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Kern Area Regional Goods-Movement Operations (KARGO)

SUSTAINABILITY STUDY PHASE II



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Introduction

Study Overview

The San Joaquin Valley (SJV) has long been acknowledged as one of the most critical freight transportation and goods movement centers in California. While agriculture and food products will continue to play an important role in this growth, the SJV is also becoming a major distribution and logistics center with expanding numbers of mega-distribution centers and even new manufacturing facilities, as businesses seek to re-shore jobs that had moved overseas. Many of these jobs involve higher paying automated manufacturing and logistics jobs, a major focus of the Better Bakersfield & Boundless Kern (B3K) regional economic and educational strategies.¹ The trade hub region of Kern County and the Southern SJV has over 52 million square feet of industrial, warehousing and processing facilities, and has been growing at four million square feet per year since 2014. All of this growth will contribute to the need for improved goods movement systems in Kern County. With this much of an increase in freight and logistics programs, proactive planning is needed to maximize economic benefits while also mitigating adverse impacts on communities.

Fehr & Peers led the KARGO Phase I Study. Phase I focused on identifying potential transportation impacts of future land use development in the north Bakersfield Metro area, and who would be impacted, including disadvantaged communities. The analysis consisted of ten distinct alternatives for roadway improvements and developed conceptual designs at twenty locations to further inform the future network needs in the area. The objective was to provide cohesive recommendations to update the Circulation Plan for the study area, which includes North Bakersfield, the City of Shafter, and the surrounding vicinity. Key recommendations of the Phase I study included: 1) a targeted logistics transportation fee, 2) a freight modal shift program to move cargo from truck to rail, 3) identification of next generation industrial trade port district(s), and 4) clean technology on highways such as the SAFETEC autonomous, zero-emission truck testing zone on rural routes.²

With the development of large warehouse and e-commerce facilities and the resulting increase in vehicle traffic, Kern County is experiencing significantly more pavement damage to its highways. There is a need for policy options for jurisdictions in the County to recapture the costs of roadway maintenance, as well as limit emissions caused by the surge in truck traffic. In addition to increased funding needed based on today's economic structure (largely facilitated by the fuel tax), the evolutionary switchover to electric vehicles will, over time, lead to significant reductions in fuel tax revenues unless another fee structure is implemented. At present, battery-electric trucks are allowed to be 2,000 pounds heavier than diesel trucks, further exacerbating pavement damage.

¹ B3K website. <https://b3kprosperity.org/>

² KARGO Sustainability Study – Phase I. <https://www.kerncog.org/goods-movement/>. 2021.

Figure 0.1 Existing, Candidate, and Future Truck Routes (Sample Maps from Appendix A1)

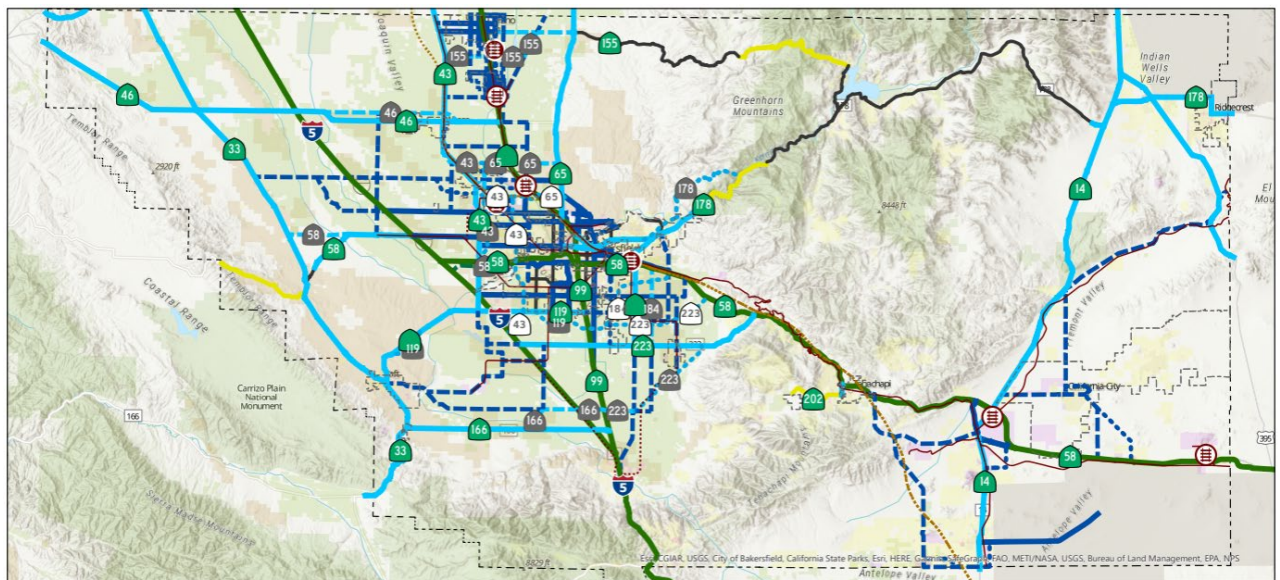
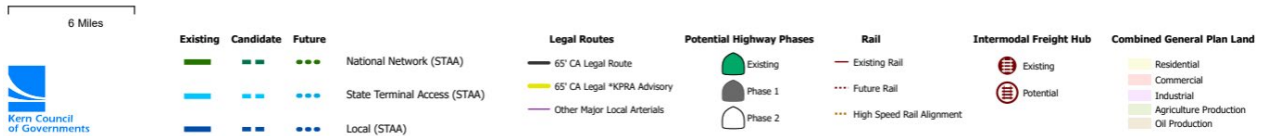
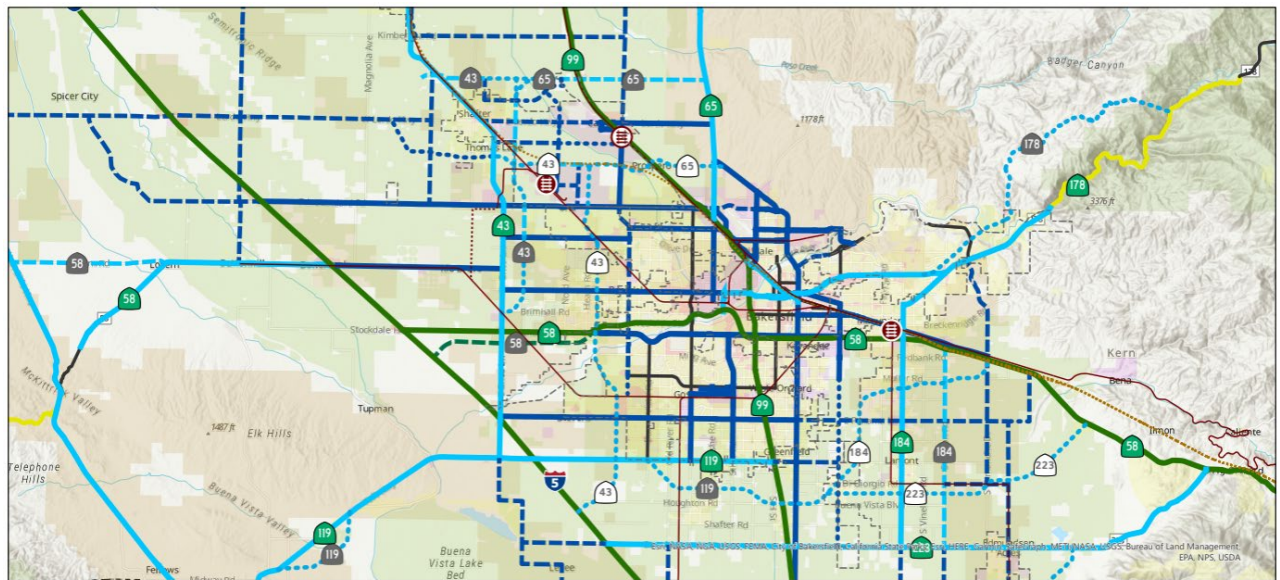
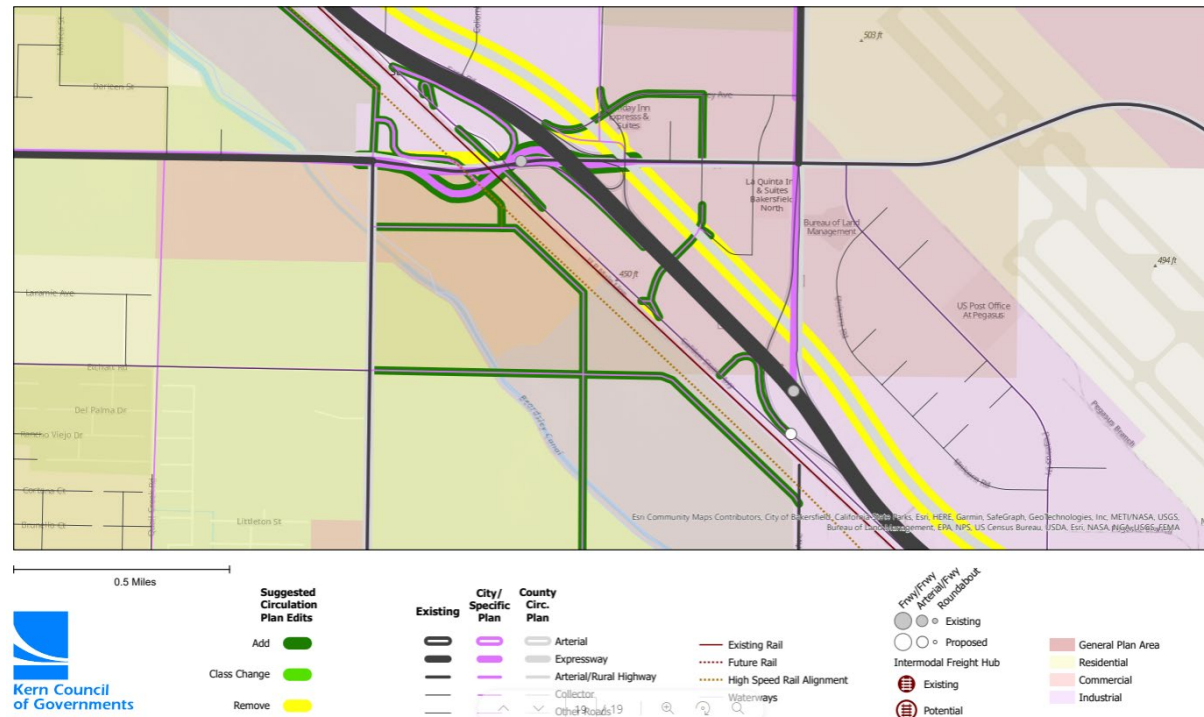


Figure 0.2 Suggested Goods Movement Related Additions, Classification Changes or Deletions to Combined Local Circulation Plans (Sample Maps from Appendix A2)

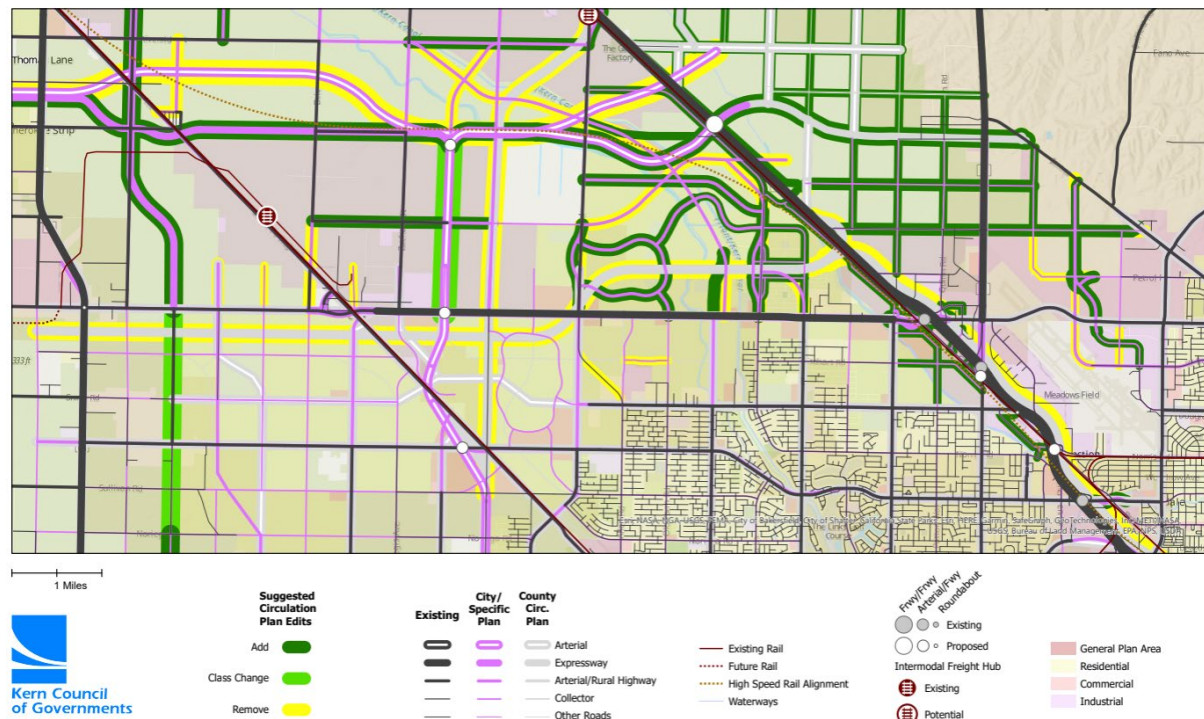
C-19 Metro Bakersfield - Seventh Standard / 99 Interchange

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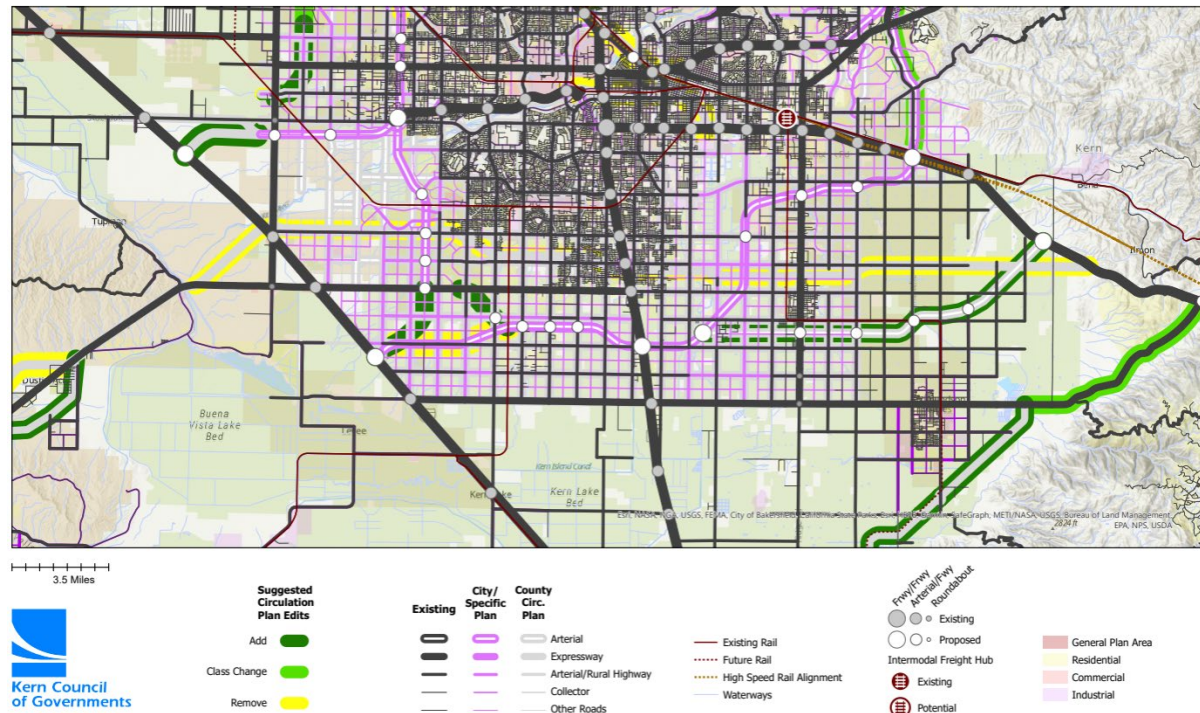
C-2 7th Standard Corridor - Combined Circulation Plans Suggested Map Edits

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C-4 Metro Bakersfield - Combined Circulation Plans Suggested Map Edits

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C-17 Kern Region - Combined Circulation Plans Suggested Map Edits

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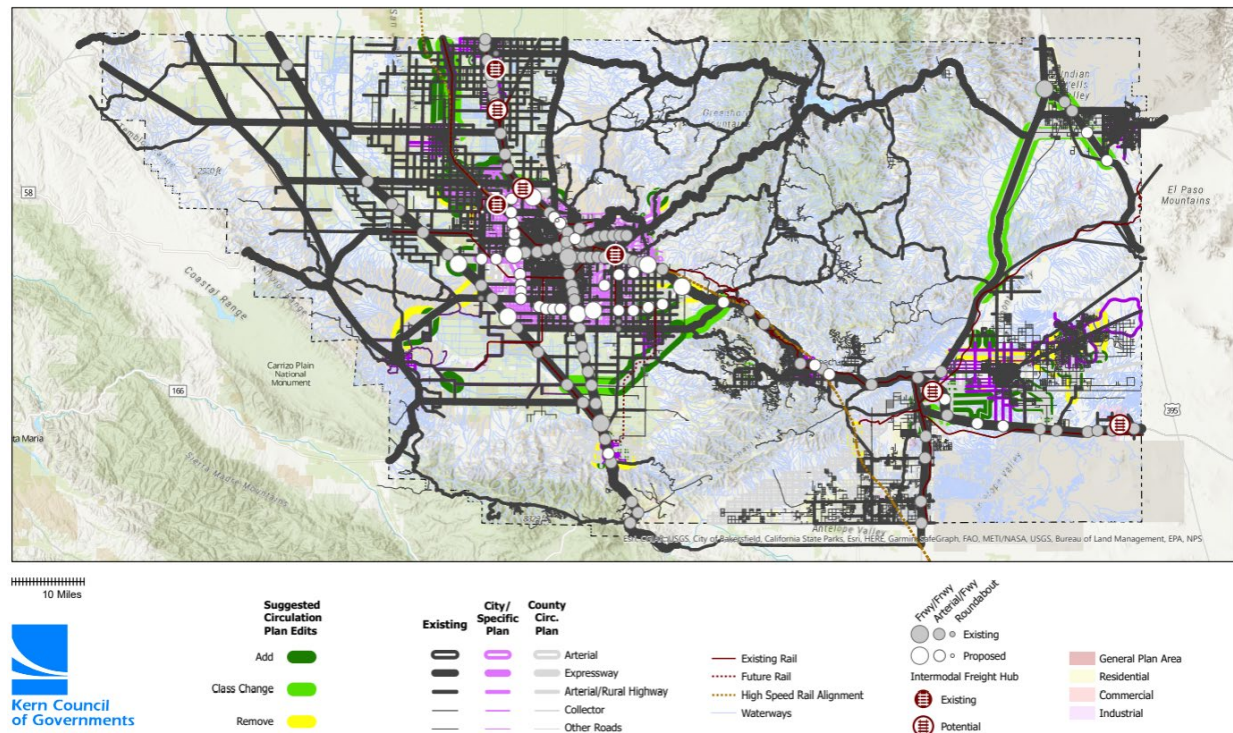
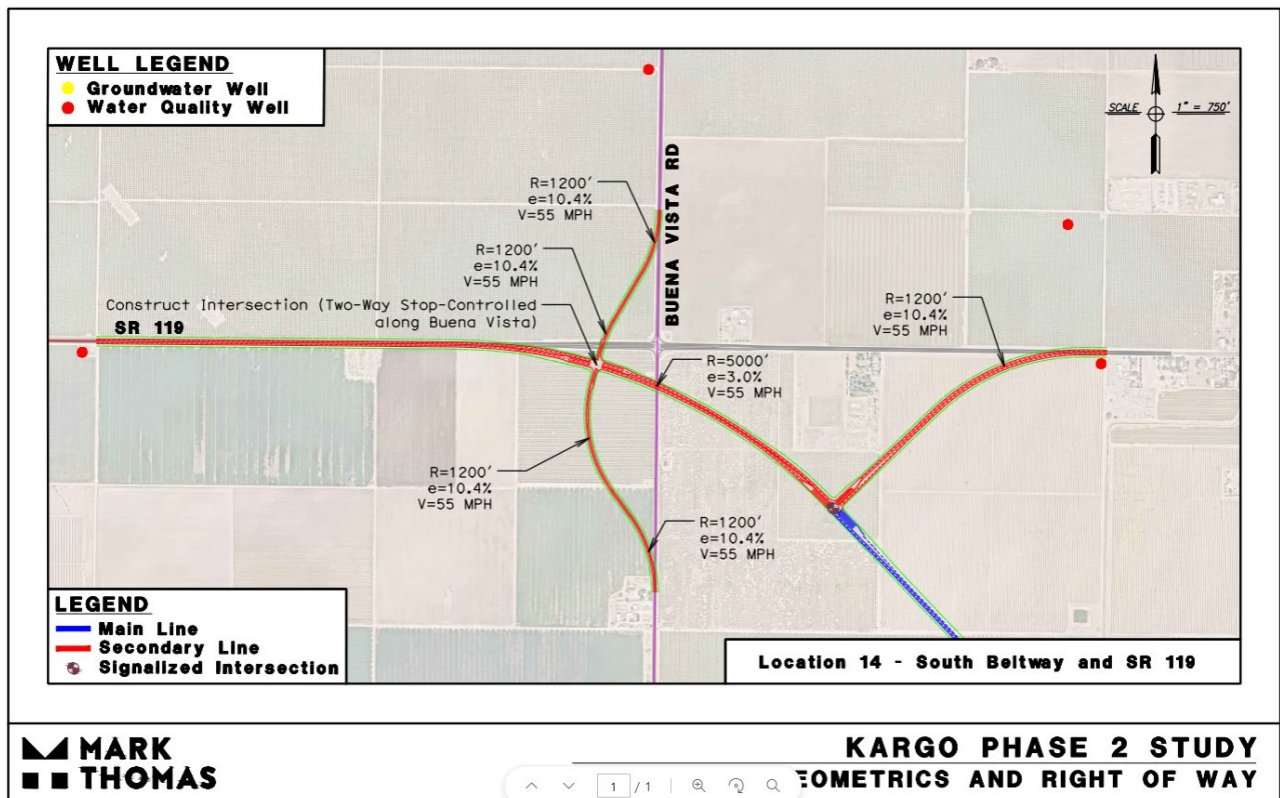
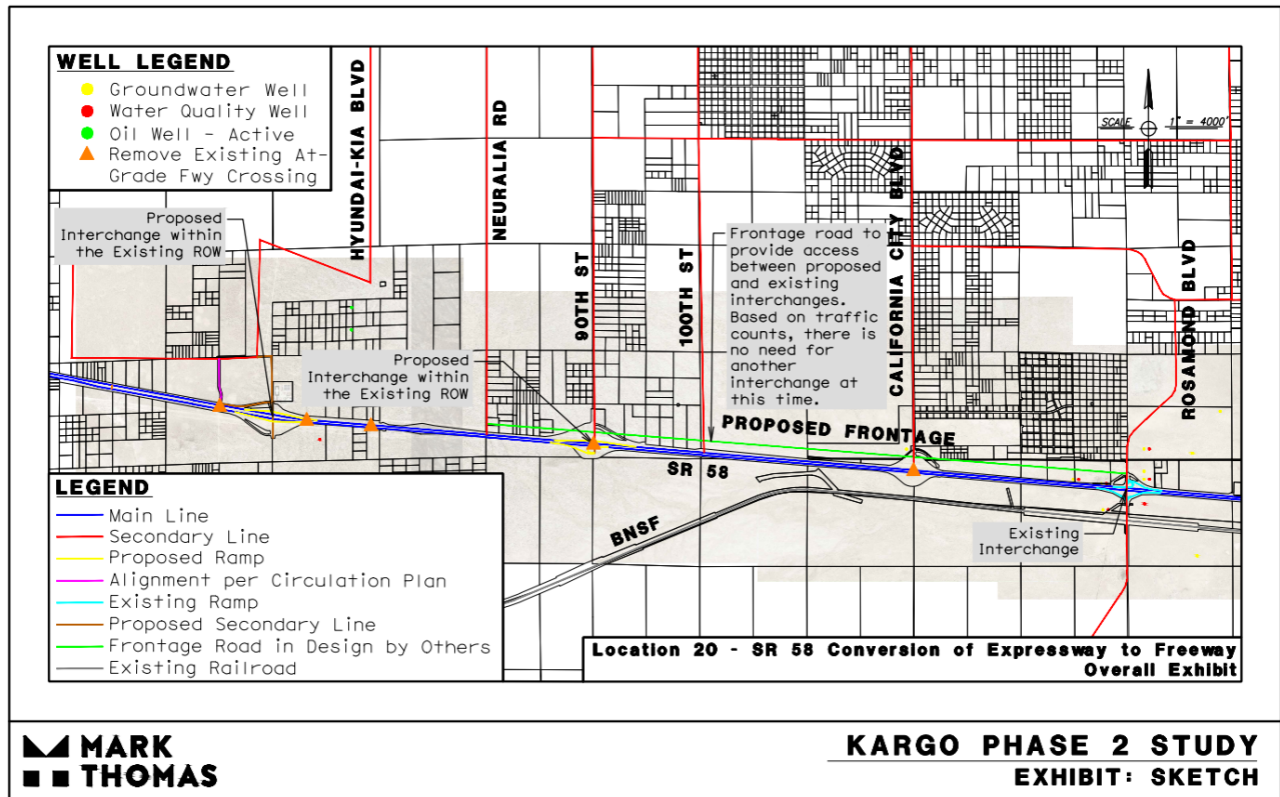


Figure 0.3 Conceptual Designs (Sample Maps from Appendix A3)



The first priority of the KARGO Phase II study was to finalize and refine the list of needed infrastructure improvements and develop an implementation strategy. Implementation requires the development of a funding mechanism that complements existing local impact fee programs, as well as transportation mitigation measures associated with new industrial development. Freight-related infrastructure investments are necessitated by the anticipated growth in goods movement. The study analyzed various funding plans and opportunities, including a regional logistics mitigation fee program, which was vetted through the development of an outreach program to engage and communicate findings to stakeholders and disadvantaged communities. The California Mitigation Fee Act requires that an impact fee program fulfill the following:

1. Establish a rational nexus/reasonable relationship between the infrastructure need and development impact;
2. Fees must be roughly proportional with the impacts of development and the cost of the infrastructure; and
3. Development does not have to exclusively benefit from the infrastructure but can substantially benefit from the overall improvement in regional mobility.

