even if the Court could issue a sua sponte party-specific injunction here, it would have to act without the benefit of developed

briefing on all four elements, in spite of the plaintiffs' prior abandonment of their request for such relief, and importantly, without the defendants having clear notice of such a possibility. And, despite its scope, vacatur is often considered "a less drastic remedy" than an injunction, so courts typically vacate rather than enjoin. *Monsanto Co. v. Geertson Seed Farms*, 561 U.S. 139, 165–66 (2010).

As for the request for a declaratory judgment, Dkt. No. 18 at 2, given the time-sensitive nature of the plaintiffs' impending obligations under the Rule, adequate relief requires an affirmative blockade of the agency's action, not merely a defensive tool. Moreover, courts in this circuit generally consider a declaratory judgment only after addressing vacatur. *E.g.*, *D&B Boat Rentals, Inc. v. United States*, 508 F. Supp. 3d 87, 101 (E.D. La. 2020); *Texas v. United States*, 606 F. Supp. 3d 437, 501–02 (S.D. Tex. 2022), *rev'd on other grounds*, 143 S. Ct. 1964 (2023). This ordering makes sense given that the APA directs that a "reviewing court *shall* . . . hold unlawful and set aside agency action"—which, again, generally means vacate—while declaratory relief is instead equitable and discretionary. *See* 5 U.S.C. § 706 (emphasis added); *Data Mktg. P'ship*, 45 F.4th at 859; *Rowan Cos. v. Griffin*, 876 F.2d 26, 28 (5th Cir. 1989). And the defendants do not argue that the Court should grant a declaratory judgment in lieu of vacatur. Dkt. No. 25 at 27–29. As a result, based on the present record before the Court, there is no other more limited relief available that would address the plaintiffs' injuries that has been properly noticed to the defendants. So, although courts can, in certain circumstances, choose a more limited approach than vacatur, *Cargill*, 57 F.4th at 472, the Court concludes that doing so here would be inappropriate.

Accordingly, the Court concludes that the proper remedy here is vacatur, and, by necessary implication, that means relief not limited to the plaintiffs. A remedy must be tailored to redress the plaintiffs' particular injury. *Id.* But the Court is not free to ignore the Fifth Circuit's precedent instructing that the precise remedy for the plaintiffs' APA claim is vacatur, particularly when, as here, no other suitable remedy is before the Court.[18] *See Data Mktg. P'ship*, 45 F.4th at 859–60 (holding that the set-aside vacatur under Section 706(2) nullifies and revokes unlawful agency action). The Fifth Circuit has repeatedly granted vacatur without limiting such relief to the parties. *See, e.g.*, *Cmty. Fin. Servs. Ass'n of Am., Ltd. v. CFPB*, 51 F.4th 616, 623 (5th Cir. 2022), *cert. granted*, 143 S. Ct. 978 (2023); *Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1033 (5th Cir. 2019); *Texas*, 50 F.4th at 529–30. To the extent courts tailor vacatur, those limits address the scope of the agency action that is vacated, nullifying only those portions that are invalid. *See Franciscan All., Inc. v. Azar*, 414 F. Supp. 3d 928, 944–45 (N.D. Tex. 2019). Unsurprisingly, because party-specific vacatur

[18] As the Court has already noted, members of the Supreme Court have questioned the validity of non-party-specific relief such as vacatur. *See Texas*, 143 S. Ct. at 1980–86 (Gorsuch, J., concurring in judgment). And there is ongoing scholarly debate on the subject, with some arguing that vacatur under the APA is universal and others claiming that any relief should be limited in scope to only the plaintiffs. *Compare* Mila Sohoni, *The Power to Vacate a Rule*, 88 Geo. Wash. L. Rev. 1121 (2020), *with* John Harrison, *Section 706 of the Administrative Procedure Act Does Not Call for Universal Injunctions or Other Universal Remedies*, 37 Yale J. on Reg. Bull. 37 (2020), *and* Samuel L. Bray, *Multiple Chancellors: Reforming the National Injunction*, 131 Harv. L. Rev. 417 (2017). However, because the Court cannot ignore existing Fifth Circuit precedent on vacatur absent a Supreme Court decision overruling it, the Court follows existing precedent in vacating the Rule without limitation to the plaintiffs.