A Nexus Study fulfills these requirements by determining the “nexus” between the transportation impact of a proposed development and the cost to mitigate the impact. A regional travel demand model is typically used to estimate traffic growth (autos and trucks) and identify capacity constraints. The fee is developed by estimating the cost of the improvements and then determining the cost per trip, which can either remain as a cost per estimated trip, or more typically, converted into development square footage based on an industry standard, such as the Institute of Transportation Engineers Trip Generation Manual. The Nexus Study process for a fee focused on industrial warehousing and logistics would require confirmation of expected land use growth in warehousing and logistics uses in the County, application of the regional travel demand model to generate traffic data outputs and to identify future capacity deficiencies in the roadway network, and the determination of the proportion of those deficiencies that are attributable to new warehousing and logistics related development.

The second priority of the KARGO Phase II study focuses on reducing freight generated emissions by either mode shift or clean transportation technologies. Phase I identified an opportunity to shift cargo from trucks to trains thereby reducing truck vehicle miles traveled (VMT) and emissions. The strategic location of the City of Shafter in between the San Pedro Bay Ports and the Port of Oakland, along with the operation of goods movement activities on both the UP and BNSF mainline railroads, provides a unique opportunity for Public-Private Partnership (P3) investments to facilitate mode shift. Kern County is also located along I-5, which is being targeted by the states of California, Oregon and Washington as a clean energy corridor with special provisions for trucks to foster the adoption of clean technologies.

Four overarching goals for the study were established in consultation with stakeholders: 1) improve roadway maintenance 2) encourage the adoption of clean logistics technology; 3) maintain competitiveness and economic benefits for all communities in the region; and 4) add network capacity. **Appendix A-1** presents a news article summarizing the study, as well as a local advertisement highlighting the study.

Report Structure

This report is divided into the following sections, which collectively describe the process that was used to conduct the KARGO Phase II study and present the associated outcomes, conclusions, and recommendations:

- **Outlook of Logistics and Industrial Growth in Kern County:** this section describes the analysis that was performed to assess the impacts of anticipated growth in warehousing and logistics on roadway network performance and identify deficiencies to be addressed through targeted mitigations.
- **Roadway Network Improvement Projects:** this section presents the improvements to alleviate the deficiencies that were identified in the preceding section.
- **Existing Impact Fee Programs:** this section summarizes existing development impact fees for jurisdictions in Kern County to determine the total impact fee burden for the identified agencies to inform the exploration of other potential funding mechanisms to support infrastructure needed for future development.
- **Competitiveness Analysis:** this section summarizes the existing development impact fees and overall economic competitiveness of Kern County relative to peer jurisdictions for warehouse and industrial land uses.
- **Nexus Study:** this section presents the full nexus study that was performed to identify the fair share cost to fund the list of projects identified in the 'Roadway Network Improvement Projects' section.
- **Funding Gaps and Alternative Funding Sources:** this section identifies alternative funding mechanisms that may be used to supplement a fee program to pay the full cost of needed improvements.
- **Outreach Strategy & Efforts:** this section describes the development and implementation of a stakeholder outreach approach to solicit feedback on the process and identify key concerns to be addressed through the study.
- **Guidelines for State Route Adoption and Relinquishment:** this section outlines the process involved in the adoption or relinquishment of state routes.

Outlook of Logistics and Industrial Growth in Kern County

Over 50 large distribution and manufacturing facilities, each exceeding 200,000 square feet, are currently located in Kern and Southern Tulare Counties. The Kern Council of Governments (KernCOG) recently inventoried 186 medium and large distribution, manufacturing, and processing facilities using Google Maps and Google Earth, and identified more than 52 million square feet of industrial uses. As part of this inventory, facilities were categorized according to whether they primarily import (blue) or export (green) goods and were further categorized according to their likely rail shipment type (container, bulk, or refrigerated). The inventory suggests a good balance between imports and exports, facilitating dual transactions (shipping both directions loaded) and reducing shipping costs by 40 percent. **Figure 1** shows the list of the top 50 largest facilities and their distribution in the metro Bakersfield area as an example.

The demand for logistics space in Kern County is growing. There are approximately 70,000 acres of land entitled for industrial use in Kern County. Of those, approximately 18,565 acres are already developed and 2,111 acres are expected to be developed in the near-term. If all of the entitled industrial land uses in the City of Shafter and Metro Bakersfield were to be developed in the future without significant transportation network improvements and capacity enhancement projects, gridlock would likely occur across the network.

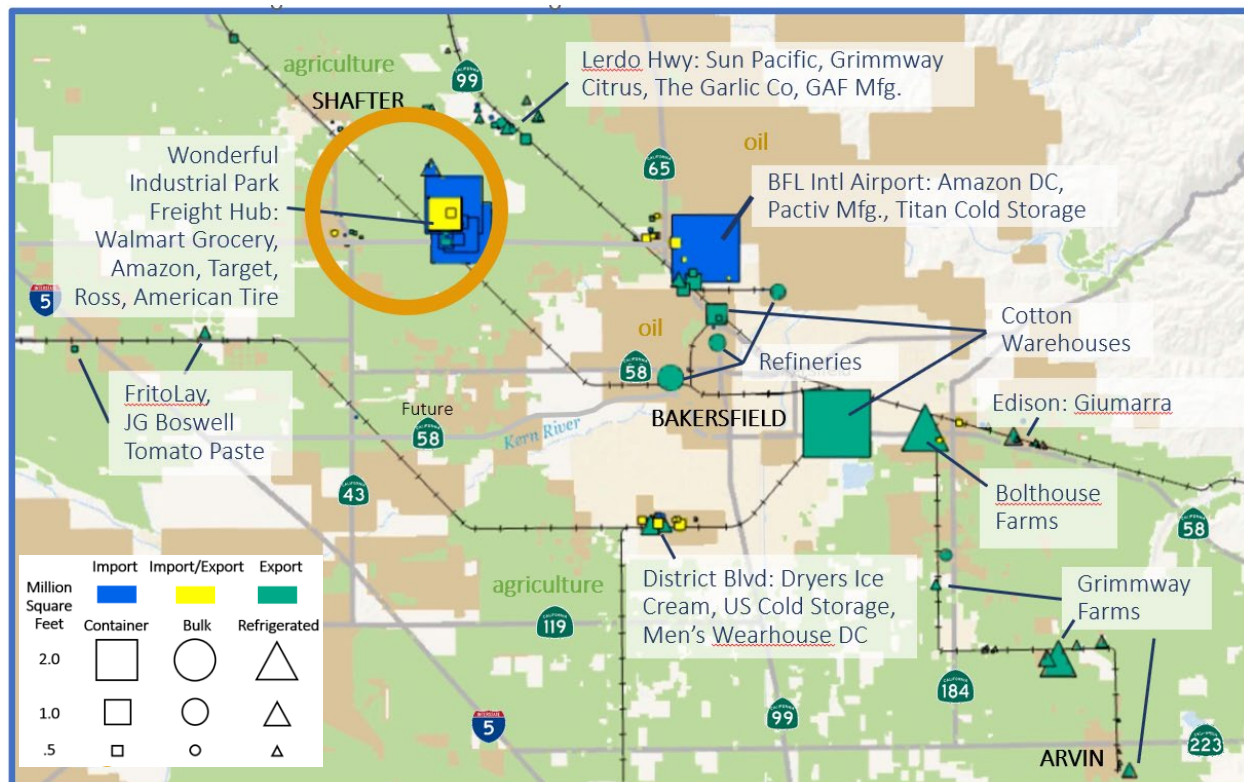
Figure 2 shows that Adopted General Plan entitlements in Shafter and Bakersfield will degrade operations on most roads to LOS E or F. While this growth is expected over the next 50 years, this degradation in operational performance underscores the magnitude of the changes that are anticipated over time.

For the KARGO Phase II study, the KernCOG regional travel demand model for RTP/SCS 2022 (model) was used as the basis for measuring growth in development, number of trips, truck volumes, traffic congestion, and other performance measures. The base year of the model is 2022, and the future year is 2046. For the purpose of the nexus fee study, the County is split into four districts to simplify the process and overcome the limitation that in the regional model the land use data for each Travel Analysis Zones (TAZs) might have errors but the control totals for larger jurisdictions are accurate. These four districts are shown in **Figure 3** and include:

- D1: Bakersfield
- D2: South -West Kern
- D3: North East Kern
- D4: East Kern

Figure 1. Top 50 largest distribution centers/manufacturing facilities in Kern County

MSF ² Dist. Center (DC), Manufacturing (MFG)	MSF DC/MFG	MSF DC/MFG
2.60 Amazon Small Sort DC - Intl Airport (BFL)	0.40 Pactiv MFG - BFL	0.15 Sunrise Brands Apparel Anx. DC - T
1.80 Target DC - Shafter (S)	0.37 U.S. Cold Storage DC - Bakersfield (B)	0.15 Prime Valley Warehouse DC - B
1.70 Ross Dress for Less DC - S	0.35 Red River Lgsts./Am. Tire Anx. DC - S	0.15 Sigler Wholesale Distributors DC - B
1.60 IKEA DC - Tejon Commerce Center (T)	0.35 Famous Footware DC - T	0.14 CarQuest Auto Parts DC - BFL
1.20 Malof Fine Linens DC - Delano (D)	0.35 Sunrise Brands Apparel DC - T	0.13 Amazon Local DC - BFL
1.13 Walmart DC - Porterville	0.30 Hillman DC - S	0.12 GAF Materials Corp MFG - S
1.00 Amazon Soft Goods DC - S	0.30 Formica DC - S	0.11 American Tire Distributors DC - B
1.00 Ross Dress for Less Anx. DC - S	0.25 Hadco Metal Trading MFG/DC - BFL	0.10 California Paper Products MFG - S
1.00 American Tire DC - S	0.24 Men's Wearhouse DC - B	0.10 Core Mark Intl DC - B
0.60 Walmart Refrigerated Grocery DC - S	0.21 GAF Roofing Tile Plant MFG - S	0.09 Custom Building Products DC - BFL
0.60 Dollar General DC - T	0.20 FedEx Ground DC - S	0.09 Rain-For-Rent MFG - B
0.60 Dollar General/Vision Media DC - T	0.20 UP Cold Connect Intrmdl. Rail DC - S	0.08 Amware Logistics DC - BFL
0.54 Dryers Ice Cream Plant MFG/DC - B	0.19 PFG Customized Distribution DC - S	0.04 GMC Roofing & Bldg. Paper MFG - S
0.50 L'Oreal Cosmtcs/Dollar Gen. Anx. DC - T	0.16 KW Plastics MFG - BFL	0.04 Cognito Motorsports DC - BFL
0.50 Camping World DC - T	0.16 Sunrise Brands Apparel Anx. DC - T	0.03 Bakersfield QDC Intermodal DC - S
0.40 Essendant Wholesale Supplies DC - S	0.15 George Fischer Harvel Plstcs. MFG - B	0.03 FedEx Ground DC - B
0.40 Caterpillar DC - T	0.15 Plant Prefab (Housing) MFG - T	0.02 DenBeste Manufacturing MFG - S
¹ Excludes another 30 MSF of ag & energy related distribution/processing facilities.		23.07 ² Million Square Feet (MSF) Total



Source: KernCOG staff

Figure 2. Traffic Conditions under Adopted General Plan Entitlements in Shafter and Bakersfield at Full Buildout

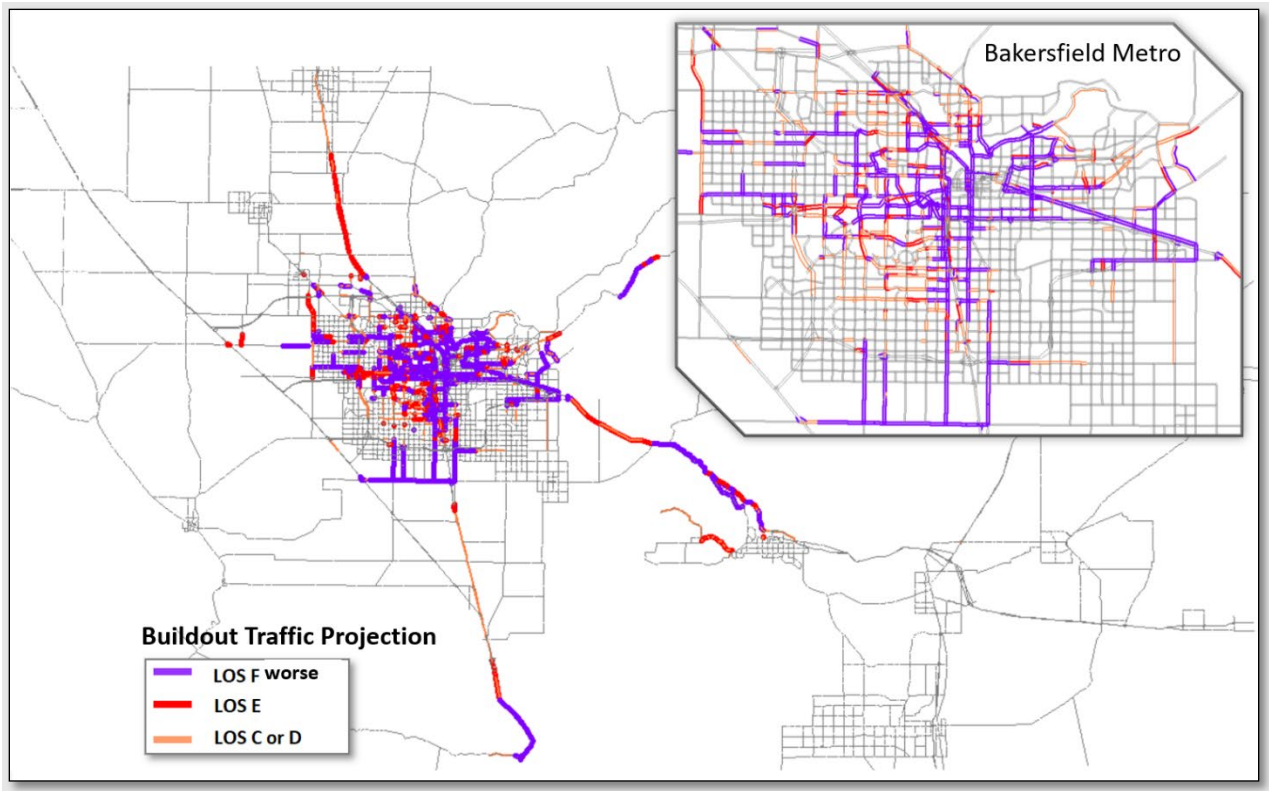
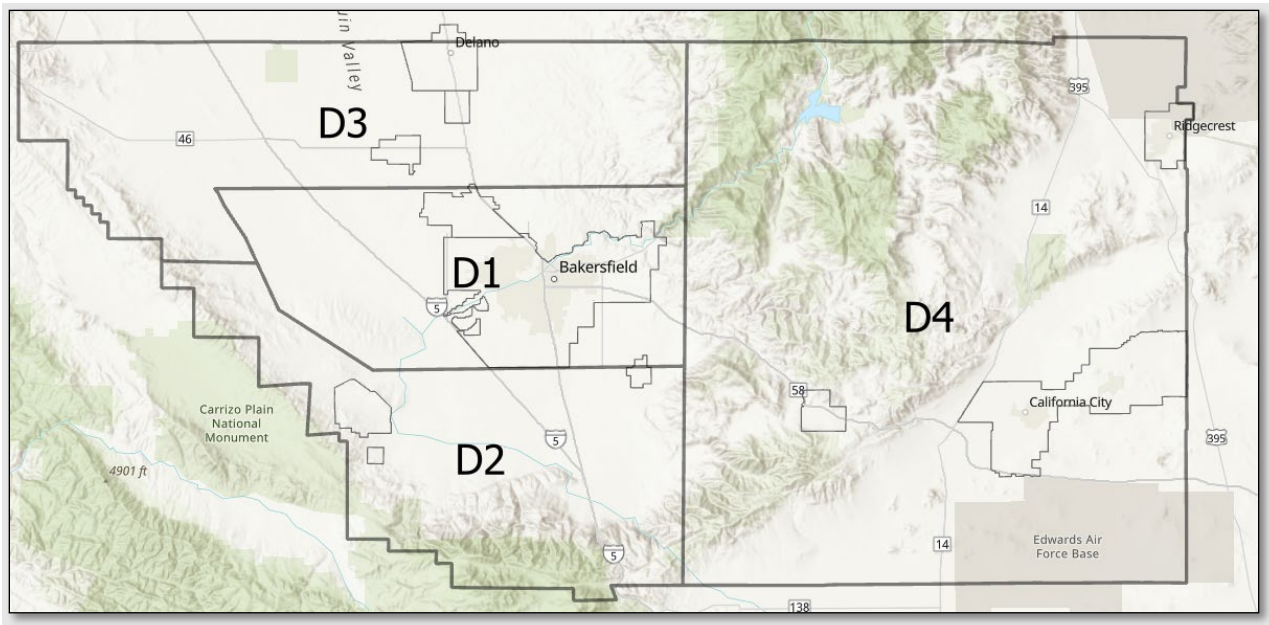


Figure 3. Districts Defined for Purpose of Industrial Transportation Impact Fee Program



Land Use Scenarios

Within the model, land uses are represented by the number of employees or residents per land use category (e.g., agricultural, industrial, retail, office, single-family, multi-family, etc.). **Table 1** presents an aggregated summary of households, population, and employment for Years 2022 and 2024 for each district, as well as aggregated industrial and agricultural employment to isolate the impacts of truck trips.

Table 1. Summary of Land Use information in 2022 and 2046

Year	District	Total Household	Total Population	Total Employee*	Industrial + Agricultural Employee
2022	D1	197,880	640,052	234,804	69,613
	D2	14,779	48,748	23,967	14,530
	D3	22,665	89,070	44,845	24,165
	D4	50,668	133,251	40,161	4,615
	County	285,992	911,122	343,777	112,923
2046	D1	240,488	826,356	267,314	78,982
	D2	29,053	93,808	37,249	21,040
	D3	26,083	110,536	48,326	25,789
	D4	58,634	165,863	47,125	6,709
	County	354,258	1,196,563	400,015	132,520
Growth: 2046-2022	D1	42,608	186,305	32,511	9,369
	D2	14,274	45,059	13,282	6,510
	D3	3,418	21,466	3,482	1,624
	D4	7,966	32,611	6,964	2,094
	County	68,266	285,441	56,238	19,597

* Total Employment includes Industrial and Agriculture as well

Source: KernCOG Model, summary by Fehr & Peers

It is important to note that the estimated growth in **Table 1** is based on assumptions reflected in 2022 RTP/SCS. Per discussion with Caltrans District 9, some of the recent anticipated developments in Eastern parts of Kern County are not reflected, therefore this table might underestimate the growth in Eastern Kern.

2046 Network Assumptions

Two scenarios were considered for the future roadway network:

- Year 2046 future baseline RTP/SCS network. This network includes the completed West Urban Corridor (WUC)

- Year 2046 future baseline RTP/SCS network without WUC (2046 No-WUC Network)

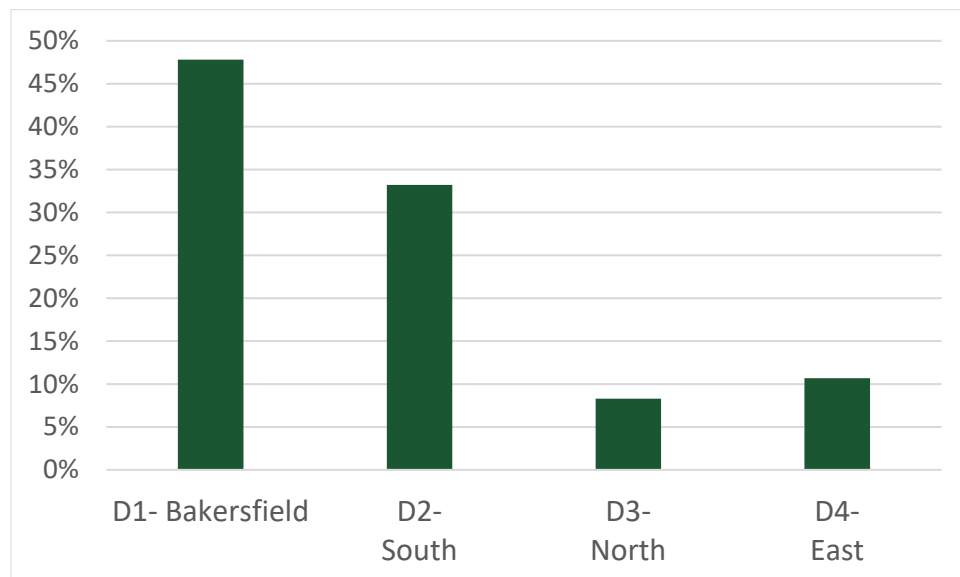
Based on discussions with stakeholders, the 2046 No-WUC Network was considered as the future baseline for this analysis. The WUC is not fully funded and most likely will not be built in the near term.