The Court recognizes the weighty concerns raised by the defendants as to why relief not limited to the parties should be disfavored. For one, there is ongoing litigation in another district where 21 states have challenged the same rule, creating the possibility of conflicting rulings. *See Kentucky v. Fed. Highway Admin.*, No. 5:23-cv-162-BJB (W.D. Ky. filed Dec. 21, 2023). Moreover, vacatur runs contrary to the ordinary principle that relief is limited to what is necessary to redress the plaintiff's demonstrated harm. *See Gill v. Whitford*, 585 U.S. 48, 73 (2018). The Court does not grant this relief lightly. But based on its understanding of precedent and the unique procedural posture at hand, the Court sees no viable or appropriate alternative.

runs contrary to the very nature of the relief, the defendants have cited no examples to the contrary. *See* Dkt. No. 25 at 27–29. To vacate is to void. And the Court must do so here.

6. Conclusion

"When a regulation attempts to override statutory text, the regulation loses every time—regulations can't punch holes in the rules Congress has laid down." *Djie v. Garland*, 39 F.4th 280, 285 (5th Cir. 2022). That is what occurred here—the DOT's 2023 Rule attempts to override Section 150(c)(3)'s clear limitation of authorized performance measures to those that track the physical condition and efficiency of the interstate and national-highway systems. If the people, through Congress, believe that the states should spend the time and money necessary to measure and report GHG emissions and set declining emission targets, they may do so by amending Section 150 or passing a new law. But an agency cannot make this decision for the people. An agency can only do what the people authorize it to do, and the plain language of Section 150(c)(3) and its related statutory provisions demonstrate the DOT was not authorized to enact the 2023 Rule.

Given this reality, the Court grants the plaintiffs' motion for summary judgment (Dkt. No. 18) and denies the defendants' cross-motion for summary judgment (Dkt. No. 24). Further, in light of relevant Fifth Circuit precedent, the Court determines that remand with vacatur is the appropriate remedy. Therefore, the Court sets aside and vacates the 2023 Rule. The Court denies all other requested relief. Judgment, including a seven-day administrative stay, will follow in a separate Order.

So ordered on March 27, 2024.

JAMES WESLEY HENDRIX
UNITED STATES DISTRICT JUDGE

Administrative Amendment

The Transportation Policy Board (TPB) has delegated the authority to approve specifically defined amendment requests, known as Administrative Amendments, to the Executive Director. These amendments are non-substantive in nature and do not materially change the individual projects or overall program and are not subject to public involvement or direct approval by the TPB. The Executive Director has the discretion to elevate any proposed administrative amendments to a full amendment. All approved administrative amendments are provided to the public and the TPB for informational purposes. For more information on amendments please refer to CAMPO's Amendment Policy and Procedures.

Amendment Requests										
MPO ID	County	Sponsor/Co-Sponsor	Roadway/Facility Name	Description	Limits From	Limits To	Limits At	Let Year	Anticipated Total Cost	Amendment Request
41-00012-00	Hays	City of Buda	Main Street	Widen to 4 to 6-Lane-Divided with Shared Use Paths	IH 35	Firecracker Drive		2026	7,440,000	**Editorial Correction:** Clarifying the project description. **Let Year:** Updating the anticipated Let Year from 2045 to 2026. **Anticipated Costs:** Reducing anticipated cost from $31,700,000 to $7,440,000 to account for less right-of-way acquisition.

Transportation Improvement Program (TIP) Amendment*

Regional Transportation Plan (RTP) Amendment

*All amendments to the Transportation Improvement Program (TIP) will automatically be amended in the Regional Transportation Plan (RTP) per CFR 450.218.

The above administrative amendments have been approved by CAMPO's Executive Director:

Ashby Johnson, Executive Director

Capital Area Metropolitan Planning Organization (CAMPO)