Share of Industrial and Agriculture Use in overall Growth

This section summarizes the growth in truck trips associated with projected industrial, manufacturing, and agricultural processing development anticipated through 2046. To measure the potential impacts of future industrial development, we ran a scenario that assumed all uses remain constant from Year 2022 to 2046, except for industrial and agricultural uses. These two uses were assumed to grow at the rate assumed in the 2022 RTP/SCS. By running this scenario, traffic impacts directly attributable to industrial and agricultural uses were isolated thus providing insight into the impacts of trucks generated by these two land use types. This scenario is called "2046 No Ind|Ag" and assumes the 2046 No-WUC Network.

Figure 4 shows the distribution of growth of industrial and agricultural uses over the next 24 years. District 1 has the highest share of growth, followed by district 2. District 1 includes development north of Bakersfield and in the City of Shafter, and District 2 includes the Tejon Ranch industrial development. Together, these two districts contribute to 81 percent of the growth in the industrial and agricultural sectors in the region.

Figure 4. Distribution of Growth of Industrial and Agriculture Uses by District (2046-2022)



Source: KernCOG Model, summary by Fehr & Peers

Table 2 shows the daily number of trips generated by each of the districts for various modes. External trips are those with at least one trip end outside of the County. Three Scenarios are summarized here:

1. Base Year 2022
2. Future 2046 RTP/ SCS Baseline without WUC
3. Future 2046 No Ind|Ag without WUC

Table 2. Number of Daily Trips by District in Each Scenario

Region	Total	Passenger Cars	Medium Trucks	Heavy Trucks	All Trucks
2022 Base Year					
D1	3,147,754	2,944,343	184,411	19,000	204,214
D2	188,444	168,452	16,006	3,987	20,333
D3	329,905	294,825	28,230	6,850	35,659
D4	469,784	435,306	31,864	2,615	34,543
Kern	4,135,888	3,842,925	260,510	32,452	294,749
External	283,896	160,230	9,327	43,047	42,580
2046 Baseline RTP/SCS Without WUC					
D1	3,707,601	3,468,875	216,816	21,910	239,621
D2	326,938	296,855	25,349	4,734	30,440
D3	373,950	335,300	31,228	7,422	39,272
D4	555,301	514,058	37,922	3,321	41,345
Kern	4,963,790	4,615,088	311,315	37,387	350,677
External	320,649	183,566	11,968	49,521	49,438
2046 No Industrial/Agricultural, No WUC					
D1	3,684,575	3,451,305	212,597	20,673	234,054
D2	307,761	280,490	22,900	4,371	27,604
D3	370,613	333,010	30,477	7,125	38,196
D4	549,894	509,885	37,015	2,995	40,080
Kern	4,912,844	4,574,690	302,989	35,164	339,935
External	316,819	179,737	11,967	49,521	49,438

Source: KernCOG Model, summary by Fehr & Peers.

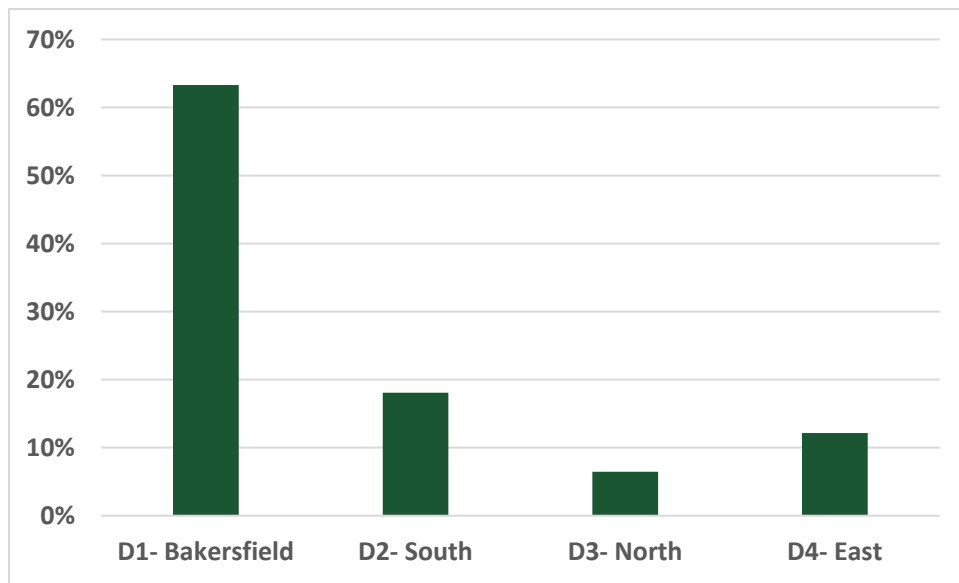
Table 3 shows the growth of daily trips by district between 2022 and 2046 between three scenarios. As expected, District 1 would experience significant growth in truck traffic.

Table 3. Growth of Daily Trips by District 2024-2046

Region	Total	Passenger Cars	Medium Trucks	Heavy Trucks	All Trucks
2046 RTP/SCS – 2022 Base Year					
D1	559,847	524,532	32,406	2,909	35,407
D2	138,494	128,403	9,344	747	10,107
D3	44,045	40,475	2,998	572	3,613
D4	85,517	78,752	6,058	707	6,801
Kern	827,902	772,162	50,805	4,935	55,929
External	36,754	23,336	2,641	6,474	6,858
2046 No Industrial/Agricultural, No WUC– 2022 Base Year					
D1	536,821	506,962	28,186	1,673	29,840
D2	119,317	112,038	6,894	384	7,272
D3	40,708	38,185	2,247	275	2,537
D4	80,110	74,579	5,151	380	5,537
Kern	776,956	731,765	42,479	2,712	45,186
External	32,924	19,506	2,641	6,474	6,858
C = A - B					
D1	23,026	17,570	4,219	1,237	5,567
D2	19,177	16,365	2,449	363	2,836
D3	3,337	2,290	751	296	1,076
D4	5,407	4,173	907	327	1,264
Kern	50,946	40,397	8,326	2,222	10,743
External	3,830	3,830	0	(0)	0

Source: KernCOG Model, summary by Fehr & Peers.

Figure 5 shows the distribution of daily truck trip growth across districts. District 1 contributes 63 percent of the growth in daily truck trips, followed by District 2, which contributes 18 percent of the growth.

Figure 5. Distribution of Truck Trip Growth (2024-2046)

As shown in **Table 4** industrial development generates 19 percent of total growth in truck traffic and 3 percent of growth in passenger car traffic in Kern County.

Table 4. Growth of Daily Trips by District 2024-2046

Region	Passenger Car			All Trucks		
	A*	B*	% of Ind Ag	A*	B*	% of Ind Ag
D1	524,532	506,962	3%	35,407	29,840	16%
D2	138,494	112,038	19%	10,107	7,272	28%
D3	44,045	38,185	13%	3,613	2,537	30%
D4	85,517	74,579	13%	6,801	5,537	19%
Kern	827,902	731,765	12%	55,929	45,186	19%

Note:

- A. 2046 RTP/SCS – 2022 Base Year
- B. 2046 No Ind|Ag , No WUC – 2022 Base Year

Key Takeaways

- Buildout of current general plans will surpass the planned capacity of the circulation elements in those plans. Roadways cannot be widened enough to maintain adopted level of service goals at full buildout of the existing plans. Future general plan amendments from Agriculture and industrial land uses will compound this situation.
- Roadway network improvements are needed to reduce the impact of inevitable increases in future truck traffic in and through our communities.
- District 1- Bakersfield and Shafter has the highest growth in industrial development and truck trips generated by these uses. District 2- Tejon and South County is the second highest.

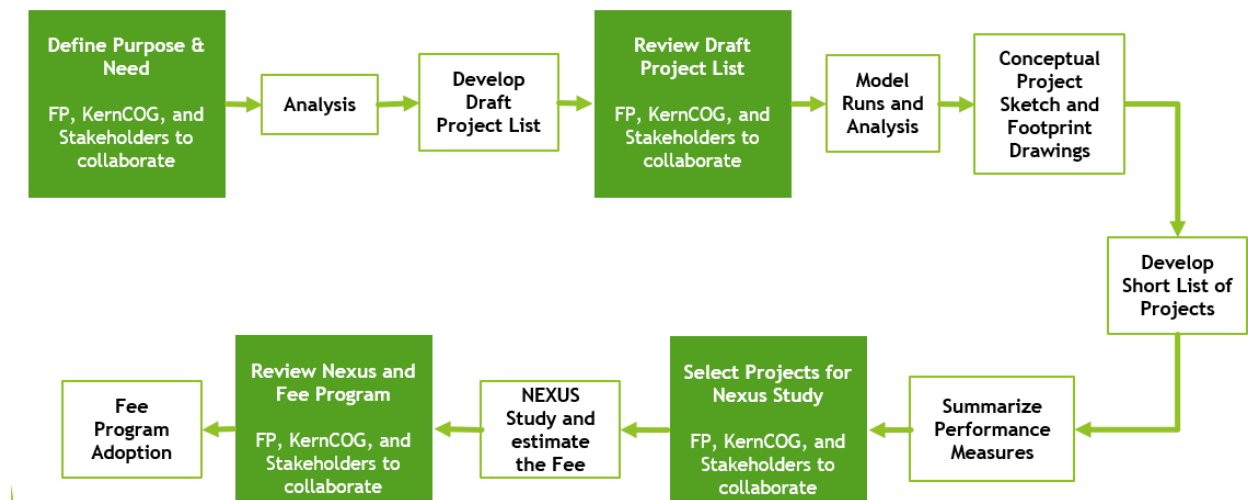
Roadway Network Improvement Projects

Methodology and Process

At the outset of the KARGO Phase II project, in collaboration with KernCOG staff and representatives from the jurisdictions within Kern County, a Countywide Circulation Element map showing existing and potential future transportation network infrastructure planned throughout the County was prepared. **Appendix A3** includes the full Countywide Circulation Element map as well as subarea maps that show additional detail for the jurisdictions in the County. In parallel with the development of a Countywide Circulation Element map, a Countywide map of existing and potential future truck routes was also created, shown in **Appendix A2**. Following the completion of these maps, project team reviewed the forecasted transportation network deficiencies shown in **Figure 2** and identified projects from the circulation element and truck route maps that may address those deficiencies. KernCOG staff then modeled the effects of the selected projects to assess their effectiveness in addressing future transportation network deficiencies.

Figure 6 details the workflow that informed the selection of projects for the nexus study.

Figure 6. Project Workflow



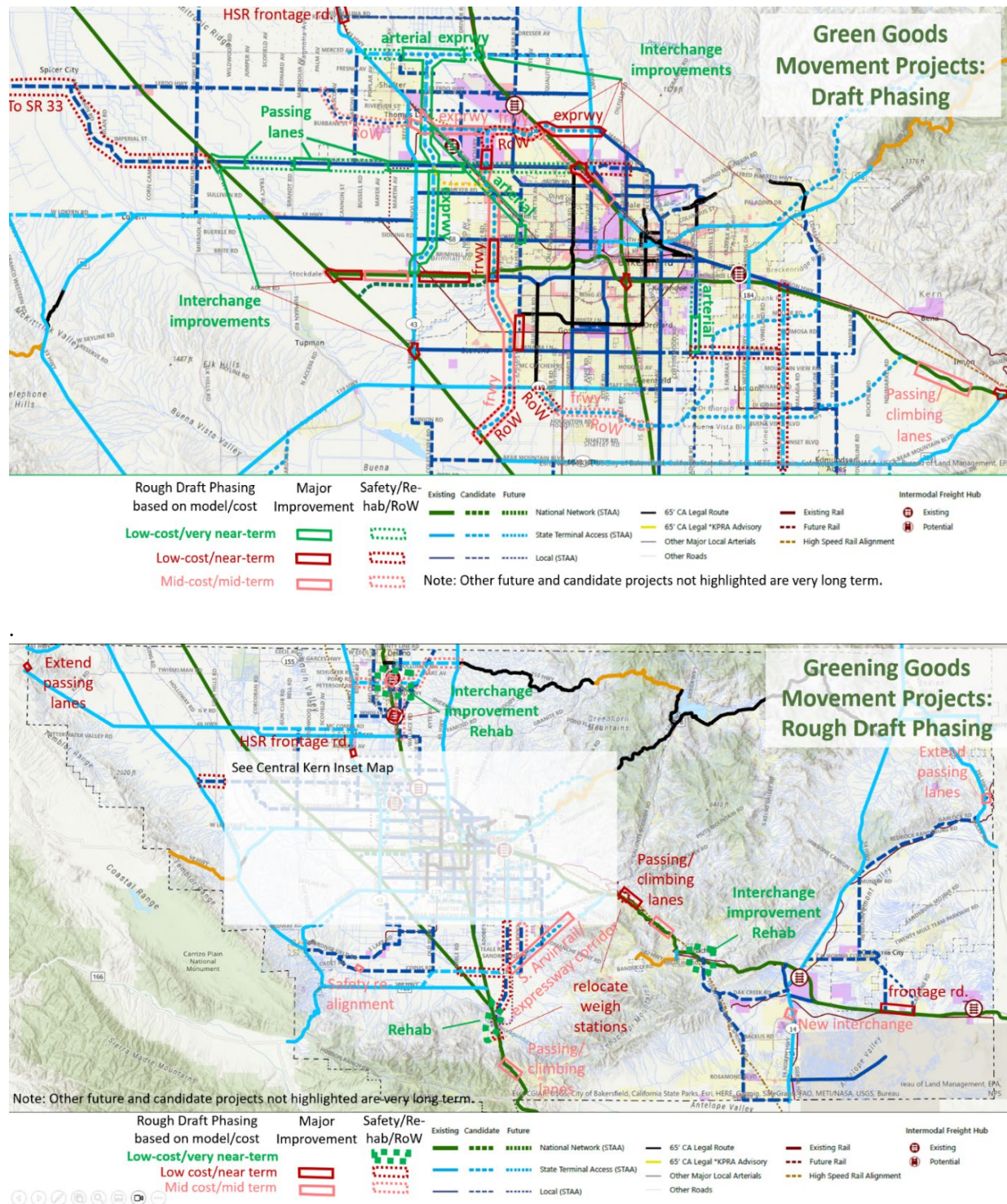
Following the performance evaluation of the selected projects, the list of projects and performance results were shared with stakeholders to solicit feedback and refine the list of projects for inclusion in the nexus study. The list was broken into two categories: Low Cost / Near Term and Mid Cost / Mid Term as shown in **Table 5**.

Table 5. Near and Mid Term Green Goods Movement Project List by 4 County Sub Areas

District	Low Cost – Near Term Projects	Medium Cost – Mid-Term Projects
D1	<ul style="list-style-type: none"> a. SR-99/SR-58 I-change missing ramps b. SR-99/7th Standard I-change (HSR to fund) c. 7th Std/I-5 I-change/passing lanes, 43 - I-5 d. Merced/Cherry/Superior "T" Corridor e. W Urban Corridor (WUC) 7th Std-Express Blvd f. WUC, WSP-Rosedale Hwy g. Mt Vernon extension, Planz-Panama h. SR-58 Stockdale Hwy, SR-43 Enos-Heath i. Burbank Expwy, SR-99 to James Rd j. Santa Fe Wy, Burbank-Rosedale Hwy k. Allen Rd, White-Panama l. I-5/58 Stockdale I-change/passing lanes 	<ul style="list-style-type: none"> a. Complete WUC/ SR-99 - I-5 (formerly W Beltway) b. Burbank Expwy, 43 Beech-WUC c. SR-99, Burbank Corridor-Beardslee Canal d. SR-58 Truck climb/pass lanes, 223-Tower Line Rd e. SR-58 Stockdale passing lanes, Enos toward I-5
D2	<ul style="list-style-type: none"> m. I-5/SR-43 interchange n. Wasco Av frontage rd (HSR to fund?) 	<ul style="list-style-type: none"> f. S Arvin Corridor g. I-5 Grapevine 2nd truck climb/passing lanes h. Copus safety realignment
D3	<ul style="list-style-type: none"> o. 99/Whistler interchange p. 99/Merced interchange q. 46 extend passing lanes, near county line 	<ul style="list-style-type: none"> i. Sr-99/Pond Road interchange
D4	<ul style="list-style-type: none"> r. SR-58/SR-223 interchange s. SR-58 truck climbing lanes, Bealville-Keene t. SR-58 frontage road, Cal City Blvd-N Gate Blvd 	<ul style="list-style-type: none"> j. Tehachapi and CA-58 Ramps k. 14/Purdy Avenue interchange l. SR-395 extend passing lanes, N of Garlock Rd m. I-5 & SR-58 truck weight station relocations

Figure 7 depicts these projects by type (e.g., Major or Safety/Rehab/ROW) and by ease of implementation (e.g., low-cost/near-term to mid-cost/mid-term).

Figure 7. Near and Mid Term Projects (Top: Central Kern, Bottom: County)



In addition to addressing forecasted transportation network deficiencies, the list of projects was also evaluated against the following objectives to ensure that the projects included in the nexus

study would advance the overarching KARGO Phase II goals of 1) improving roadway maintenance 2) encouraging the adoption of clean logistics technology; 3) maintaining competitiveness and economic benefits for all communities in the region; and 4) adding network capacity primarily for trucks and objectives as describes in **Table 6**.

Table 6. Program Goals and Objectives

Program Objectives	Goals			
	Maintenance	Clean Tech	Benefits All Communities	Network Capacity
1. Reduce Impact to DACs - Project reduces impacts to disadvantaged communities (DACs), including re-routing trucks around impacted communities and schools.	X	X	X	X
2. Benefits Local Communities – Project encourages and/or facilitates the provision of high-tech/high-pay jobs (i.e. clean tech, autonomous tech, value added manufacturing/processing).	X	X	X	X
3. Green Rail Connection - Project is “Green,” connecting to or expanding planned intermodal facilities and therefore reducing overall truck travel on the highway system. Shipping by rail is 10 times more energy efficient than shipping by truck, and therefore less polluting, while reducing wear and tear on highways.	X	X	X	X
4. Green Corridor Lowers VMT - Project is part of a “Green” corridor, such as a new alignment that reduces out-of-direction travel and therefore lowers vehicle miles traveled (VMT).		X	X	X
5. Leveraged Funding Source – HSR mitigation (i.e. 7th Std./I-99 interchange), Transportation impact fee, SHOPP, STIP, general fund, dev. mitigation agreement., etc.			X	X

Program Objectives	Goals			
	Maintenance	Clean Tech	Benefits All Communities	Network Capacity
6. Regional Scope - Projects are intended to reduce regional transportation network deficiencies caused by industrial development, rather than deficiencies caused by local-serving residential and commercial development,			X	X
7. Fixes Current/Future Deficiencies - Project addresses forecasted service deficiencies as identified in the modeling.			X	X
8. Right-of-Way Preservation – Project requires near-term development to preserve Right-of-Way for future buildout of a planned facility.			X	X
9. Not for GPAs – Improvement projects are NOT future plan amendments (however, program can provide base for analyzing impacts of future GPs).				X

After several iterations of testing project performance and soliciting stakeholder feedback, the list of projects was refined to include the projects shown in **Figure 8** and listed in **Table 7**.

Capacity Enhancement and Infrastructure Improvement Projects

Figure 8. Projects Selected for Phase II Nexus Fee Program

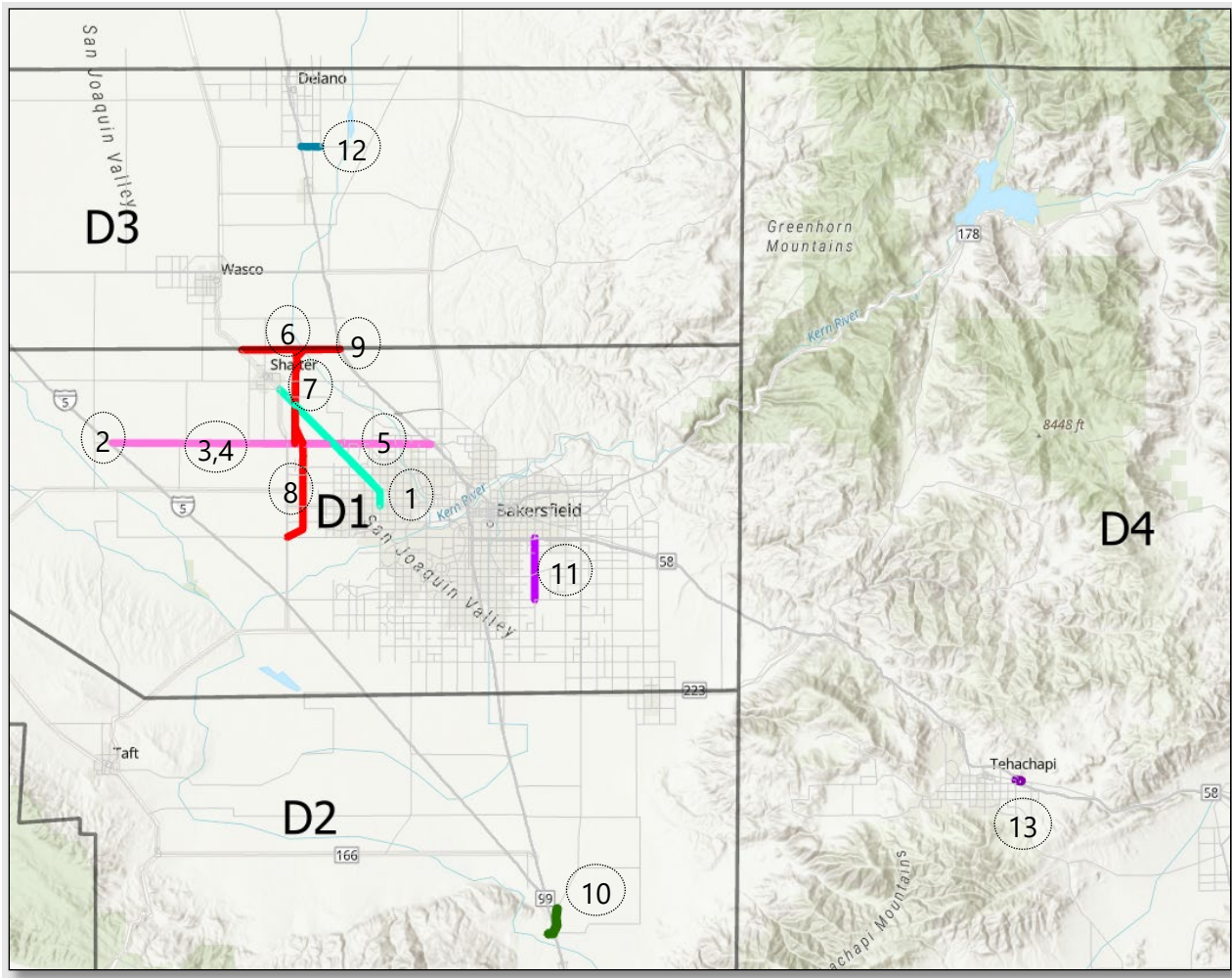


Table 7. Projects Selected for Phase II Nexus Fee Program

ID	Nexus District	Main Route	Brief Description	Approximate cost (Million \$)
1	D1	Santa Fe Way	Santa Fe Way, Burbank-Rosedale Hwy	88.20
2	D1	7th Std Road	I-5/7th Std Road interchange	20.00
3	D1	7th Std Road	7th Std Road-passing lanes, 43 - I-5	6.74
4	D1	7th Std Road	7th Std Road Concrete Rehab, 43 - I-5	50.34
5	D1	7th Std Road	7th Std Road Concrete Rehab, 43 - 99	62.04
6	D1	Cherry Avenue	Merced Avenue- Expressway, 2 canal bridges	59.42
7	D1	Cherry Avenue	Cherry Avenue - Expressway, 2 grade seps.	53.59
8	D1	Superior Road	Superior Rd - Expressway, 1 grade separation	84.44
9	D1	SR 99	SR-99/Merced Avenue interchange Improvements	30.00
D1 Projects				\$483.18
10	D2	Wheeler Ridge	Wheeler Ridge/Laval Rd TRCC core, safety rehab	11.42
11	D1	Mt Vernon	Mt Vernon/SR 58-Planz extension and improvements	28.41
12	D3	Pond Road	Pond Rd, Richgrove/SR-43/ SR-155, safety improvement and rehab	3.00
13	D4	Tehachapi Blvd	Near SR-58 Summit interchange	1.20
All Projects				498.80

Other Roadway Improvement Strategies

The Kern region has been attracting distribution centers because of its central location to both State and western U.S. populations and logistics routes. The region has recently begun to target high pay automated warehousing/manufacturing through the B3K economic development effort. Several freight clusters have developed throughout the County. Currently, there are over 50 distribution/manufacturing facilities in the County with five distinctly defined clusters: Bakersfield, Shafter, Tejon Ranch, Delano/McFarland, and Mojave.

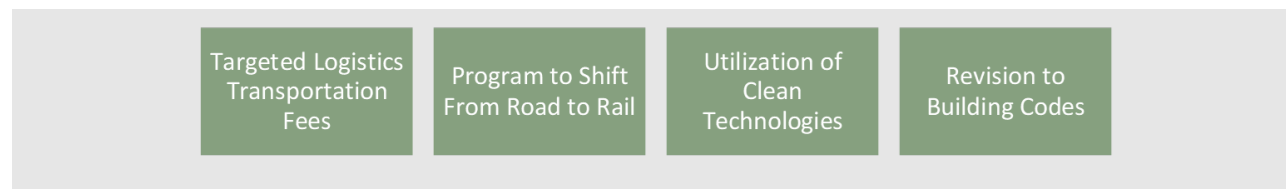
A large and growing segment of this target group is 3PLs, which are firms that provide outsourced (or “third party”) logistics services for part of, or all of, a company’s supply chain

management functions. Third party logistics providers typically specialize in integrated operations consisting of warehousing, transportation, and light assembly services. These services can be scaled and customized to customers' needs based on market conditions. Often, these services go beyond logistics and include value-added services related to the production or procurement of goods, which are also heavy transport users.

Historically, local governments in California have levied impact fees to help fund the expansion of the infrastructure needed to support new development. These charges support transportation infrastructure, as well as other important local services which many California jurisdictions have struggled to fund. State-imposed policies that restrict local taxes, such as Proposition 13, have left municipalities with limited means of raising revenue for infrastructure. However, the limitation of any impact fee is that revenue depends upon growth and is therefore cyclical. Although it provides funding for new capacity, revenue sources for backlogs, operations, and maintenance are still needed and the impact fees do not cover these costs.

With the advent of large warehouse and e-commerce facilities and the resulting large vehicle traffic, Kern County is facing significantly more pavement and secondary damage to the highways, and there is a need for policy options for the local governments to recapture the costs of roadway maintenance as well as limit the air emissions coming from this truck traffic. A related issue is that the evolutionary switchover to electric/ZEV vehicles will over time lead to significant reductions in fuel tax revenues, and a replacement user-based mileage fee to backfill this fuel tax revenue loss has not yet been identified.

When considering sustainable goods movement strategies for Kern County, the options include:



Targeted Logistics/Transportation Fees

To achieve an equitable fee system, it is recommended that all local governments within Kern County participate in a fee program, which will establish a forum for the local governments to cooperatively plan and fund mobility/transportation. This can result in a more predictable and less complex approach for both the local governments, property developers and occupant companies. Establishing a common approach ensures that each local government is charging development for its projected impacts on the transportation system and avoids the use of the fee for tax base competition.

These agreements would specify the partners in adopting the fee, which could include the County government, local municipalities, and/or Kern COG as the key transportation planning agency. Other partners, such as the Kern County Department of Airports, could also be included. Each local government would have full authority to establish, collect, and distribute the fees in accordance with the procedures included in the agreement. Funding from this structure would only cover a portion of Kern County's transportation needs.

Note that several of the jurisdictions have existing transportation related development impact fees with a nexus established list of transportation projects that commercial developments pay into. They include Bakersfield, Tehachapi and Kern County (Metro Bakersfield, Greater Tehachapi, and Rosamond/Willow Springs). The simplest way to avoid double billing development is to simply remove any duplicate projects from the regional logistics impact fee list if it's already on an existing local impact fee program list. Another option is to apportion the project cost between the two lists based on the truck-to-passenger vehicle use ratio and update the existing transportation impact fee. A future task will be to make this comparison.

These fee schemes under California law would require a nexus study. The following are some options to consider in assessing potential new fees.

Transportation Impact Fee Option #1 Logistics Mitigation Fee (square footage or trips)

<p>A one-time logistics mitigation impact fee could be imposed on all new warehouse construction throughout the County, based on facility size, to help pay for specific highway improvements. Fees collected would be used toward transportation improvements, such as auxiliary lanes at on-ramps and off-ramps or widening highways to mitigate the impact of highway truck traffic serving new warehouse facilities in the County. Rehabilitation projects that increase roadway Truck Index (TI) to accommodate future trucking growth are also eligible.</p>
<ul style="list-style-type: none"> By CA state law a "nexus study" would be required to validate the amount and the need for new mitigation fees imposed on any new warehouse development. The logistics nexus study would consider forecasted logistics growth and VMT, highway capacity deficiencies attributable to new warehouse development, estimated project costs, and the proposed warehouses' cost share of projects.
<ul style="list-style-type: none"> Riverside County, California, Transportation Commission https://www.rctc.org/wp-content/uploads/2019/05/2019.NexusStudy-Final.pdf This fee has not yet been approved, which will require approval by the County government or approval by 75% of the communities.
<ul style="list-style-type: none"> Reno, Nevada https://www.rtcwashoe.com/engineering-fees/regional-road-impact-fee/ This fee has been in effect since 1995

Transportation Impact Fee Option #2 Mobility Fee (vehicle miles traveled)

A mobility fee is a charge on all new development to provide mitigation for its impact on the transportation system. The charge is usually proportional to the increase in Vehicle Miles Traveled (VMT) generated by new development. However, a mobility fee is not a substitute for site-related improvements for safety, access and internal circulation, which may still be required under local land development regulations. Mobility fee programs and rate schedules should be

established on a countywide level at a minimum because the travel generated is rarely within a single jurisdiction.

Usually, current transportation impact fees do not cover all costs of transportation needs attributable to new development. A mobility fee that is applied to all new development may result in an increase in funding available for transportation, but funding from this structure would probably only cover a portion of Kern County's transportation needs. Each new development would be charged a mobility fee based upon the transportation service it consumes, treating transportation as a commodity. The working concept for a mobility fee is an impact fee that is modified for sensitivity to vehicle miles traveled.

Although a mobility fee is similar to an impact fee in that it is a charge on new development for its impacts on transportation facilities, the mobility fee as proposed in this report would be different from an impact fee in significant ways, including:

- A mobility fee would apply on a countywide basis
- A mobility fee would require a high level of intergovernmental coordination
- A mobility fee would be sensitive to vehicle or person miles traveled
- A mobility fee could be used to fund multi-modal transportation improvements for roadways, as well as transit, bikeway, pedestrian walkways and congestion management improvements/strategies
- A mobility fee could be used to fund improvements related to future autonomous support infrastructure, or an autonomous ZEV logistics district.
- A mobility fee could be used to promote a freight modal shift to rail program. Projects that ship primarily by rail would have a reduced VMT based fee.
- A mobility fee would be distributed among all the governmental entities responsible for maintaining impacted transportation facilities
- A mobility fee would reduce greenhouse gas emissions by providing incentives to promote compact, mixed-use, and energy efficient development

The Mobility Fee would focus on new development and would be used to fund planned multimodal transportation facilities and services. This fee would also be sensitive to the vehicle miles of travel (VMT) generated by new development. Each new development, regardless of type, will pay the fee in proportion to the new travel demand it creates.

- State of Florida http://www.lakesumtermtpo.com/pdfs/mobility_fee_methodology.pdf Joint Report on the Mobility Fee Methodology Study
- This authorizing legislation went into effect in 2010 and currently more than 25 counties have instituted a mobility fee

Freight Modal Shift Program

A freight modal shift program is one that provides incentives to shippers to move their goods to an alternative mode of transportation. This incentive is usually a financial reward for switching the shipping method of choice from truck to rail or water and is provided on the grounds that this shift would generate benefits that offset the cost of the incentives provided. In the case of Kern County, truck-to-rail modal shifts have the greatest overall potential because trucks are the dominant mode in terms of freight tonnage and freight commodity value, while rail serves many of the same routes and uses substantially less energy.

The idea behind modal shift as a policy tool is to reduce GHG emissions as well as other air contaminants, noise, and congestion on highways and lead to a decrease in traffic accidents resulting in injury or death. Additionally, truck use contributes to the deterioration of the public highway and road system. Heavier vehicles require exponentially higher pavement costs. This shift is based on the fact that railways are more fuel-efficient than trucks on a per ton basis.

When shippers make a mode choice, it involves the consideration of more than just the cost of transporting the cargo. Total logistics costs must also be considered such as transit time, warehousing and inventory costs, and safety stock requirements. In general, the higher the value of the goods, the more important are non-transportation logistics costs to the choice of the mode. While differences between non-transportation logistics costs typically are greater between truck and rail, there are differences between truck configurations as well that must be considered in an analysis.

In promoting a mode shift from truck to rail, rail is efficient at moving heavy or over-sized freight over long distances and also for intermodal moves of long-haul containerized freight. In certain markets, short-line railroads can successfully compete with trucks to haul large volumes of dense commodities relatively short distances. Trucks excel in providing time sensitive delivery services for high-value goods being transported over medium and short-haul distances. Raw materials and heavy freight going long distances are likely to continue their journey by rail, or some combination of truck, rail, and water.

Rail's major advantage over truck has historically been its lower costs. A rail service that offers lower costs than trucking, combined with comparable on-time performance and loss/breakage avoidance, can be extremely competitive with trucking, even if transit times are not as fast as trucking.

With the future growth in freight, it is anticipated that the railroads will make investments to allow them to compete more vigorously with trucks for medium-distance freight traffic, 250 miles to 500 miles, as well as in the capacity required to move heavy and long-distance shipments.

There is currently no large-scale containerized intermodal rail service in Kern County so the creation of the California Inland Trade Port would be an extremely important development for freight movement in Kern County and Central California.³ The study suggests that if the Inland Trade Port were to develop as three intermodal hub systems in the SJV, then it is likely that one

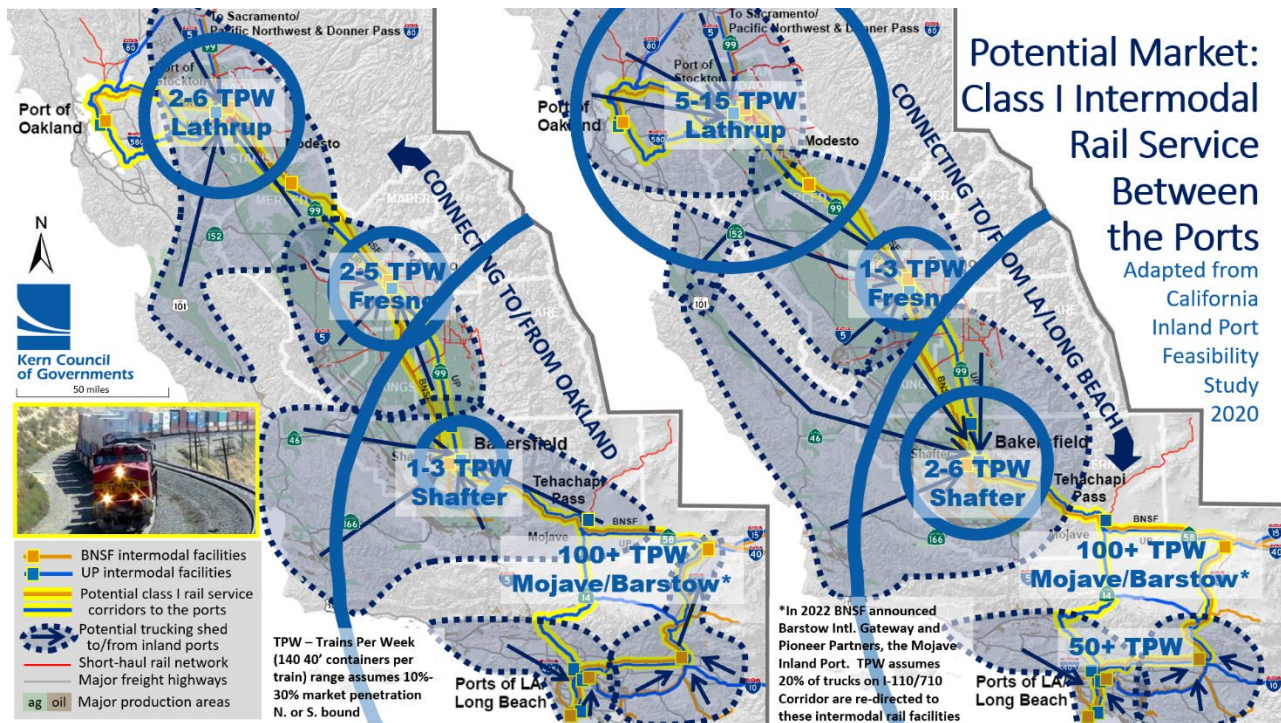
³ California Inland Port Project website. <https://sjvcogs.org/california-inland-port-project/>

of those hubs would be located in the Bakersfield/Shafter area. This would provide close-proximity access to new intermodal rail service – with a direct connection to the San Pedro Bay seaports, and it would be anticipated that there would be substantial cost benefits to inbound industrial supply chain and retail goods distribution, and also to outbound agriculture and other shippers.

A more detailed analysis of truck flow sheds by Kern COG (see **Figure 9**) shows that more trains per week would be served if the second hub were located in Bakersfield/Shafter. However, the market for Inland Trade Ports in Barstow, Mojave and/or Shafter, taps into the vast Southern California goods movement network. All three of these facilities are less than 150 miles from the San Pedro seaports with Mojave being the closest at 117 miles. The three sites are located at the three north gateways to Southern California: I-5 Shafter, SR 14 Mojave, and I-15 Barstow. All three are connected by State Route 58 which connects I-40 to I-5.

In 2022, BNSF announced their Barstow International Gateway will create a seven square-mile intermodal rail yard, and the capacity to divert containerized truck shipments to rail between the San Pedro seaports and Barstow. If 20 percent of the 2019 observed trucks on I-110/710 corridor connecting to the seaports were diverted to rail, that would total 5,000 trucks per day. At 300 40-foot containers per train, that would equal over 100 trains per week serving this facility, and more than double if you use the 140 containers per train from the California Inland Trade Port study. The Barstow facility is in the midst of the environmental process and has significant local support. The Mojave Inland Port located just off the UP mainline on a UP owned branch, completed environmental review in 2022 and is now fully entitled. Being developed by Pioneer Partners and the County of Kern, the facility is anticipated to handle 200 to 3,600 trucks per day or the equivalent of four to 72, trains per week. If both facilities were operating, they would likely split the traffic depending on if the containers were being shipped by UP or BNSF. This is reflected in **Figure 9** where the trains per week assume similar volumes if one, the other or both facilities are operating. It is also important to note that the infographic analysis is conservative because it excludes potential shipments connecting with the mid-west and east coast. The Shafter-Bakersfield facility will likely focus on rail shipments back east, before going South.

Figure 9. California Inland Trade Ports – Trains Per Week (TPW)



One more fact that favors early intermodal rail service from Mojave and/or Barstow is the fact that Searles Valley Minerals and Rio Tinto have a daily bulk haul round trip train to San Pedro Bay. So rail serving this facility initially would not impact rail traffic through the congested Southern California rail corridors.

In this case, it would be vital to ensure that the region's road system plan supported transportation to and from key industrial and distribution source points. In the case that there were only two intermodal hubs, it is possible that the most proximate hub would be near to, but north of, the Bakersfield region. In this scenario, the region's road system would need to support truck traffic to this location.

When considering the implementation of a Freight Modal Shift Program, there is a clear need for Kern County to have a systematic assessment of the shift potential and its associated GHG/health related emission reductions, maintenance, safety, congestion, and costs. Regional estimates can provide a starting point on how to think about this issue. Considerable data is already available on containerized rail market. Market- segmentation methods are frequently used given their simplicity which is done by analyzing the origin-destination pairs of freight shipments to identify the fraction of shipments that could potentially be transported by each mode. This method is capable of estimating a maximum feasible modal split. In any case, Kern County needs to be prepared for resistance from companies to make a change and have the time and patience to see the mode shift occur. This will require the County to forecast carefully and conservatively in implementing the program.

<ul style="list-style-type: none"> • Rail Usage Tax Credit – Tax credit on property taxes for an existing company or a newly locating company to move at least 10% of their product cargo on rail
<ul style="list-style-type: none"> • Incentive Fund - Create an incentive fund to subsidize the rail freight rate to make it competitive with trucking rates to encourage mode shift. The incentive could be designed to provide support to the railroads to offer competitive rates or an incentive could be paid directly to the company based upon the delta between the rail rate and the truck rate. This could be for a short period of time in recognition of the initial risk for employing a new mode in a company's logistics system.
<ul style="list-style-type: none"> ▪ Victoria, Australia Mode Shift Incentive Scheme (MSIS) https://transport.vic.gov.au/ports-and-freight/key-freight-projects ▪ This program has been in place since 2015 and has just been extended to 2024
<ul style="list-style-type: none"> ▪ Mode Shift Revenue Support (MSRS) Scheme in the UK https://www.gov.uk/ ▪ This program has been in place since 2010 and has been extended to 2025

Utilization of Clean Technology on the Highways

Zero Emission Trucks - Commercial fleets are increasingly considering zero-emissions trucks for their freight hauling operations as new models go into production and upfront purchase prices come down. In fact, product availability is improving rapidly. CALSTART is reporting that in the heavy-duty North American market alone, 19 zero-emission truck models (either battery electric or hydrogen fuel cell), from 14 manufacturers, are expected to be in production within the next three years. This represents an impressive 280 percent increase in the five Class 8 models commercially available today.

Overall, there are some common factors that affect the adoption of ZEVs:

- Upfront purchase costs
- Technology reliability concerns
- Range or trade-off with range
- Payload limits (Class 8 battery-electric trucks weigh up to 8,000 pounds more than a diesel Class 8 truck)
- Workforce training (e.g., drivers, maintenance crews, etc.)
- Lack of information about new technologies and incentives programs
- Lack of charging infrastructure and cost
- Slim profit margins that cause trucking companies to be risk averse
- Not many ZEV models on the market

In general, large fleets and companies are the ones experimenting with new technology and implementing pilots, small operators are largely not involved at this point.

Zero-emission trucks have higher upfront costs but lower operating costs than conventional trucks. Today, the total cost of ownership in California can be comparable to conventional trucks for certain duty cycles without grants or rebates. As battery prices fall and technology continues to improve, the total cost of ownership for ZEV trucks is expected to become more favorable. Incentives are currently available to offset some or all of the higher vehicle capital costs and some of the early infrastructure costs to help fleets begin transitioning to zero-emission vehicles now.

Figure 10. Kern High Priority Medium- and Heavy-Duty ZEV Infrastructure Projects

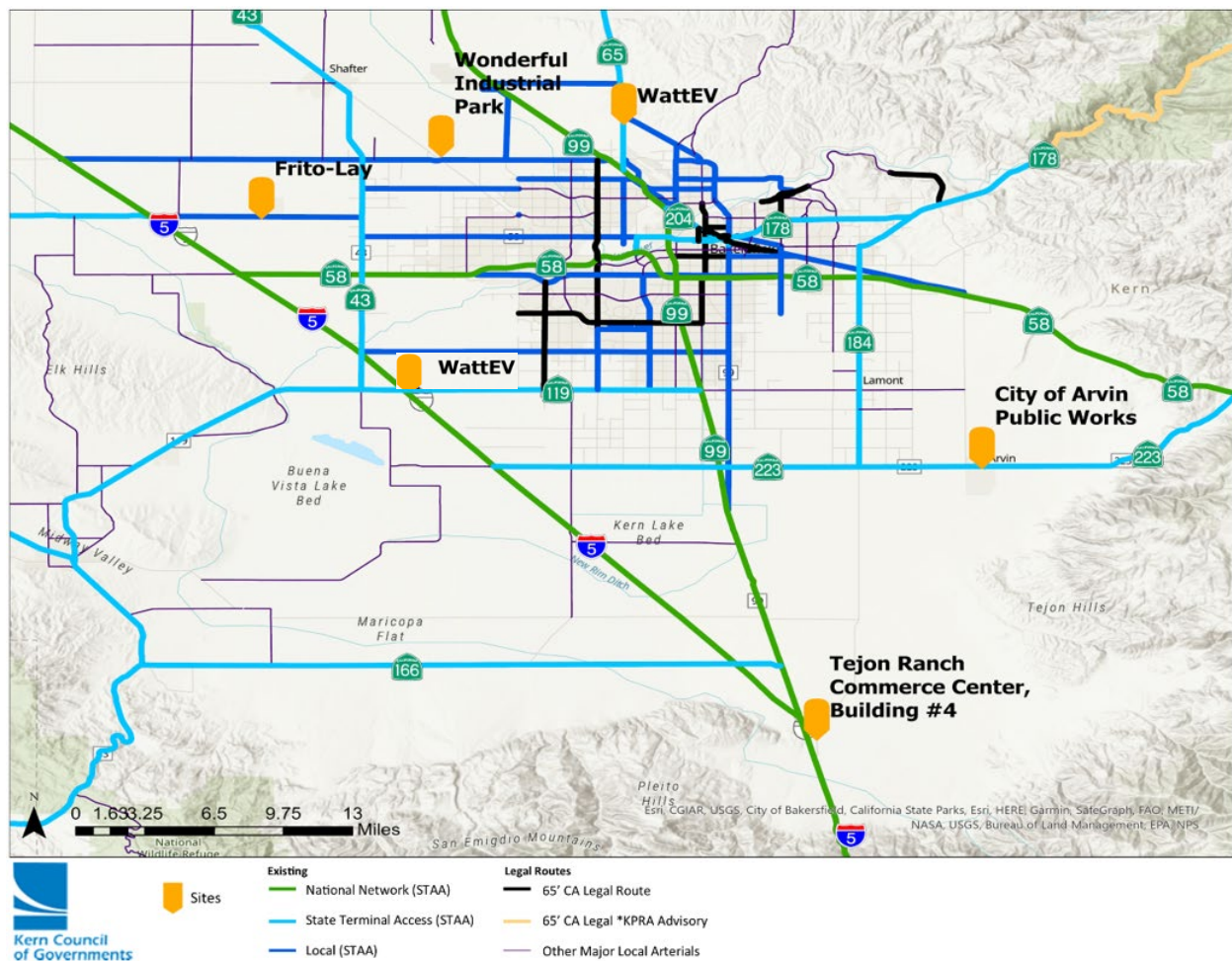
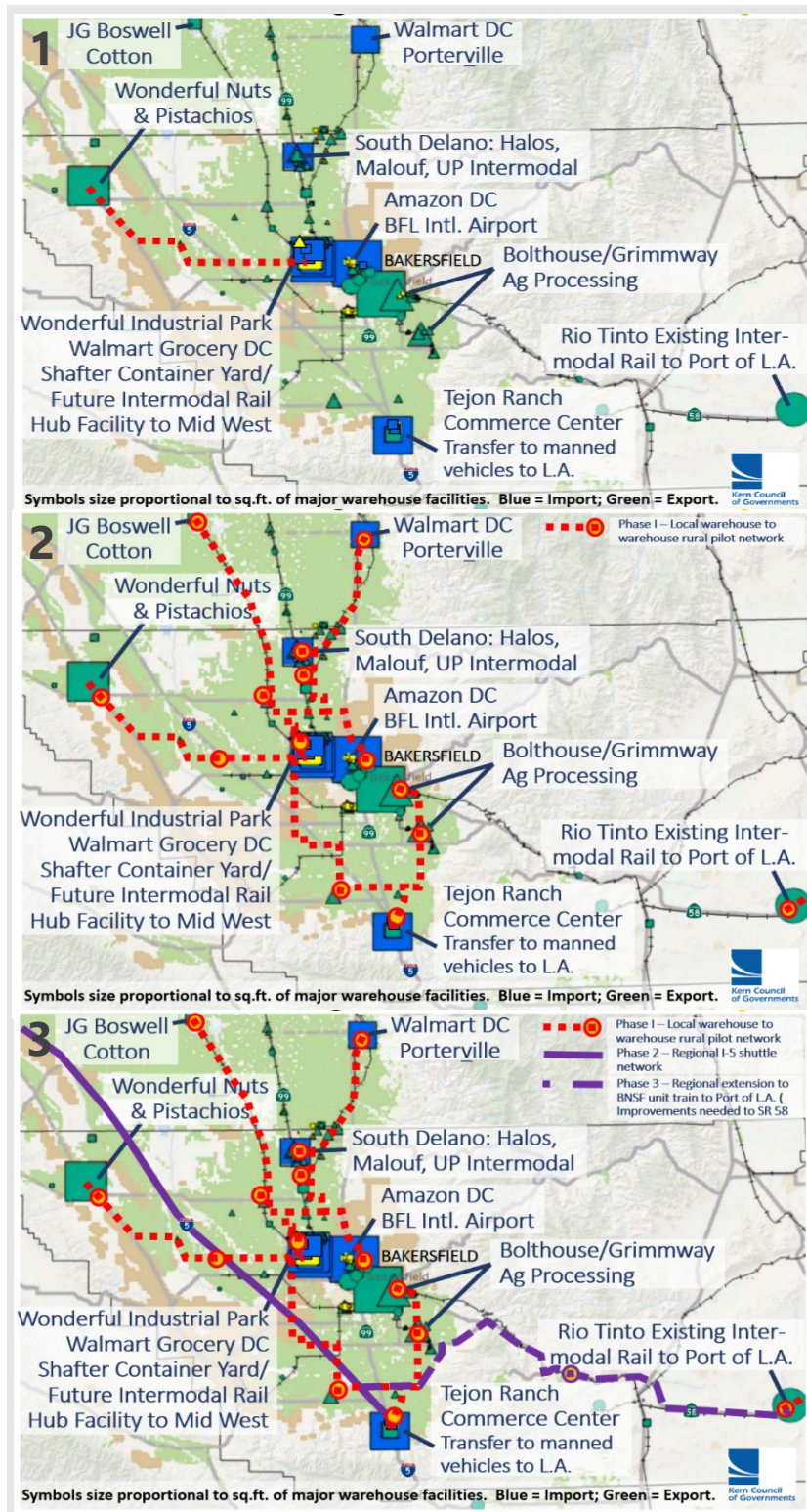


Figure 11. Kern SAFETEC 3-Phased Autonomous, ZEV Truck Network



Kern COG has prepared a Blueprint for Medium- and Heavy-Duty Zero Emission Vehicle Infrastructure. The draft study has identified 6 locations in central Kern to implement ZEV charging or fueling infrastructure (**Figure 11**).

Low Carbon Fuels - Another important part of the conversation is low-carbon liquid fuels that have a strategic role to play in the transition to a climate-neutral economy, particularly in the long-haul freight, shipping, and aviation sectors where no equivalent technological alternatives currently exist. These low-carbon liquid fuels are sustainable fuels from non-petroleum origin with no or very limited CO₂ emissions during their production and use. First blended with conventional fuels, these low-carbon fuels will progressively replace fossil-based fuels. Complementary to electrification and hydrogen technologies, low-carbon liquid fuels will be essential throughout the energy transition, ensuring security of supply and providing consumer choice.

Autonomous ZEV driving systems in trucks are an important element in the future of goods movement. But in addition to the long-haul freight trucks, there is another dynamic in the automated truck world that could provide a strategy to help remedy the emissions issues that Kern County currently faces. There are a number of companies that are using off-the-shelf vehicle guidance technologies (optical cameras sensors and steering systems) and have adapted these technologies to a new style truck delivery “pod”. Usually ZEVs, these pods are ground-up delivery vehicles that are purposely designed to support intra-company inventory management. These systems are meant to support automated transfer of cargo between company warehouse facilities. From our work with some of these companies, we believe that this technology application can be adapted to support intermodal facility cargo transfers to nearby warehouses. These systems are being actively marketed now, but we expect real-world deployment to begin in the next 2 or 3 years. The Phase 1 KARGO Sustainability Study identified a phased network or rural back roads to gradually test autonomous ZEV truck technology (see **Figure 11**). Initially, phase 1 could be a warehouse-to-warehouse route possibly repositioning empty containers for dual transactions where the container is shipped both directions full resulting in up to a 40 percent cost, fuel and emission savings. If the operations prove to be safe, the initial network could be expanded. Trips between a cluster of rural dairies and the dairy processing plant on rural, low-volume routes could be a possible next phase 2. Phase 3 might include testing on higher volume, higher speed routes in rural areas, such as I-5 (the purple line in **Figure 11**) as suggested in the I-5/SR-99 Goods Movement Study⁴ and the I-5 Freight Zero Emissions Route Operations (ZERO) Pilot Study.⁵ This phase could include a suggested additional truck lane, and if ZEV technology is used, it could allow for higher speed trucks similar to passenger vehicles with no impact to air emissions. The higher truck speeds would provide a good incentive for conversion to ZEV technology. Again, as autonomous operations prove safe, the I-5 rural autonomous truck Freeway testing corridor could be expanded to the intermodal trade ports and seaports with the ultimate goal of expanding their use throughout all urban freight corridors.

⁴ SJV Goods Movement Study I-5/99 Corridor. 2017. <https://www.kerncog.org/goods-movement/>

⁵ I-5 Freight Zero Study. 2022. <https://www.kerncog.org/goods-movement/>

Incentives for the Use of Clean Technologies on the Highways:

- **Existing Incentive Funding** - Several funding programs are available to support the use of advanced/clean technologies on California highways administered by CARB, federal agencies, and the San Joaquin Valley Air Pollution Control District. For example, in California, the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project provides point-of-sale rebates to offset the upfront cost of advanced technologies. A partnership between the California Air Resources Board and CALSTART, this program provides incentives for the purchase of cleaner and more efficient trucks and buses in California. These vouchers are intended to reduce about half the incremental costs of purchasing hybrid and zero-emission medium-duty and heavy-duty trucks and buses. Kern COG and/or the Kern Economic Development Corporation (KEDC) should fund staff to provide grant writing and other assistance to existing and planned industrial developments to implement low and ZEV clean technology.
- **Regional Truck Clean Tech Loan Program** - In conjunction with the San Joaquin Valley Air Pollution Control District (APCD), the East Kern APCD and/or a regional entity such as KEDC, the region could create a revolving loan program specifically designed for Kern County businesses to purchase clean technology trucks. Revolving funding pool could come from development mitigation, a transportation sales tax, or other voter approved funding mechanisms.
- **Fueling/Charging Infrastructure for MD/HD Trucks** – Kern COG has recently completed the Draft Kern County Blueprint for MD/HD ZEV Infrastructure with recommendations and identification of 6 early locations truck charging and refueling.⁶

⁶ Kern County MD/HD ZEV Infrastructure. 2023. <https://www.kerncog.org/goods-movement/>

Building Codes

Revise commercial/industrial building codes to require supporting electric truck charging infrastructure for EVSE in new construction and major renovations.

- Electric truck charging stations could be required in each new warehouse development

Incentives

- The San Joaquin Valley Air Pollution Control District provides incentives for the purchase of new and public Level 2 EV chargers. Businesses and public agencies can receive up to \$6,000 per EV charger. Funding per recipient is capped at \$50,000 annually.
- The California Pollution Control Financing Authority offers loans for the design, development, purchase, and installation of EV charging stations at small business locations in California. The maximum enrolled loan amount is \$500,000 per qualified Borrower
- The California Green Building Code of 2016 requires that all new development include pre-wiring for Level 2 charging
<https://www.sccgov.org/sites/dnz/Documents/Task-1A-EV-Best-Practices-Compendium.pdf>

Existing Impact Fee Programs

Fehr & Peers documented existing development impact fees for jurisdictions in Kern County to determine the total impact fee burden for the identified agencies. This information provided a basis for exploring other potential funding mechanisms to support infrastructure needed for future development as part of the Phase II KARGO effort. The sections below summarize the existing transportation impact fee programs for the following jurisdictions/agencies in Kern County:

- City of Bakersfield
- City of Tehachapi
- Kern County Rosamond-Willow Springs Specific Plan Areas
- City of Arvin
- City of Delano
- City of McFarland

The following jurisdictions were reviewed and did not have information available regarding development impact fee programs: California City, City of Maricopa, City of Shafter, City of Wasco. According to the City of Ridgecrest municipal code, development impact fees are assessed for fire facilities, traffic impacts, parks, law enforcement, and storm drainage. However, the fee schedule was not readily available.

City of Bakersfield

Table 8 shows the non-Transportation development impact fees in the City of Bakersfield, and **Table 9** shows the Transportation development impact fees. The Transportation development impact fees have been jointly adopted by Kern County. **Figure 12** shows the core area for which a lower fee rate applies.

Table 8. Non-Transportation Development Impact Fees in City of Bakersfield⁷

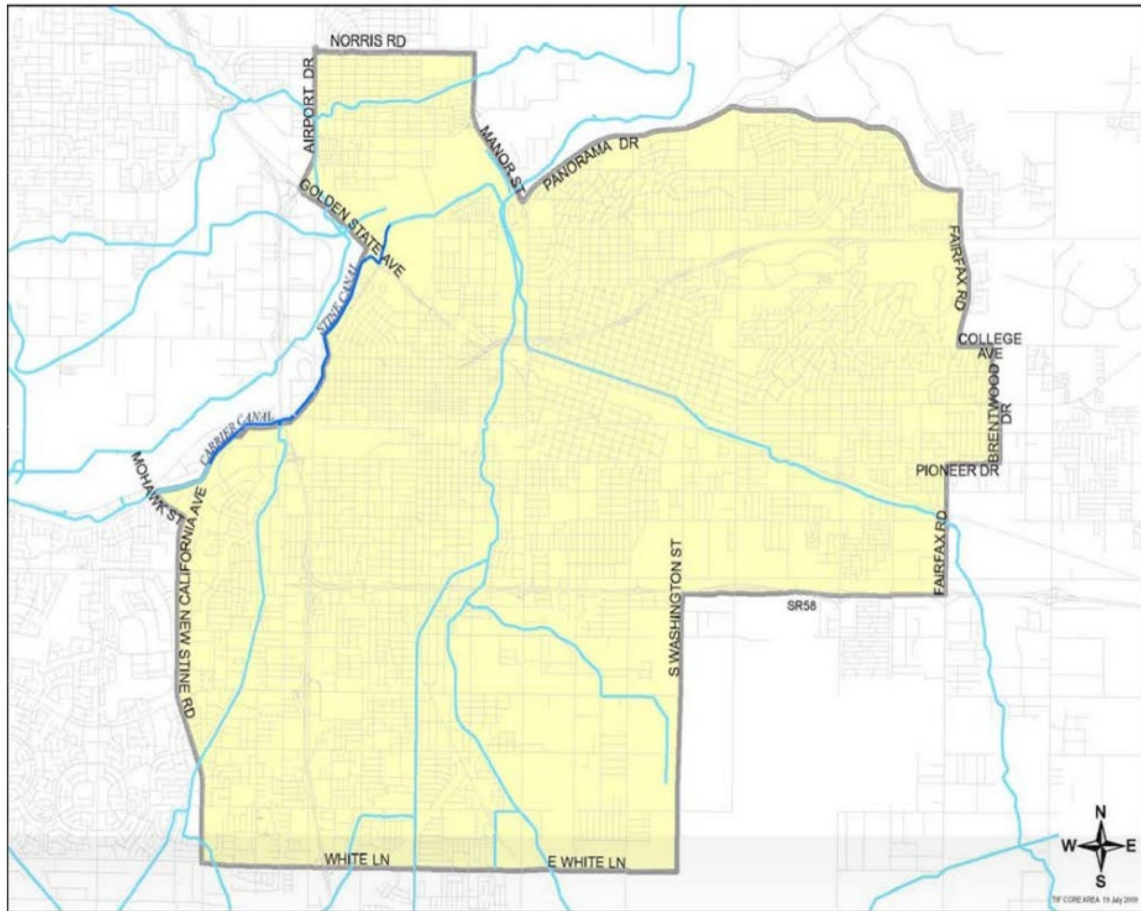
Impact Fee Type	Description	Impact Fee
Park	Fee applies to all independent dwelling units (includes senior housing). It does not apply to facilities such as extended care where the units do not contain a kitchen.	\$2,095 per residential unit
School	Fees vary widely by school district.	Residential: \$3.18 - \$6.85 per square foot
		Commercial/Industrial: \$0.66 per square foot
Sewer	N/A	Single Family: \$5,000 per unit
		Multiple Family: \$3,181 - \$3,600 per unit
		Commercial Industrial: \$227 - \$454 per fixture unit

⁷ City of Bakersfield Development Impact Fees – January 1, 2023 (accessed February 16, 2023):
<https://content.civicplus.com/api/assets/ae45223-0f4f-44d3-88e9-541b65a4a9ae?cache=1800>

Table 9. Transportation Development Impact Fees in City of Bakersfield⁸

Generator Category	Non-Core Area Impact Fee	Core Area Impact Fee
Single Family, Detached Residential	\$12,870 Per Unit	\$7,747 Per Unit
Multi-Family Residential	\$6,213 Per Unit	\$3,740 Per Unit
Industrial	\$186 Per ADT	\$112 Per ADT
Office Commercial		
Under 100,000 square feet	\$143 Per ADT	\$86 Per ADT
100,000 – 199,999 square feet	\$163 Per ADT	\$98 Per ADT
200,000 square feet and above	\$175 Per ADT	\$106 Per ADT
Public/government	\$157 Per ADT	\$95 Per ADT
Retail Commercial		
Under 10,000 square feet	\$78 Per ADT	\$47 Per ADT
10,000 – 49,999 square feet	\$110 Per ADT	\$66 Per ADT
50,000 – 99,999 square feet	\$167 Per ADT	\$101 Per ADT
100,000 – 199,999 square feet	\$178 Per ADT	\$107 Per ADT
200,000 – 299,999 square feet	\$216 Per ADT	\$130 Per ADT
300,000 – 499,000 square feet	\$233 Per ADT	\$141 Per ADT
500,000 square feet and above	\$236 Per ADT	\$142 Per ADT

⁸ City of Bakersfield Development Impact Fees – January 1, 2023 (accessed February 16, 2023):
<https://content.civicplus.com/api/assets/ae45223-0f4f-44d3-88e9-541b65a4a9ae?cache=1800>

Figure 12. City of Bakersfield Transportation Impact Fee Core Area⁹

City of Tehachapi

Like the City of Bakersfield, the City of Tehachapi has a Transportation Impact Fee Program that was jointly adopted by Kern County and features a core area for which a lower fee rate applies. According to the Kern County Code of Ordinances, the Tehachapi Region Core Area includes, "those portions under County jurisdiction enclosed within the following described boundary: The Point of Beginning is at the intersection of the centerline of Dennison Road and southline of the State Route 58 right-of-way; thence proceeding southerly along said centerline of Dennison Road to East Quarter Corner of Section 28, Township 32 South, Range 32 East, MDM (aka Abajo Road or Pinon Road alignment); thence proceeding westerly along said midsection section lines of Sections 28, 29 to a point on the centerline of Tucker Road; thence northerly along said center line of Tucker Road to the southline of the State Route 58 right-of-way; thence

⁹ City of Bakersfield Development Impact Fees – January 1, 2023 (accessed February 16, 2023): <https://content.civicplus.com/api/assets/ae45223-0f4f-44d3-88e9-541b65a4a9ae?cache=1800>

proceeding easterly along said southline of the State Route 58 right-of-way to the centerline of Dennison Road, the Point of Beginning.” **Table 10** shows the Transportation development impact fees in the City of Tehachapi.

**Table 10. Fee-Per-Trip for Tehachapi Region
Transportation Impact Fee Program – General**

Land Use	Non-Core Area Impact Fee	Core Area Impact Fee
Residential (Per Dwelling Unit)		
Single Family Residential Units	\$4,772	\$2,952
Multi-Family Residential Units	\$3,351	\$2,073
Non-Residential (Per ADT)		
Industrial	\$176	\$109
Office Commercial:		
Under 100,000 square feet	\$145	\$90
100,000 – 199,999 square feet	\$145	\$90
200,000 square feet and over	\$145	\$90
Retail Commercial:		
Under 10,000 square feet	\$36	\$22
10,000 – 49,999 square feet	\$62	\$39
50,000 – 99,999 square feet	\$89	\$55
100,000 square feet and over	Minimum of \$89 or more based upon analysis	Minimum of \$55 or more based upon analysis

Source: Kern County Municipal Code Section 17.60.120 (accessed February 16, 2023) ¹⁰

Kern County – Rosamond-Willow Springs Specific Plan Area Transportation Impact Fee Program

There is an established Rosamond-Willow Springs traffic impact fee that applies to the Rosamond and Willow Springs Specific Plan areas in Kern County. **Table 11** presents the associated fee for various land use categories.

¹⁰ Kern County Municipal Code Section 17.60.120 (accessed February 16, 2023):
https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT17BUCO_CH17.60TRIMFE_17.60.140TERETRIMFE

Table 11. Fee-Per-Trip for Rosamond-Willow Springs Transportation Impact Fee Program

Land Use Type	Generator Category	Impact Fee
Residential (Per Living Unit)	Single Family, Detached (Including mobile homes)	\$1,461
	Multi-Family (including apartments, condominiums, mobile home parks)	\$891
<i>Nonresidential per Average Daily Traffic (ADT) Trip</i>		
Industrial	Heavy and Service Industry (including general manufacturing, industrial park)	\$87
Light Industrial	Warehousing, Mini-Warehouse	\$38
Office ¹	Under 100,000 square feet	\$33
	100,000 – 199,999 square feet	\$39
	200,000 square feet and over	\$41
Commercial Retail ²	Under 10,000 square feet	\$39
	10,000 – 49,999 square feet	\$25
	50,000 – 99,999 square feet	\$28
	100,000 – 199,999 square feet	\$31
	200,000 – 299,999 square feet	\$35
	300,000 – 399,999 square feet	\$44
	400,000 – 499,999 square feet	\$53
	500,000 – 599,999 square feet	\$64
	1,000,000 square feet and over	\$71

Notes:

¹ Fees are assessed per 1,000 square feet of building area and include medical offices, clinics, hospitals, day care, schools, libraries, churches, and banks).

² Fees are assessed per 1,000 square feet of building area.

Source: Kern County Municipal Code Section 17.60.120 (accessed February 16, 2023) ¹¹

¹¹ Kern County Municipal Code Section 17.60.120 (accessed February 16, 2023):
https://library.municode.com/ca/kern_county/codes/code_of_ordinances?nodeId=TIT17BUCO_CH17.60TRIMFE_17.60.120ROLLSPTRIMFE

City of Arvin

Table 12 presents the development impact fee schedule for the City of Arvin, published in 2014.

Table 12. City of Arvin Development Impact Fees

Type of Land Use	Impact Fee					
	Police	Parks	Sewer	Schools	Traffic	Water
Residential						
Single Family	\$150 per unit	\$2,500 per unit	\$4,400 per unit	\$7.79 per sf	\$7,646 per unit	\$4,160 per unit
Duplex	\$100 per unit	\$2,500 per unit	\$4,400 per unit	\$7.79 per sf	\$5,313 per unit	Contact ACSD
Triplex	\$100 per unit	\$2,500 per unit	\$3,960 per unit	\$7.79 per sf	\$5,313 per unit	Contact ACSD
4-plex or larger	\$100 per unit	\$2,500 per unit	\$3,960 per unit	\$7.79 per sf	\$5,313 per unit	Contact ACSD
Motels and hotels	\$350 per acre	-	\$1,320 per unit	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Convalescent hospitals	\$350 per acre	-	\$1,320 per bed	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Rest/nursing homes	\$350 per acre	-	\$1,320 per bed	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Commercial						
Small retail shops/offices	\$350 per acre	-	\$4,400 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Laundries/dry cleaners	\$350 per acre	-	\$2,112 per machine	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Medical/dental offices	\$350 per acre	-	\$11,000 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
supermarkets	\$350 per acre	-	\$158,400 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Grocery stores	\$350 per acre	-	\$16,280 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Restaurants (<35 seats)	\$350 per acre	-	\$17,160 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Restaurants (35+ seats)	\$350 per acre	-	\$25,080 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Bars/taverns/lounges	\$350 per acre	-	\$15,840 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD

Type of Land Use	Impact Fee					
	Police	Parks	Sewer	Schools	Traffic	Water
Car washes	\$350 per acre	-	\$7,700 per stall	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Service stations	\$350 per acre	-	\$6,160 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Auto repair shops	\$350 per acre	-	\$6,160 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Mortuaries and kennels	\$350 per acre	-	\$6,600 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Recreational uses	\$350 per acre	-	\$17,600 per facility	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Quasi-Public/Public						
Churches	\$350 per acre	-	\$4,840 per building	-	\$7,874 per KSF	Contact ACSD
Schools	\$350 per acre	-	\$136 per student	-	\$7,874 per KSF	Contact ACSD
Industry						
Food processing	\$350 per acre	-	\$25,080 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Light manufacturing uses	\$350 per acre	-	\$4,400 per building	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Public/Private Uses Not Listed						
Use w/ 14 employees or less	\$350 per acre	-	\$4,400 per use	\$0.51 per sf	\$7,874 per KSF	Contact ACSD
Use with 15+ employees	\$350 per acre	-	\$4,400 per use	\$0.51 per sf	\$7,874 per KSF	Contact ACSD

Source: City of Arvin Development Impact Fees¹²

¹² City of Arvin Development Impact Fees – 2014 (accessed February 16, 2023):
<https://www.arvin.org/DocumentCenter/View/196/Development-Impact-Fee-Schedule-PDF>

City of Delano

The following fee schedule tables are reproduced from City of Delano Resolution No. 2013-59.

Table 13. City of Delano Development Impact Fees – Water & Sewer

Land Use Category	Water	Sewer
<i>Residential</i>		
Single-Family Residential	\$2,253.51 per unit	\$5,066.81 per unit
Multi-Family Residential	\$1,149.29 per unit	\$2,938.75 per unit
Senior Residential/Assisted Living	\$946.47 per bed	\$2,128.06 per bed
<i>Non-Residential</i>		
General Retail	\$540.84 per ksf	\$1,874.72 per ksf
Restaurant	\$5,363.36 per ksf	\$18,645.85 per ksf
Bars/Lounge	\$1,825.34 per ksf	\$6,485.51 per ksf
Hotel/Motel	\$473.24 per room	\$2,330.73 per room
Theater	\$676.05 per ksf	\$2,330.73 per ksf
Laundromat	\$946.47 per washer	\$3,242.76 per washer
Car Wash	\$4,507.02 per stall	\$10,133.61 per stall
Office/Medical Office	\$1,081.69 per ksf	\$3,698.77 per ksf
Service Commercial	\$540.84 per ksf	\$1,874.72 per ksf
Manufacturing	\$1,081.69 per ksf	\$3,546.76 per ksf
Manufacturing, dry goods only	\$225.35 per ksf	\$456.01 per ksf
Warehouse/Distribution	\$112.68 per ksf	\$456.01 per ksf
Mini Storage	\$2,253.51 per dwelling unit	\$5,066.81 per dwelling unit
School/Day Care	\$1,261.97 per ksf	\$2,482.73 per ksf
Church/Public Gathering Facility	\$676.05 per ksf	\$2,330.73 per ksf
Hospital	\$946.47 per bed	\$4,661.46 per bed
<i>Alternative Calculations</i>		
Alternative water calculation	\$75.12 per fixture unit	-
Alternative Sewer Calculation	-	\$241.28 per fixture unit

Table 14. City of Delano Development Impact Fees – Circulation

Land Use Category	Water
Residential	
Single-Family Residential	\$4,344.96 per unit
Multi-Family Residential	\$3,051.01 per unit
Senior Residential/Assisted Living	\$1,579.98 per bed
Non-Residential	
General Retail	\$11,236.55 per ksf
Hotel/Motel	\$2,774.25 per room
Gasoline Service Station	\$17,302.71 per pump
General Office	\$5,329.76 per ksf
Medical/Dental Office	\$11,713.65 per ksf
Industrial/Service Commercial	\$2,230.16 per ksf
Warehouse/Distribution < 100,000 sf	\$2,540.75 per ksf
Warehouse/Distribution > 100,000 sf	\$645.43 per ksf
Mini Storage	\$686.41 per dwelling unit
School	\$3,147.46 per ksf
Church/Public Gathering Facility	\$2,314.52 per ksf

Table 15. City of Delano Development Impact Fees – Storm Drainage, Police Facilities, & Fire Facilities

Land Use Category	Storm Drainage	Police Facilities	Fire Facilities
Residential			
Single-Family Residential	\$1,080.67 per unit	\$421.39 per unit	\$668.57 per unit
Multi-Family (< 15 units per acre)	\$640.40 per unit	\$160.53 per unit	\$254.69 per unit
Multi-Family (> 15 units per acre or more)	\$426.93 per unit	\$93.64 per unit	\$148.57 per unit
Non-Residential			
Commercial	\$8,165.09 per acre	\$1,685.55 per acre	\$2,674.29 per acre
Service Commercial	\$6,645.39 per acre	\$1,685.55 per acre	\$2,674.29 per acre
Industrial	\$7,684.79 per acre	\$1,685.55 per acre	\$2,674.29 per acre
Community Facilities	\$1,921.20 per acre	\$1,685.55 per acre	\$2,674.29 per acre

Table 16. City of Delano Development Impact Fees – Park Development, Park Acquisition, & General Government Facilities

Land Use Category	Park Development	Park Acquisition	General Government Facilities
Residential Projects < 80 Units			
Single-Family Residential	\$2,029.57 per unit	\$927.56 per unit	\$955.51 per unit
Multi-Family (< 15 units per acre)	\$773.17 per unit	\$353.36 per unit	\$364.00 per unit
Multi-Family (> 15 units per acre or more)	\$451.02 per unit	\$206.12 per unit	\$212.33 per unit
Residential Projects >= 80 Units			
Single-Family Residential	\$1,368.36 per unit	\$371.02 per unit	\$955.51 per unit
Multi-Family (< 15 units per acre)	\$521.28 per unit	\$141.34 per unit	\$364.00 per unit
Multi-Family (> 15 units per acre or more)	\$304.08 per unit	\$82.45 per unit	\$212.33 per unit
Non-Residential			
Commercial	N/A	N/A	\$3,822.03 per acre
Service Commercial	N/A	N/A	\$3,822.33 per acre
Industrial	N/A	N/A	3,822.33 per acre
Community Facilities	N/A	N/A	\$3,822.33 per acre

Source of all tables: City of Delano Resolution No. 2013-59 (accessed February 16, 2023) ¹³

City of McFarland

The City of McFarland published a Development Impact Fee Update Study in November 2020 which provided an analysis of development impact fees needed to support future development in the City of McFarland through 2040. **Table 17** below summarizes the development impact fees that meet the City's identified needs and comply with the requirements of the Mitigation Fee Act. **Table 18** summarizes the City's proposed impact fee schedule. The parks and recreation facilities fees and traffic facilities fees have been reduced to lower the overall fee burden. City staff identified the target fee level for single family units, and the fees for other land uses were reduced proportionally.

¹³ City of Delano Resolution No. 2013-59 (accessed February 16, 2023):
<https://www.cityofdelano.org/DocumentCenter/View/3374/2013-Impact-Fees?bidId=>

Table 17. City of McFarland Maximum Justified Development Impact Fee Schedule¹⁴

Type of Land Use	Impact Fee							
	General Government	Law Enforcement	Parks	Fire Protection	Water	Sewer	Storm Drain	Traffic
Residential – Per Dwelling Unit								
Single Family	\$1,957	\$1,163	\$4,524	\$289	\$4,101	\$1,499	\$648	\$8,960
Multifamily	\$1,747	\$1,037	\$4,039	\$258	\$3,651	\$1,334	\$395	\$5,973
Commercial – per KSF								
Commercial	\$346	\$205	-	\$100	\$984	\$210	\$661	\$11,238
Office	\$440	\$260	-	\$128	\$1,189	\$210	\$642	\$14,303
Industrial	\$171	\$102	-	\$50	\$1,477	\$180	\$939	\$8,487

Table 18. City of McFarland Proposed Development Impact Fee Schedule¹⁵

Type of Land Use	Impact Fee							
	General Government	Law Enforcement	Parks	Fire Protection	Water	Sewer	Storm Drain	Traffic
Residential – Per Dwelling Unit								
Single Family	\$1,957	\$1,163	\$2,300	\$289	\$4,101	\$1,499	\$648	\$5,700
Multifamily	\$1,747	\$1,037	\$2,053	\$258	\$3,651	\$1,334	\$395	\$3,800
Commercial – per KSF								
Commercial	\$346	\$205	-	\$100	\$984	\$210	\$661	\$7,149
Office	\$440	\$260	-	\$128	\$1,189	\$210	\$642	\$9,099
Industrial	\$171	\$102	-	\$50	\$1,477	\$180	\$939	\$5,399

¹⁴ City of McFarland Development Impact Fee Update Study:
<https://www.mcfarlandcity.org/DocumentCenter/View/2291/McFarland---Impact-Fee-Update-Report---Final---11-16-20>

¹⁵ City of McFarland Development Impact Fee Update Study:
<https://www.mcfarlandcity.org/DocumentCenter/View/2291/McFarland---Impact-Fee-Update-Report---Final---11-16-20>

Competitiveness Analysis

Economic & Planning Systems, Inc. (EPS) evaluated the existing development impact fees and overall economic competitiveness of Kern County relative to peer jurisdictions for warehouse and industrial land uses. This analysis explicitly addresses Task 3.3: Regional Competitiveness Report.

Development impact fees have become an increasingly used mechanism among California jurisdictions to require new development to fund the demands it places on local and regional infrastructure and capital facilities. KernCOG wishes to evaluate strategies to balance the competitiveness and sustainability of its growing goods-movement (logistics) industry and bolster countywide efforts to mitigate the industry's impacts on the regional transportation system and the surrounding communities.

Accompanying this section of the report is a presentation that EPS gave in August 2022 (**Appendix A6**), which provided a high-level overview of development feasibility and the potential net economic impact of a prospective logistics mitigation fee. The presentation and this analysis consider two regions: 1) Kern County and 2) a more extensive regional area that includes key markets in the Inland Empire, High Desert, and further in the San Joaquin Valley.

Key Takeaways

- **Existing development impact fees for warehouse and industrial uses are relatively low.** Existing impact fees charged on industrial development in Kern County make up less than five percent of the project value for a prototype industrial project. For context, when total nonresidential development impact fees make up less than five percent of project value, in most cases, the development economics of the project can absorb the burden from the impact fee. Still, every project is different, and the ability to absorb the impact fee burden depends on the project's specific details. It is also important to consider that some jurisdictions in Kern County have higher impact fee burdens than cities in the Inland Empire, suggesting a potentially less competitive position for Kern County. That said, impact fee burdens in Kern County are significantly lower than in Victorville and Tracy - two prominent logistics hubs in California.
- **Demand factors likely drive regional differences in rents and fees.** Lease Rates for industrial properties in Northern and Southern San Joaquin Valley are higher than in Central San Joaquin Valley because the former two are more strategically located to the Port of Oakland and the Port of Los Angeles/Long Beach. Lease rates for logistics-related facilities are high in Eastern Kern County, likely due to the region being more integrated with the High Desert region, an area with high lease rates due to its strategic location in the Inland Empire, close to Interstate 10 and Interstate 15 – two major American trade corridors.
- **A New KARGO fee could have positive and negative impacts.** Positive economic impacts are associated with the utility of new transportation infrastructure. Meanwhile,

increased development costs from a new KARGO fee could negatively affect the financial feasibility of new industrial projects. Ultimately, the net economic impact will depend on the percent increase in overall fees caused by the additional KARGO fee as well as the type of facilities covered by the fee.

Purpose of Competitiveness Analysis

This competitiveness analysis aims to understand how a KARGO impact fee might affect real estate development feasibility and Kern County's competitive position for logistics uses. Also, comparing the effects of impact fees with other prominent industrial areas in the San Joaquin Valley, the High Desert, and the Inland Empire gives valuable insight into how other areas are successfully operating impact fee programs without deterring the development of industrial properties.

Ultimately, lower cost burdens on industrial development translate to higher competitiveness for logistics uses, all else equal, and this notion serves as a starting point for "right-sizing" a new logistics mitigation fee program, a future task of the KARGO Sustainability Study. Indeed, specific components of a fee program that this analysis may inform may include but are not limited to fee amount and coverage, facilities covered by the fee, and any funding gaps not financed by the fee that require other financing tools and resources.

Trade Area Definitions

Table 19 lists and defines the trade areas utilized for the purposes of this analysis. Trade areas were selected to 1) span the San Joaquin Valley and 2) represent robust logistics regions across California for evaluating the relative competitiveness of Kern County jurisdictions.

Table 19. Trade Areas

Area	Definition
High Desert	NE Los Angeles, SE Kern, and San Bernardino counties (cities of Barstow, Lancaster, and Victorville)
Inland Empire	Riverside County and San Bernardino County
Kern County	
East of Tehachapi Mountains	Including cities of Ridgecrest and Tehachapi
West of Tehachapi Mountain	Including cities of Bakersfield and Delano
San Joaquin Valley	
Central	Including Counties of Fresno and Madera
North	Counties of San Joaquin, Stanislaus, and Merced
South	Counties of Kings, Tulare, and Kern

Methodological Approach

This analysis assumed that the economic burden of impact fees can be approximated by their overall magnitude (i.e., the fee amount) relative to the final market value of the development that is subject to the fees. To estimate whether an impact fee might be over burdensome requires looking at the existing fee burden (all fees exacted on a particular type of development) of a jurisdiction as a share of the finished market value of a “Prototype Project” and determining whether there is enough headway or “room” for additional impact fees. To accomplish this and to compare fee burdens among peer jurisdictions, EPS developed a prototype project with the following characteristics:

- Newly constructed industrial property (built any time after 2012)
- Site area: 9.56 acres
- Gross building area: 106,320
- Rentable building area: 105,699
- Rental income derived from lease rates: varies by jurisdiction; based on lease rates of Trade Area
- Capitalization rate: 5.6 percent

Peer jurisdictions include select cities within the trade areas discussed above, particularly cities with robust logistics industries, such as those in the Inland Empire, the High Desert, and Northern San Joaquin Valley. Impact fee data for all categories except utilities were collected for each jurisdiction studied.

To derive the finished market value of the prototype project, EPS estimated the net operating income of the prototype project based on prevailing lease rates (which vary depending on the trade area assigned to the jurisdiction). The final project value is derived from capitalizing net operating income at a rate of 5.6 percent. EPS evaluated fee burdens across each jurisdiction based on the amount of total fees as a percentage of finished market value.

It is important to note that differences in fee burdens across jurisdictions are attributable to either variations in fee levels and lease rates or both. For example, the difference between Ridgecrest (one percent existing fee burden as a percent of project value) and Delano (2 percent existing fee burden as a percent of project value) in Kern County is that lease rates for industrial properties are significantly higher in Eastern Kern County (Ridgecrest’s trade area) than in southern San Joaquin Valley (Delano’s trade area) in general despite the two cities having similar total fees.

Industrial Lease Rates and Impact Fee Categories

Table 20 and **Table 21** show the annual per square foot lease rates used in this analysis. All lease rates reflect market conditions as of the first quarter of 2022 (the most recent quarter for which reliable data were available at the time of data collection). Lease rates for newly constructed properties are for industrial properties built after 2012. All data were collected from CoStar Group.

Table 20. Comparison of Annual Industrial Lease Rates

Area	Food Processing/ Manufacturing	Warehouse/Distribution/ Truck Terminals
High Desert	\$14.72	\$12.00
Inland Empire	\$12.23	\$11.20
Kern County	\$11.01	\$8.38
East of Tehachapi Mountains	\$11.99	\$9.45
West of Tehachapi Mountains	\$11.09	\$8.34
San Joaquin Valley	\$8.80	\$7.77
Central	\$8.40	\$7.16
North	\$8.38	\$7.92
South	\$9.77	\$7.91

Table 21. Comparison of Annual Industrial Lease Rates for Newly Constructed Properties

Area	Food Processing/ Manufacturing	Warehouse/Distribution/ Truck Terminals
High Desert	\$17.35	\$12.83
Inland Empire	\$13.68	\$10.97
Kern County	\$11.58	\$7.64
East of Tehachapi Mountains	N/A	\$14.68
West of Tehachapi Mountains	\$11.58	\$7.62
San Joaquin Valley	\$10.49	\$7.91
Central	\$8.28	\$6.80
North	\$10.17	\$8.21
South	\$11.58	\$7.54

Table 22 and **Table 23** show which trade area lease rates were used for each jurisdiction. It is important to note that trade areas are coterminous with the studied jurisdiction if there is enough data on lease rates for newly constructed properties. Otherwise, a lease rate for a larger geographical area is used based on historical lease rate similarities.

Table 22. Annual Lease Rates Used by Jurisdictions in Kern County

Location	Bakersfield	Kern (E. of Tehachapi Mountains)	SJV South	Tehachapi
Industrial (Q2-2022; built after 2012)	\$9.23	\$12.35	\$8.05	\$12.93
Location				
City of Arvin		X		
City of Delano			X	
City of McFarland	X			
City of Ridgecrest		X		
Metro Bakersfield Core Area	X			
Rosamond-Willow Springs S.P.A		X		
Tehachapi Region				X
Tehachapi Region Core Area				X

Note: Lease rates for larger geographical (market) aggregates were used when reliable data for industrial properties built after 2012 were unavailable at the jurisdiction level. When necessary, the lease rates of larger markets were chosen according to the similarity shared between their historical lease rates and the historical lease rates of the Kern "peer" jurisdictions

Table 23. Annual Lease Rates Used by Peer Jurisdictions

Location	Fresno	Inland Empire	Norco	Temecula	Tracy	Victorville
Industrial (Q2-2022; built after 2012)	\$6.76	\$11.10	\$12.72	\$13.29	\$9.05	\$12.69
Location						
City of Calimesa		X				
City of Fresno	X					
City of Norco			X			
City of Temecula				X		
City of Tracy					X	
City of Victorville						X

Note: Lease rates for larger geographical (market) aggregates were used when reliable data for industrial properties built after 2012 were unavailable at the jurisdiction level. When necessary, the lease rates of larger markets were chosen according to the similarity shared between their historical lease rates and the historical lease rates of the Kern "peer" jurisdictions.

Table 24 and **Table 25** show the industrial impact fee categories studied in this analysis. Notably, utility categories – namely, sewer/wastewater and water – were excluded from this analysis. Tejon Ranch and the City of Shafter, two areas anticipated to accommodate significant near-term logistics development in Kern County, were also excluded from this analysis due to the lack of reliable impact fee information. The markers in the figures below indicate whether a jurisdiction charges the associated fee.

Table 24. Industrial Impact Fee Categories in Kern County

Fee Category	City of Arvin	City of Delano	City of McFarland	City of Ridgecrest	Metro Bakersfield Core Area*	Tehachapi Region*	Tehachapi Region Core Area	Rosamond-Willow Springs
Regional Transportation					X	X	X	X
Habitat Mitigation								
Water	Not Evaluated							
Sewer/Wastewater	Not Evaluated							
Storm Drain & Flood		X	X	X				
Local Transportation	X	X	X	X				
Parks & Recreation								
Public Utilities		X	X					
Other Facilities								
Public Safety	X	X	X	X				
Schools	X	X			X	X	X	X

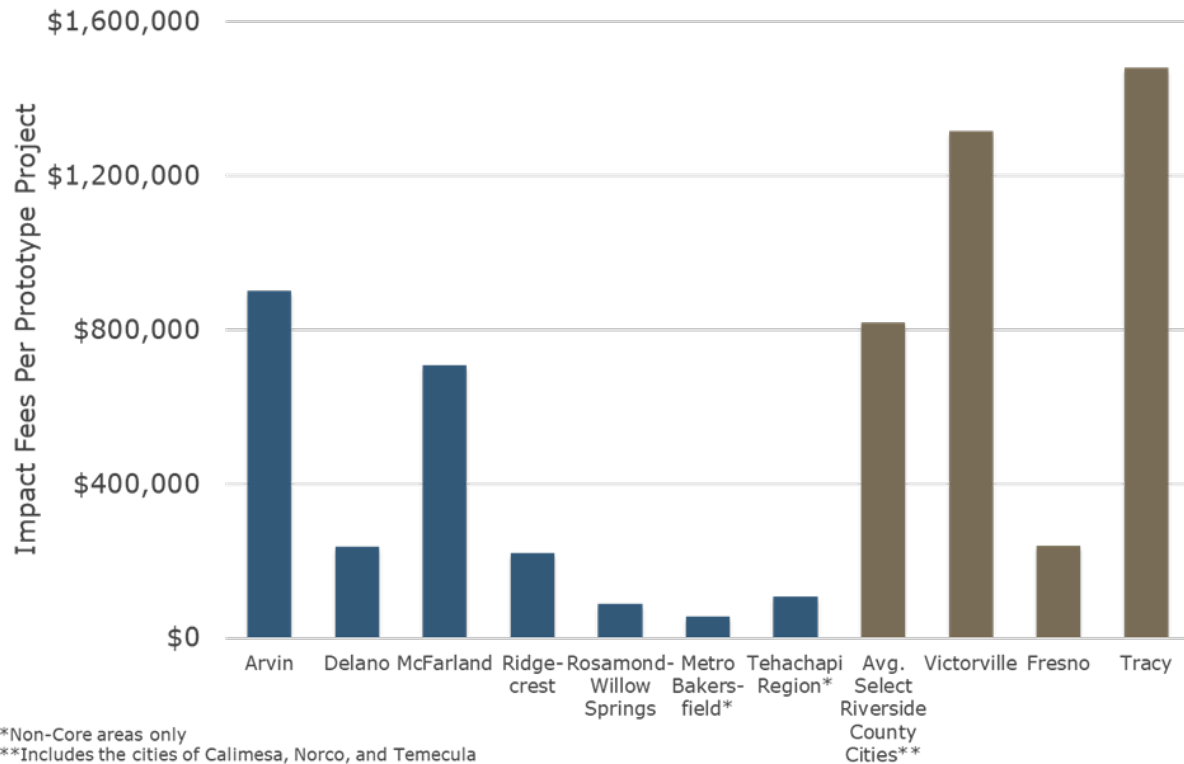
* The regional transportation fees are jointly adopted with the County of Kern and the region/core areas are defined in Chapter 17.60 of the County's municipal code.

Table 25. Industrial Impact Fee Categories in Peer Jurisdictions

Fee Category	City of Calimesa	City of Norco	City of Temecula	City of Victorville	City of Fresno	City of Tracy
Regional Transportation	X	X	X	X	X	X
Habitat Mitigation	X	X	X	X		X
Water	Not Evaluated					
Sewer/ Wastewater	Not Evaluated					
Storm Drain & Flood	X	X		X		X
Local Transportation	X	X	X	X	X	X
Parks & Recreation		X				
Public Utilities	X	X		X		X
Other Facilities			X			X
Public Safety	X	X	X	X	X	X
Schools	X	X	X	X	X	X
Other City Fees		X				X

Industrial Impact Fee Comparisons by Jurisdiction

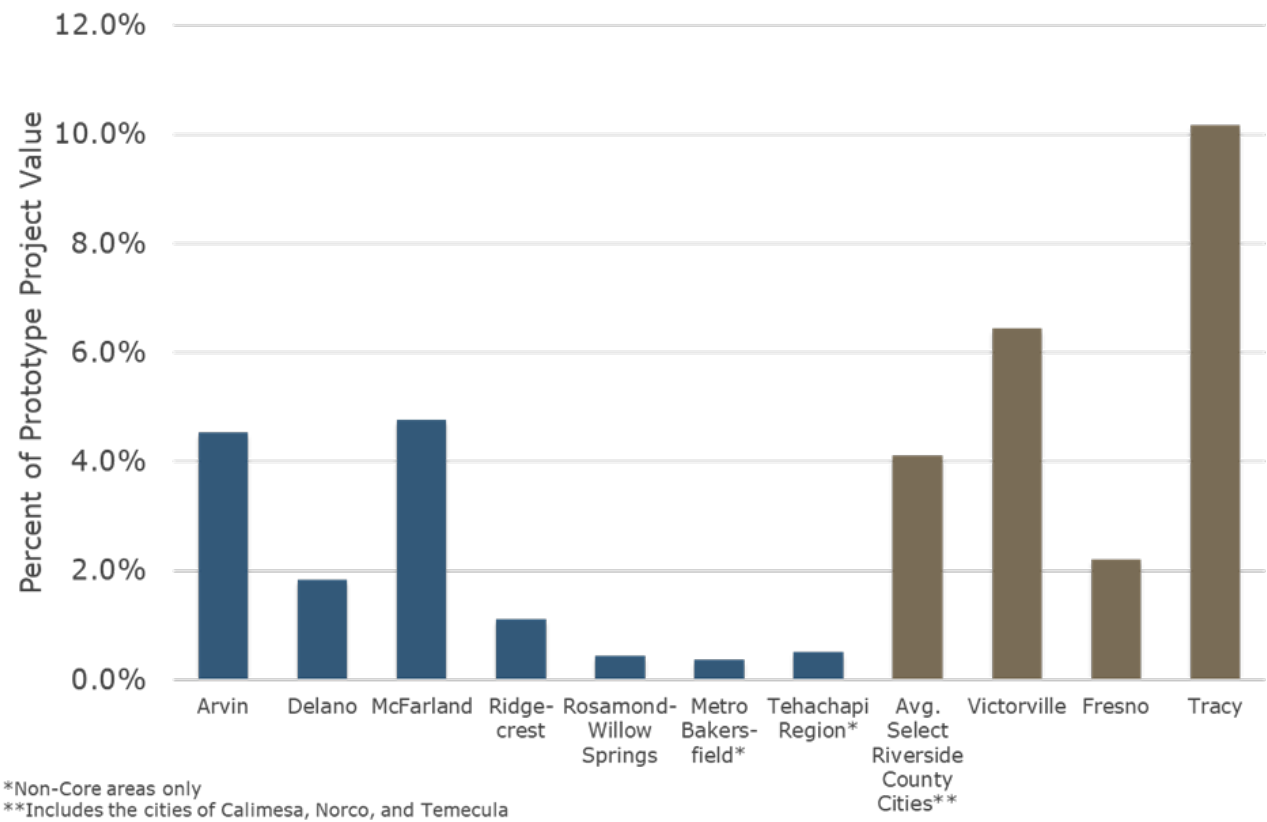
Figure 13 shows impact fee levels across the jurisdictions studied in this analysis. As shown, Tracy and Victorville have the largest impact fee levels, with Arvin in Kern County and the average level of impact fees in select Riverside County cities third and fourth highest, respectively.

Figure 13. Development Impact Fee Comparisons

Fee Burdens by Jurisdiction

Figure 14 shows the fee burdens by jurisdiction studied in this analysis. As shown, fee burdens for all Kern County jurisdictions are below five percent. For nonresidential development in California, a widely referenced range that still allows for feasible development is five to ten percent of the finished project value. It is important to note that, as mentioned above, fee burdens referenced in this analysis exclude utility fees, which will contribute additional burden on industrial development.

Lastly, two important observations arise as a consequence of the results of this analysis. Firstly, Arvin and McFarland each have higher impact fee levels than the City of Fresno suggesting they are in a less competitive position for logistics uses than these places, all else equal. Still, all Kern County jurisdictions studied have smaller fee burdens than Victorville and Tracy, which bodes well for the County's competitiveness among two of the most prominent logistics hubs in the state. Additionally, fee levels in the Bakersfield "non-core" areas, where a large share of new industrial development is expected to occur, is also well below levels that might be considered overly burdensome for new development.

Figure 14. Percent of Prototype Project Value

Nexus Study

This Chapter provides a framework and preliminary calculations for a KARGO regional transportation development impact fee program. Impact fees are one-time charges on new development that are collected by jurisdictions (e.g., a city or county) to cover the cost of capital facilities and infrastructure that is required to serve new growth.¹⁶ Since impact fees must be approved by the elected bodies (they do not require a vote of the people), a KARGO regional transportation fee would only apply in jurisdictions where it was adopted by the respective City Council (or the Board of Supervisors for unincorporated areas).

A development impact fee program must comply with the Mitigation Fee Act (Government Code section 66000), as enacted by Assembly Bill AB 1600 and subsequent amendments (including SB 602). Among other things, this law requires that impact fees be charged pursuant to a study that demonstrates a rational nexus between the amount and purpose of the fee (typically referred to as Nexus Study or Report).

This Chapter is designed to illustrate the potential range of KARGO fee levels that could be adopted by the elected bodies of participating Kern County jurisdictions. It provides the nexus analysis and associated fee calculations for a KARGO fee under three scenarios, as described below. Each scenario represents a different approach for collecting fees on new development so that it pays a “fair share” of the cost for the priority KARGO projects described in the ‘Roadway Network Improvement Projects’ chapter and itemized in **Table 5**.

- **Scenario 1 -- Industrial Only:** The fee is calculated based on, and applicable to, industrial development only (which includes warehousing and logistic space).
- **Scenario 2 -- All Non-Residential:** The fee is calculated based on, and applicable to, all non-residential development (i.e., industrial plus office, retail, and other commercial uses).
- **Scenario 3 -- All Development:** The fee is calculated based on, and applicable to, all new developments, including residential.

While not intended to serve as the formal Nexus Study for a KARGO fee, this Chapter provides preliminary technical analysis to support the maximum allowable fee that could be charged for each scenario. A final KARGO fee program would likely include refinements to, or a potential hybrid of, the scenarios described above after incorporating additional consultation with key stakeholders (e.g., developers and other members of the business community, transportation planners and advocates, and local policy makers, among others).

Based on stakeholder input, a KARGO impact fee program could reduce the fee amounts (overall or in specific locations or land use types) or adjust fee revenue distribution (e.g., based

¹⁶ Impact fees are typically generally collected upon issuance of a building permit or certificate of occupancy, although other options are available.

on a return to source formula) based on economic or policy considerations (e.g., to encourage new development or promote geographic equity). The ultimate fee program may also include refinements to the KARGO projects list and cost estimates, as well as updated or more detailed transportation modeling.

In this chapter the fee program is evaluated at countywide level. It is possible to divide the county is several districts and do similar analysis for each district accordingly.

Summary of Impact Fee Requirements

The key requirements of the Mitigation Fee Act that will determine the structure, scope, and amount of a KARGO fee Program are summarized below:

- Collected for Capital Facility and Infrastructure Improvements Only.** Development impact fee revenue can be collected and used to cover the cost of capital facilities and infrastructure that are required to serve new development that occurs within the geographic area covered by the fee program (e.g., Kern County for a regional fee). Impact fee revenue cannot be used to cover the annual operation and maintenance costs of these or any other facilities and infrastructure.
- Used to Fund Facility Needs Created by Growth Rather than Existing Deficiencies.** Impact fee revenues can only be used to pay for new or expanded capital facilities needed to accommodate growth. Impact fee revenue cannot be collected or used to cover the cost of existing deficiencies in capital facilities or infrastructure. In other words, the cost of capital projects or facilities that are designed to meet the needs of a region's existing population and employment must be funded through other sources. The costs associated with improvements that serve the needs of both new development and the existing population and employment are split on a "fair share" basis according to the proportion attributable to each. Thus, a KARGO fee Program would likely need to be augmented by other revenue sources to meet overall funding requirements, as further described in the Funding Gaps and Alternative Sources chapter.
- Fee Amount Must Be Based On Rational Nexus.** An impact fee amount must be based on a reasonable nexus, or connection, between new development and the needs and corresponding costs of the capital facilities and improvements needed to accommodate it. As such, an impact fee must be supported by specific findings that explain or demonstrate this nexus or relationship. In addition, the impact fee amount must be structured such that the revenue generated does not exceed the cost of providing the facility or improvement for which the fee is imposed.

Summary of Fee Amounts by Scenario

Table 26 summarizes the preliminary KARGO fee amount per trip for each of the scenarios described above. For the purposes of this initial analysis, the calculations assume one uniform fee rate would apply in all participating jurisdictions (although other options are available).

Table 26 also shows the fee amount per square foot of industrial development; fee amounts for other land use would be derived based on ITE trip rates with potential for discounts to account for pass-through trips.

Table 26. Summary of Maximum Allowable KARGO Fee by Scenario

Factor	Scenario 1 - Industrial Only	Scenario 2 - All	Scenario 3 - All Development
Fee Per Trip	\$1,158	\$303	\$93
Industrial Fee / Sq. Ft.	\$2.67	\$0.70	\$0.22

As shown, the preliminary KARGO fee calculation results in rates that range from a high of \$1,158 per trip (or \$2.67 per square foot for industrial), to a low of \$93 per trip (or \$0.22 per square foot for industrial). The fee rate declines as the type of building projects it applies to grows because KARGO facility costs would be spread across more development (e.g., all development in Scenario 3 versus only industrial in Scenario 1).

Nexus Analysis

This section describes the assumptions and analysis underlying the preliminary, County-wide impact fee for priority KARGO projects identified in the 'Mitigation Projects' chapter. Consistent with the requirements of the Mitigation Fee Act, the calculations allocate a "fair share" portion of these costs to County-wide growth and spread them across the level of new development applicable to each scenario.

Growth Projections

The impact fee calculations are based on estimated county-wide housing, employment, and trip growth from 2022 to 2046 (24 years) as reported by the Kern COG. These projections are critical to estimating the proportion of priority KARGO project cost estimates that can be attributed to growth, and thus included in the impact fee program. The estimated vehicle trips are based on the Kern COG travel demand model and exclude through traffic (i.e., trips that neither originate nor end in Kern County). The trip estimates have also been converted to Passenger Car Equivalent (PCE) units to capture the disproportionate transportation impacts of larger vehicles.

As summarized in **Table 27**, Kern County is projected to gain almost 20,000 industrial jobs over the next 24 years and over 56,000 total jobs, an increase of roughly 16 percent. Meanwhile, the County is expected to gain almost 70,000 new housing units over this same period, an increase of almost 25 percent. Combined, these projections imply that growth will account for 16 percent of total trips by 2046, a key input for the cost allocation methodology described below.

Table 27. Kern County Growth Projections

Category	County Wide Amount by Year		Growth (2022 - 2046)	% Increase	Growth as % of Total (used for cost allocation)
	2022	2046			
<i>Jobs</i>					
Industrial + Ag.	112,923	132,520	19,597	17.4%	14.8%
All Jobs	343,777	400,015	56,238	16.4%	14.1%
Households	285,992	354,258	68,266	23.9%	19.3%
<i>Passenger Car Equivalent Trips¹</i>					
Industrial + Ag	NA	NA	63,717		NA
All Non-Residential	NA	NA	231,262		NA
All Trips	4,461,302	5,349,879	888,577	19.9%	16.6%

Note [1] Passenger Car Equivalent (PCE) is a unit used to represent the impact of a large vehicle on a road by expressing it as the number of equivalent passenger vehicles. The estimates exclude through trips (e.g. trips that neither originate or end in Kern County).

Source: Based on data and model outputs from Kern County COG

KARGO Cost Allocation by Scenario

As noted above, the Mitigation Fee Act requires that new development only pay the proportion of capital facility costs that represents a “fair share” that can be attributable to growth. As a simplifying assumption, this analysis assumes that the priority KARGO projects benefit both existing and new employees and / or residents in a relatively proportional manner. As such, the cost allocation to the fee program varies by scenario based on growth as follows:

- Scenario 1: Industrial job growth from 2022 to 2046 as a proportion of total industrial jobs in 2046;
- Scenario 2: Total job growth from 2022 to 2046 as a proportion of total jobs in 2046; and
- Scenario 3: Total growth in PCE trips from 2022 to 2046 as a proportion of total trips in 2046.

Based on the allocation approach described above, the proportion of the \$498.8 million in priority KARGO project costs allocated to the fee program ranges from about 14 to 17 percent, as illustrated in **Table 28**. To the extent that more refined travel demand modeling justifies a higher (or lower) cost allocation to new growth, the fee estimates would increase (or decrease).

Table 28. Allocation of KARGO Facility Costs to Growth by Scenario

Category	Note / Source	Formula	Amount
Total KARGO Costs	<i>Chapter 3</i>	a	\$498,800,000
Growth as Percent of Build-out Total	See Table 27		
Scenario 1 - Industrial Only		b	14.8%
Scenario 2 -- All Non Residential		c	14.1%
Scenario 3 -- All Development		d	16.6%
Cost Allocated to Growth			
Scenario 1 - Industrial Only		= a * b	\$73,762,436
Scenario 2 -- All Non Residential		= a * c	\$70,126,358
Scenario 3 -- All Development		= a * d	\$82,847,104

KARGO Impact Fee Calculation by Scenario

The KARGO fee calculation is based on the proportion of priority project costs allocated to growth divided by total growth in trips for the land use categories included in each scenario. This calculation is illustrated in **Table 28** and results in a fee per trip ranging from a high of \$1,158 per trip for Scenario 1 to a low of \$93 per trip for Scenario 3. The fee rate declines as the type of building projects it applies to grows because the KARGO facility costs are spread across more types of development. Thus, Scenario 1 generates the highest fee because it assumes that only industrial development should be responsible for covering the portion of KARGO priority costs allocated to growth. In contrast, the fee in Scenario 3 is relatively low because on new development contributes to covering the cost of KARGO priority projects.

Table 28 also converts the fee per trip into a fee per square foot for industrial uses based on the average PCE trip generation rate for this land use. Based on Fehr & Peers data, a typical industrial user generated 2.31 PCE trips per 1,000 building square feet. While not calculated herein, the KARGO impact fee for other land uses (e.g., per commercial square foot or per residential unit) could be derived using similar trip generation factors.

Table 29. KARGO Impact Fee Calculation By Scenario

Factor	Note / Source	Formula	Scenario 1 - Industrial Only	Scenario 2 - All Non-Residential	Scenario 3 - All Development
Cost Allocated to Growth	See Table 27	a	\$73,762,436	\$70,126,358	\$82,847,104
Total Growth in PCE Trips	See Table 26	b	63,717	231,262	888,577
Fee Per Trip		$c = a / b$	\$1,158	\$303	\$93
Industrial Fee / Sq. Ft.	@ 2.31 trips / 1K Sq. Ft. [1]	$= (2.31 * c) / 1,000$	\$2.67	\$0.70	\$0.22

[1] Based on Fehr & Peers data on average passenger car equivalent trips for industrial uses.

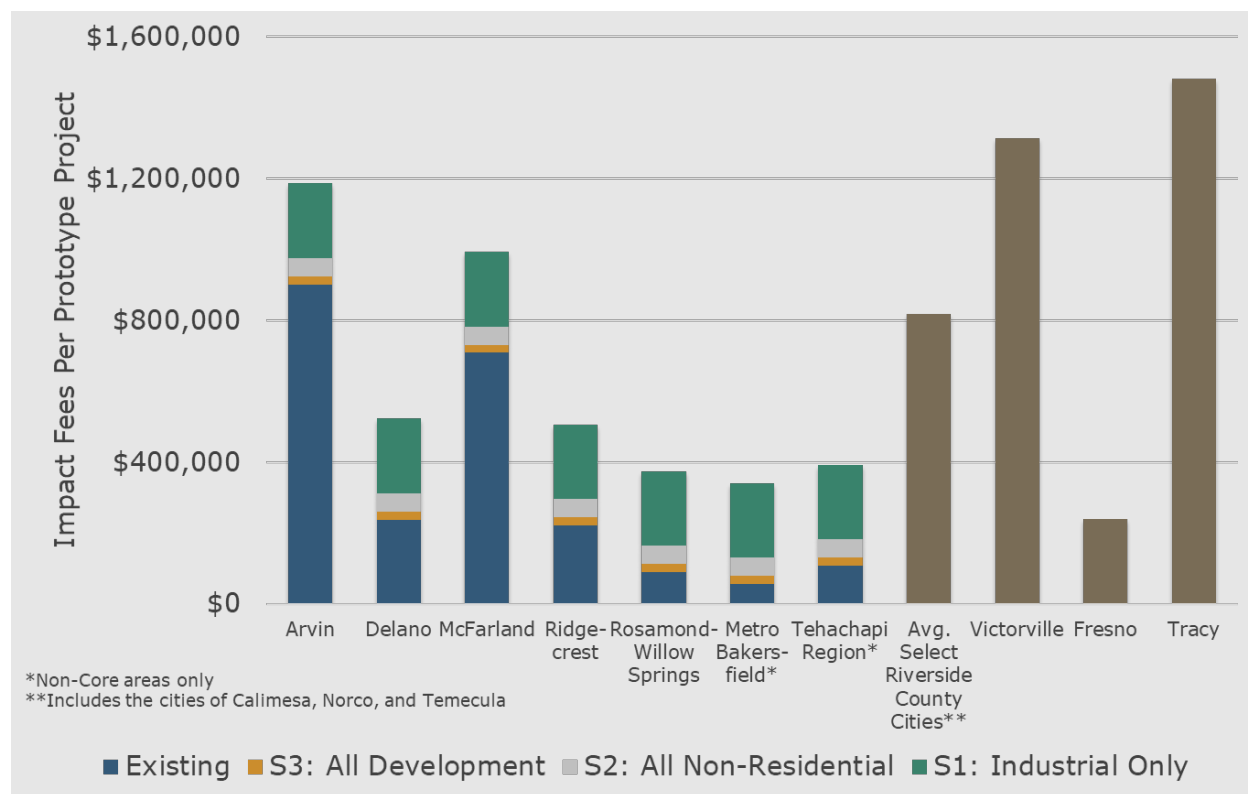
Competitiveness Analysis

This section updates the analysis presented in the 'Competitiveness Analysis' chapter on the relationship between local impact fees and the economic competitiveness of Kern County for logistics related development. In particular, **Figure 15** layers on the additional fee amounts calculated in the above scenarios for a prototypical 106,000 square foot industrial development project.¹⁷ Meanwhile, **Figure 16** calculates the total fee burden for each scenario, measured as the sum of all impact fees (including KARGO scenarios) as a percent of the market value for the same building prototype.

As illustrated in **Figure 15**, Scenario 1 would represent a relatively large increase in total fee amounts for all the Kern County locations studied, ranging from 30 to 40 percent increase over existing levels in Arvin and McFarland to more than fivefold increase in Bakersfield "non-core" area.¹⁸ In contrast, the fee increase under Scenario 3 would represent a more modest increase over current levels, at about 20 to 40 percent in the Tehachapi and Bakersfield "non-core" areas, areas respectively, to 10 percent in Ridgecrest and Delano, and three percent (3%) in McFarland and Arvin. In no case does the fee increase implied by Scenario 3 change the ranking relative to the comparison jurisdictions outside of Kern County. Scenario 2 would make the fees in Delano and Ridgecrest higher than those in Fresno but still substantially lower than the other comparison jurisdictions. Meanwhile, the fee levels in Bakersfield and Tahachapi "non-core" areas would remain below those of all comparison jurisdictions under Scenario 2.

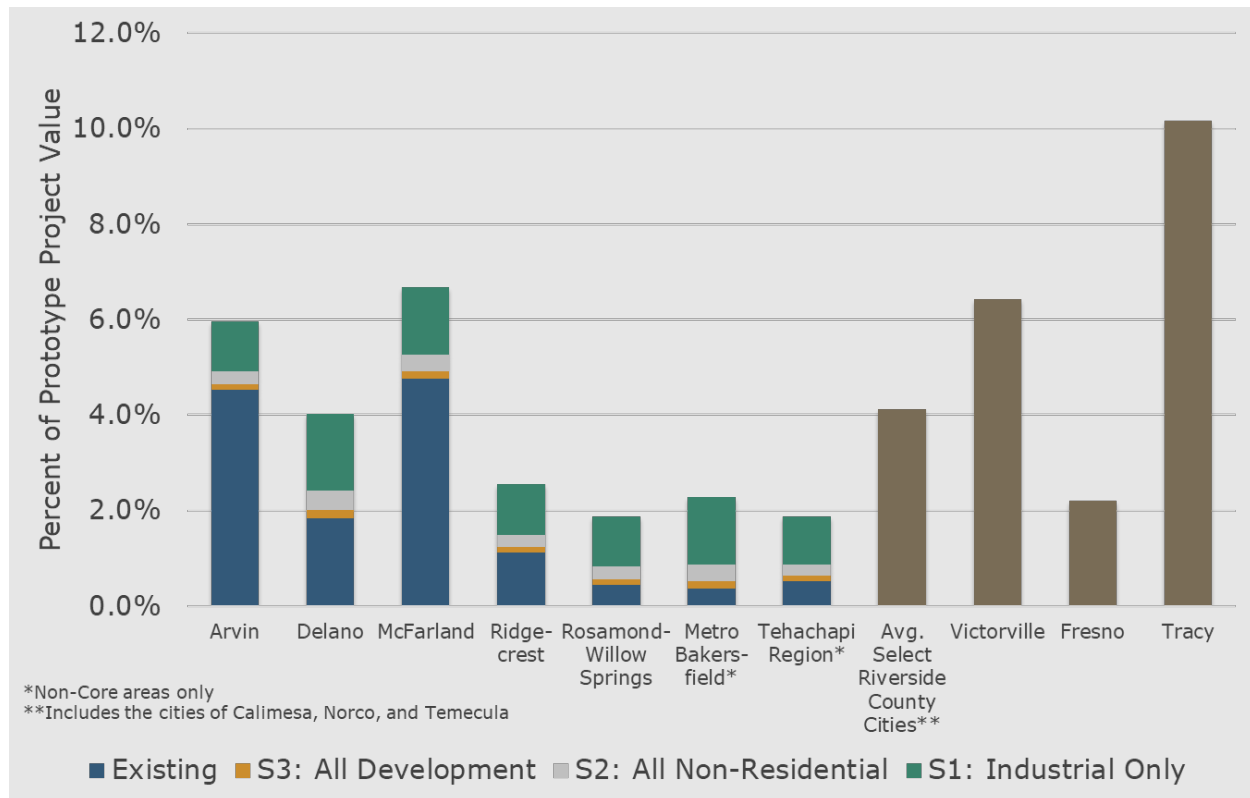
¹⁷ As described further in Chapter 5, the prototype attributes include 106,320 gross building square feet on 9.56 acres and constructed after 2012.

¹⁸ The "non-core" areas for Bakersfield and Tehachapi are located on the fringe of the respective jurisdictions and are most likely locations for industrial development.

Figure 15. Regional Impact Fee Comparison with KARGO Scenarios

As shown in **Figure 16**, the implications of the KARGO impact fee on the total fee burden (total fees as a percent of project value) mirror the results above, with Scenario 1 resulting in a relatively sizeable and Scenario 3 more modest impact, respectively. That said, even under Scenario 3, fee burdens for all Kern County jurisdictions are below five percent except for Arvin (5 percent) and McFarland (almost 7 percent). For nonresidential development in California, a widely referenced range that still allows for feasible development is five to ten percent of the finished project value. It is important to note that, as mentioned above, fee burdens referenced in this analysis exclude utility fees, which will contribute to an additional burden on industrial development.

The results of the fee burden analysis should not be regarded as deterministic in terms of regional or local economic competitiveness. Fee levels are just one of many variables that determine the “competitiveness” of certain sites or submarkets. A location can have higher fee levels than another (whether measured in absolute dollars or as a percent of value) and still be more competitive because of its proximity to key demand or supply markets, infrastructure availability, and overall business climate. In addition, market values and fee levels are themselves dynamic, and likely change over time. Finally, the delivery of new transportation infrastructure that will be facilitated by a KARGO fee program will presumably add capacity or provide other transportation benefits to industrial users and improve the market outlook in these locations.

Figure 16. Regional Impact Fee Burden Comparison with KARGO Scenarios

Funding Gaps and Alternative Sources

This chapter evaluates alternative funding resources and mechanisms that will likely be needed to deliver the transportation projects and capital improvements identified as part of KARGO Sustainability Study. EPS has prepared this analysis to address Task 3.4: Funding Gap Analysis. The information provided herein was also summarized as part of a consultant team presentation at the April 14th, 2023 KARGO Steering Committee stakeholder meeting.

As documented in previous chapters and deliverables, Fehr & Peers has identified approximately \$750 million in transportation capital improvements associated with the KARGO Sustainability Study. Currently, a regional development impact fee program is being considered as a key funding mechanism for delivering these projects. However, due to both economic and statutory considerations, this source will likely cover only a portion of the total KARGO project costs, as described in the Nexus Study Chapter. Moreover, impact fee revenues are generated gradually through time as development occurs, making it difficult to use as a funding source for up-front or near-term capital projects.

Given these considerations, the KARGO Sustainability Plan will need to leverage a variety of funding sources and mechanisms, including those approved locally or regionally as well as available through state and federal programs. This chapter identifies potential funding sources and their applicability to the KARGO projects. Given the high level of uncertainty associated with both future funding streams and project delivery schedules and costs, the information is highly conceptual. Moreover, this memo is not intended as an exhaustive survey of all funding sources but rather focuses on those expected to be the most applicable given the nature of KARGO projects.

Overview of Funding Sources

Table 30 lists the funding sources and tools considered in this study as the most applicable to KARGO projects, categorized by type. Specifically, this analysis has grouped funding sources based on (1) those requiring two-thirds voter approval (under California law tax increases designated for specific purpose requires must be approved by two thirds vote), (2) those requiring approval by local jurisdictions (e.g., cities or the county), and (3) State and/or federal sources, most of which are either formulaic or competitive. Given that securing additional state or federal funding will largely depend on factors outside the control of Kern County and its member jurisdictions, this analysis has primarily focused on local and regional initiatives.

Table 30. Overview of Identified Funding Sources

Local / Regional Funding Sources	
<i>2/3rds Voter Approval</i>	
<ul style="list-style-type: none"> • Sales Tax • Property Tax and General Obligation Bonds • Parcel Tax • Business License Tax • Assessment District (e.g., Mello-Roos CFD) • VMT User Charge* 	
<i>Jurisdiction Approval (e.g., City Council, Board of Supervisors)</i>	
<ul style="list-style-type: none"> • Development Impact Fees • Project Specific Mitigations (e.g., CEQA based) • Enhanced Infrastructure Financing District (EIFD) 	
State or Federal Funding Sources	
<i>State*</i>	
<ul style="list-style-type: none"> • Highway User Tax Account (HUTA) • SB1 Road Maintenance Rehabilitation Acct. (RMRA) • Regional Surface Transportation Program (RSTP) – State controlled but federally funded. • Transportation Development Account (TDA/LTF) 	
<i>Federal**</i>	
<ul style="list-style-type: none"> • Highway Safety Improvement Program • Highway Bridge Program (HBP) • Highway Infrastructure Program (HIP) • Infrastructure Investment and Jobs Act • Rebuilding American Infrastructure with Sustainability and Equity (RAISE) 	

* Further legal analysis is required to determine if Kern County could implement this mechanism without voter approval.

**There is some overlap in the funding and administration of several of these programs (e.g., funded federally but administered by the State).

Regional Impact Fee Program

The Nexus Study presented in previous Chapter explored various alternatives for implementing a regional Development Impact Fee program to fund KARGO transportation projects. An impact fee is a one-time charge on new development projects designed to cover the “fair share” cost of public infrastructure needed to serve this development. While an impact fee program may take a variety of forms, preliminary analysis by Fehr & Peers suggests that it would likely fund, at most, between 15 to 20 percent of the transportation capital costs included in the KARGO plan. It is also important to note that the revenues generated from such a fee would only be available as development occurs (i.e., total revenue would be generated once building permits have been pulled.

Sales and Property Tax Measures

Many California counties and / or jurisdictions have passed voter approved transportation funding initiatives through sales or property tax measures. With a few exceptions (as described below) these measures require two-thirds voter approval and as such often involve extensive voter outreach and coalition building. If approved, these measures can provide substantial funding given the potential for a very broad / large funding pool, as further illustrated below. Moreover, since the measures are locally approved, sales and property tax measures can be tailored to the needs and goals of participating jurisdictions (they are not dependent on state or federal requirements or priorities). Finally, both sales and property tax measures can be used to secure tax exempt bonds, allowing for large capital outlays for “up-front” investments.

Because the designation of revenues for specific purposes, such as transportation, requires a supermajority, a relatively difficult threshold, some jurisdictions have attempted to improve the success rate of general-purpose measures by adopting a so-called “A/B Strategy.” Under this approach, general purpose tax measures are accompanied by an advisory measure indicating the recommended use for the funds. This can allow the measure to avoid the two-thirds supermajority threshold.

Sale Tax Measures

Regional sales tax measures represent the most common form of voter approved transportation measures. Currently, there are 24 county transportation agencies in California that are participating members of the Self-Help Counties Coalition (SHCC). Kern is currently the largest County in the State without a dedicated local sales tax for transportation improvements and / or maintenance.

Table 31 provides a preliminary and illustrative estimate of the funding that could be generated from a regional one-quarter cent (1/4%) sales tax measure. As shown, if approved such a measure would generate about \$62 million per year based on 2022 taxable sales in the County, growing to \$85 million annually by 2046 (assuming sales grow at sale pace as population in real terms). Over this 24-year period, the total amount generated of \$1.8 billion is more than double the \$750 million price tag for the KARGO project list.

Table 31. Illustrative Revenue Generation from ¼% Sale Tax Measure

Assumptions	
Annual Population Growth = Real Sales Tax Revenue Growth	1.29%
Revenue	
2022 - with 1/4% Sales Tax	\$62,685,468
2046 - with 1/4% Sales Tax	\$85,297,000
Total Revenue (24 years): 1/4% Sales Tax	\$1,836,000,000

Property Tax Measures

While less common for transportation projects, property tax and / or General Obligation bonds can also generate substantial revenue for transportation projects. The incidence of burden of a restricted or general obligation bond secured by a property tax increase rests on all property owners in the issuing jurisdiction in proportion to the assessed value of their property (i.e., it is an “ad valorem” percent tax). This broad base of funding provides excellent security for special purposes or general obligation bonds, thus typically garnering the lowest interest rate of any municipal debt instrument. Credit rating agencies often consider a general obligation pledge to have very strong credit quality and frequently assign them investment grade ratings.

One factor that may play a role in the feasibility and scale of a bond measure funded property tax revenue is the jurisdiction’s existing tax rate. It is often more difficult - for both political and financial reasons – for municipalities to secure additional property tax secured debt if the property tax rate is already well above the baseline one percent of assessed value. One primary reason while this approach is less common than sale tax is because it often involves an increase in property taxes paid by local property owners (sales taxes are paid by consumers more broadly, many of whom may be not residents). This approach may be particularly difficult in Kern because the County already has a relatively high tax rate, attributable to previously approved tax measures.

Table 32 provides a preliminary and illustrative estimate of the funding that could be generated from a regional .05% property tax increase. As shown, if approved such a measure would generate about \$48 million per year based on 2022 taxable sales in the County, growing to \$61 million annually by 2046 (assuming sales grow at sale pace as population in real terms). Over this 24-year period, the total amount generated of \$1.37 billion is almost double the \$750 million price tag for the KARGO project list (less than a sales tax increase but still substantial).

Table 32. Illustrative Revenue Generation from .05% Property Tax Measure

Assumptions			
Annual Real Growth in Assessed Value		1%	
Average Property Tax Rate		1.26%	
New Property Tax for Transportation Project		0.05%	
Revenue			
Year	Total Assessed Value	Existing Property Tax Revenue	New Property Tax Revenue for Transportation
2022	\$96,672,959,000	\$ 1,217,576,000	\$ 48,336,000
2046	\$ 122,749,000,000	\$ 1,545,000,000	\$ 61,374,000
Total Revenue (24 years)		\$ 34,375,000,000	\$ 1,365,000,000

Other Local and Regional Funding Measures

Table 33

Table 33 provides a summary of other local and regional funding measures that could potentially contribute to KARGO projects along with the pros and cons of each. EPS has not provided revenue projections for these measures given the wide variation and range of factors affecting how each mechanism might be applied, if at all. Further information about each is described below.

Table 33. Summary of Other Local and Regional Funding Options

Measure / Source	Approval Process	Advantages	Disadvantages
Assessment District (e.g., Mello-Roos CFD)	2/3 rd s landowner / voter approval	Most applicable for local serving facilities	Less applicable to regional serving projects.
Enhanced Infrastructure Financing District (EIFD)	Approval by Council / Board of participating jurisdictions	Does not raise taxes	Re-directs new property tax from General Fund of participating jurisdictions
Gas or Diesel Tax	2/3 rd s voter approval	Tax incidence focused on users / beneficiaries	Incentivizes “Fuel-up” outside County Electrification → declining revenues
Vehicle Mile Traveled (VMT) User Charge	Likely 2/3 rd voter approval or State authorization	Tax incidence focused on users / beneficiaries	The approval, enforcement, are compliance mechanisms are unresolved
Business License or parcel tax on industrial uses	2/3 rd s voter approval	Tax incidence focused on users / beneficiaries	May impact local economic competitiveness
Project Specific Mitigation (e.g., CEQA based)	Local jurisdiction entitlement process	Direct nexus with local development	Less applicable to regional serving projects

Enhanced Infrastructure Financing District

Enhanced Infrastructure Financing Districts (EIFDs) provide an emerging form of tax increment financing available to local public entities in California. EIFDs may be formed over a defined area (the district), including non-contiguous areas, by a city, county, or joint powers authority (JPA), to capture incremental increases in property tax revenue from future development and assessed value appreciation. In the absence of the EIFD, this revenue would accrue to the city’s General Fund (or other property-taxing entity revenue fund). Unlike prior TIF/Redevelopment laws in California, EIFDs do not provide access to property tax revenue beyond the share agreed upon by participating jurisdictions (e.g., City and County).

The establishment of an EIFD requires approval by every local taxing entity that will contribute its property tax increment. EIFDs may be formed and gain access to unlevered (debt free) revenue, as well as to secure tax-exempt bond revenue. Revenues generated by an EIFD may be used to provide funding and financing for a broad range of infrastructure projects, provided those projects have a useful life of 15 years and are of “community-wide” significance. Capital improvements do not have to be located within the boundaries of the district but must have a “tangible connection” to the district.

An EIFD could theoretically be formed in areas expected to experience future industrial development with revenues used to finance transportation improvements that benefit these areas (even if the projects were outside the district). While most EIFDs formed to date have focused on more localized improvements, the EIFD formed by the Cities of Stockton, Lathrop and Manteca and San Joaquin County represents at least one example in California of a multi-jurisdictional EIFD to address regional improvements (flood control).

Mello-Roos Community Facilities District (CFD)

The Mello-Roos Community Facilities Act of 1982 (authorized by Section 53311 et. seq. of the Government Code) enables the formation of a CFD by local agencies, with two-thirds voter approval (or landowner approval when there are fewer than 12 registered voters in the proposed district), for the purpose of imposing special taxes on property owners. The resulting special tax revenue can be used to fund capital costs or operations and maintenance expenses directly, or they may be used to secure a bond issuance, the proceeds of which are used to fund capital costs. Because the levy is a tax rather than an assessment, the standard for demonstrating the benefit received is lower, thus creating more flexibility. In addition, the boundaries of a Mello Roos CFD need not be contiguous, which allows for flexibility in tailoring a project area likely to receive sufficient votes.

Since their establishment in the early 1980s, CFDs have become the most common form of land-secured financing in California. A Mello Roos CFD provides a well-established method of securing relatively low-cost tax exempt, long-term, fixed rate, fully assumable debt financing. The owners or users of real estate pay assessments or special taxes that are recorded on the property. By adding to the cost of ownership, the assessment or tax may affect the price a buyer is willing to pay for property, in which case the cost incidence is shared with the builder, land developer, or landowner.

The merits of establishing a Mello Roos CFD to finance KARGO improvements are summarized in **Table 34**. While land-secured financing has been widely used in greenfield development where landowner approval is the norm, achieving a two-thirds voter approval in infill areas with numerous property owners is typically a barrier to use of the tool. As a result, a CFD may not be a viable option for regional serving improvements.

Table 34. Summary of Advantages and Disadvantages of Mello Roos CFD

Advantages	Disadvantages
<ul style="list-style-type: none"> • Can be structured with strategic, non-adjacent geographies. • Not necessarily subject to Citywide / resident vote • Provides a secure source of funding for public infrastructure. • Can be used to fund/reimburse costs of initial infrastructure improvements. • Can fund debt service for bond issuances or used on a "pay-as-you-go" basis 	<ul style="list-style-type: none"> • Voter approval required; potentially challenging to organize across multiple landowners. • Adds additional tax burden to land. • Exposure to the developer for initial payment of the special assessments/taxes for debt service • Requires costs to be advanced for formation and bond sale. • Need to establish measurable and specific benefits to properties.

Gas or Diesel Tax

A gas or diesel tax is a variant of the sales tax option discussed above but focused on a specific consumption item and thus has substantially lower revenue generating potential. A primary advantage relative to more conventional sales tax is that the tax incidence is more closely aligned with the primary user group or beneficiary (e.g., drivers). Disadvantages include the fact that revenue generation would be linked to variation in fuel costs, travel patterns, and technological change (e.g., fuel efficiency and vehicle electrification). It would also be susceptible to evasion, particularly among truckers, who would be incentivized to fuel up in neighboring counties. Finally, a fuel tax with revenues targeted to transportation would require a supermajority vote.

Vehicle Mile Traveled User Charge

A vehicle mile traveled (VMT) user charge (aka a “Road Charge” or “mileage-based fee”), is an alternative and nascent funding mechanism that would charge drivers based on how many miles they drive, instead of how many gallons of gas they use. It is currently being studied at both State and federal levels as a more equitable and sustainable way to fund road maintenance, preservation, and improvements. Instead of paying the state’s gas tax, which disproportionately impacts those who cannot afford more fuel-efficient vehicles, all drivers would pay a per-mile rate, which could vary by vehicle type (e.g., trucks could pay higher rates given disproportionate impact on road maintenance).

While the California State Legislature approved a road charge pilot study that was launched in 2016, the tool has yet to be formally implemented in the State or by individual jurisdictions. The Road Charge Pilot Program offered a variety of methods to participants for reporting miles driven, ranging from manual (do not require reporting any personal information) to automated (with or without location-based services). The study concluded that while the mileage reporting methods employed for the Road Charge Pilot Program are feasible, they cannot compete with the simplicity, cost effectiveness, and public acceptance of the current gas tax collection process. Moreover, it would be difficult to implement at a local or County level given that vehicle registration is a state-wide function.

Business license tax

Jurisdictions can establish a business license tax applicable to all or certain classes of business activity operating within its boundaries. While there is some flexibility on the rate and method of apportionment, the actual tax amount would need to be approved by a supermajority vote. One potential advantage is that business license taxes could be charged to all commercial uses, not just on new development. However, depending on the tax rate / amount, such a measure could also negatively affect the economic competitiveness of targeted land uses.

Parcel Tax

A parcel tax is a flat annual charge applied to properties within a jurisdiction, sometimes with use-related variation and exemptions. The key distinction with property tax is that a parcel tax

cannot be levied on an “ad valorem” basis (i.e., not based on the assessed value of property). Like other taxes, parcel taxes, if used for general purposes including infrastructure investments, can be imposed with a simple majority voter approval. If dedicated to special purposes, parcel taxes will require two-thirds voter approval. They may be used for funding ongoing services or pledged to debt service.

Parcel taxes can be structured to vary based on key property characteristics, such as total commercial square feet. Typically, parcel taxes include relatively strict allocation rules to ensure simplicity and parity among property owners. They also are commonly subject to a “sunset” date and must be re-authorized periodically to maintain funding.

In practice, parcel taxes are often used to provide a broad-based source of funding for specified and highly desirable city-wide public services and improvements (i.e., not general purpose) and are based on relatively modest levies. They also tend to generate a relative constant amount of revenue overtime, which does not fluctuate based on market appreciation or property enhancements. Consequently, the revenue generating potential of a parcel tax, though stable, is generally much lower than for property tax.

Project Specific Agreements, Exactions, or Mitigations

With local authority over land use, California cities have a variety of tools at their disposal to require infrastructure or financial contributions from property owners and developers in exchange for project or site-specific entitlements. These tools can take the form of project specific mitigation or exactions (often related to CEQA impacts) or more collaborative public-private partnerships, often formalized through a development agreement. These development requirements can be between the City and the developer or more systematically applied and policy-based, applying not just to one project, but to certain types of projects or in designated areas.

In using these tools, it is important to consider overarching local land use and economic development policy objectives. Specifically, developer mitigation or exactions value capture funding tools largely rely upon recouping or financing public infrastructure investments by extracting funds from development projects that are commensurate with the private sector value increase enjoyed courtesy of the public investment. It is important for a jurisdiction to strike this balance, otherwise developers will have less incentives to participate.

Primary advantages of project specific exactions, mitigation measures, and/or development agreements is that they do not require voter approval and can be structured to best address the specific needs and circumstances at hand. By the same token, however, such agreements tend to be site or project specific and are not well-suited for regional-serving infrastructure improvements.

State or Federal Funding Sources

Table 35 lists potential State and federal funding sources that may be applicable to KARGO projects. It is not meant to be a comprehensive list, and EPS has not done an exhaustive analysis

of the eligibility and evaluation criteria to determine whether KARGO projects would be eligible and competitive for each. In addition, while these discretionary sources can provide a meaningful contribution to the funding of infrastructure, their appropriation is largely outside the control or discretion of Kern County jurisdictions and, instead, subject to a competitive process.

Table 35. Summary of State and Federal Funding Sources

Program Examples	Type of Facility
Highway User Tax Account (HUTA)	Pavement
SB1 Road Maintenance Rehabilitation Acct. (RMRA)	Pavement
Regional Surface Transportation Program (RSTP)	Pavement
Transportation Development Account (TDA/LTF)	Pavement
Highway Safety Improvement Program (HSIP)	Pavement / Bridge
Highway Bridge Program (HBP)	Bridge
Highway Infrastructure Program (HIP)	Bridge
Rebuilding American Infrastructure with Sustainability and Equity (RAISE)	Varies

State and federal funding sources offer clear advantages and disadvantages in terms of their applicability to KARGO projects, as illustrated **Table 36**. In summary, these sources should be pursued strategically, but they will likely require dedicated staff and / or consultants to monitor and pursue opportunities.

Table 36. Advantages and Disadvantages of Federal and State Funding

Advantages	Disadvantages
<ul style="list-style-type: none"> Reduces financial burden on jurisdictions and /or property owners and residents. Does not require voter approval. Offers potential to provide substantial funding levels for eligible projects 	<ul style="list-style-type: none"> Highly competitive and difficult to predict. Likely linked to specific sponsoring agency requirements Many sources require time consuming applications

Summary of Funding Gap tools

Table 37 summarized the potential funding opportunities for the KARGO program and priority projects based on the preliminary estimates and calculations and estimates provided in this report. As described in the Nexus Study chapter, a KARGO impact fee program could generate between \$70.1 to \$82.9 million in funding or about 15 to 17 percent of the cost for priority projects. Meanwhile a one quarter cent sales tax measure could generate about \$1.8 billion cumulatively over 24 years (a property tax measure would generate slightly less and would likely be more difficult to approve), as described above. The sales tax measure alone would generate would more than cover the funding gap for priority KARGO projects, leaving substantial revenue for other County-wide transportation priorities.

Table 37. Summary of KARGO Funding Gap Scenarios

Funding Item	Source / formula	Amount
Total KARGO Priority Projects (see Table 33)	a	\$498,800,000
Potential Funding from KARGE Impact Fee (see Table 33)		
Scenario 1 - Industrial Only	b	\$73,762,436
Scenario 2 - All Non-Residential	c	\$70,126,358
Scenario 3 - All Development	d	\$82,847,104
Funding Gap		
Scenario 1 - Industrial Only	e = a - b	\$425,037,564
Scenario 2 - All Non-Residential	f = a - c	\$428,673,642
Scenario 3 - All Development	g = a - d	\$415,952,896
Potential Sales Tax Revenue (1/4% over 24 years, see Table 24)	h	\$1,836,000,000
Surplus Funding Available for Other Projects		
Scenario 1 - Industrial Only	= h - e	\$1,410,962,436
Scenario 2 - All Non-Residential	= h - f	\$1,407,326,358
Scenario 3 - All Development	= h - g	\$1,420,047,104

Outreach Strategy & Efforts

Fehr & Peers collaborated with KernCOG staff to identify candidates for a Project Steering Committee (PSC) comprised of key stakeholders in the region who are well-positioned to provide feedback and direction to inform the study. Additionally, Fehr & Peers coordinated with KernCOG staff to develop a robust outreach plan to engage both stakeholders (including the PSC) and the public, with a specific focus on underrepresented communities. The purpose of the outreach plan was to facilitate an open and proactive process to allow multiple opportunities for public and private freight stakeholders to participate in the study and influence recommendations. **Table 38** lists the outreach meetings that were conducted and summarizes the purpose and key outcomes of each. **Appendix A6** provides the presentation slide decks that were used for the PSC and stakeholder outreach meetings. **Appendix A7** contains supplemental documents and materials related to AB 617.

Table 38. Stakeholder Outreach Meetings

Meeting	Date	Purpose	Outcomes
Project Kick-Off Meeting	6/11/21	<ul style="list-style-type: none"> Introduce the project team (KernCOG staff, Fehr & Peers, Mark Thomas Engineers, EPS) Provide an overview of the outcomes of KARGO Phase I Provide an overview of the vision, purpose, & goals for KARGO Phase II Review the scope of work, study approach, and key deliverables Discuss the stakeholder engagement approach Identify key data needs 	<ul style="list-style-type: none"> Identified next steps to advance the study Developed a preliminary schedule for subsequent outreach meetings Developed a preliminary schedule for the completion of key deliverables
Kern Transportation Foundation Conference	10/28/21	<ul style="list-style-type: none"> Introduce the study to regional stakeholders Provide an opportunity for regional stakeholders to provide in-person feedback on the Existing & Potential STAA & Local Truck Route maps 	<ul style="list-style-type: none"> Received feedback to inform potential revisions to the truck route maps

Meeting	Date	Purpose	Outcomes
PSC Meeting #1	12/1/21	<ul style="list-style-type: none"> Review project objectives Review the County Circulation Plan and Existing & Potential STAA & Local Truck Route maps Discuss the purpose & need for an impact fee Review circulation network performance measures, the potential transportation impacts of warehousing/industrial land uses upon RTP buildout, and high-level results of preliminary model runs 	<ul style="list-style-type: none"> Identified opportunities to refine the County Circulation Plan and Truck Route maps Received feedback to begin informing the selection of projects for the nexus study
Shafter/SJVAPCD AB 617 Meeting	1/10/22 3/14/22	<ul style="list-style-type: none"> Provide an overview of KARGO Phase II and summarize the outcomes and recommendations from KARGO Phase I Present the high level analysis results of preliminary modeling efforts for the nexus study scenarios Summarize potential impacts to vulnerable communities Solicit questions and feedback 	<ul style="list-style-type: none"> Received feedback to inform the development of alternative freight routes and strategies to mitigate/remove impacts to vulnerable communities and sensitive receptors

Meeting	Date	Purpose	Outcomes
Center for Race, Poverty & the Environment (CRPE) Meeting w/ CA Transportation Commission	3/24/22	<ul style="list-style-type: none"> • Discuss environmental justice concerns for rural, low-income communities burdened by transportation inequities • Discuss transportation network considerations for residents with disabilities • Discuss health/safety burdens and noise pollution/congestions issues imposed by freight traffic • Appendix A7 contains materials related to mitigating/removing impacts to vulnerable communities and sensitive receptors 	<ul style="list-style-type: none"> • Received feedback to inform the development of alternative freight routes and strategies to mitigate/remove impacts to vulnerable communities and sensitive receptors
CRPE Meeting for KARGO Study	5/26/22	<ul style="list-style-type: none"> • Present and discuss potential strategies to mitigate/remove impacts to vulnerable communities and sensitive receptors 	<ul style="list-style-type: none"> • Received feedback to refine mitigation strategies that benefit vulnerable communities
PSC Meeting #2	8/24/22	<ul style="list-style-type: none"> • Review prior stakeholder input • Present draft final Circulation Element & Truck Route maps • Present draft short list of projects for impact fee or other funding mechanisms • Present draft regional competitiveness analysis • Discuss potential state route adoptions/relinquishments 	<ul style="list-style-type: none"> • Received feedback to inform the final Circulation Element & Truck Route maps • Received feedback to inform refinements to the draft list of projects for the nexus study

Meeting	Date	Purpose	Outcomes
Regional Stakeholder Meeting #1	2/24/23	<ul style="list-style-type: none"> • Provide a recap of KARGO Phase I and an overview of KARGO Phase II, including progress made to-date • Summarize the review of existing fee programs for jurisdictions in Kern County and the regional competitiveness analysis • Review sketch drawings of new facilities completed by Mark Thomas Engineers • Present the objectives to be achieved by the nexus study projects (capacity, maintenance, clean tech, and competitiveness & economic benefit) • Update stakeholders on modeling progress (updating needs assessment and nexus projects evaluation based on 2022 RTP growth rate assumptions) • Brainstorm non-infrastructure sustainability strategies 	<ul style="list-style-type: none"> • Received feedback to inform revisions to the sketch drawings prepared by Mark Thomas Engineers • Received feedback regarding non-infrastructure sustainability strategies to advance the overarching goals of the KARGO Phase II study

Meeting	Date	Purpose	Outcomes
PSC Meeting #3	3/31/23	<ul style="list-style-type: none"> Summarize industrial land use growth forecasts for 2022-2046 based on the 2022 RTP Review 2046 performance measures, including operations (LOS), truck volumes, truck VMT, and the traffic index (TI) Review refined draft list of nexus study projects Assess changes in 2046 performance with implementation of nexus study projects Summarize options for impact fee program Present alternative funding mechanisms that may supplement an impact fee program 	<ul style="list-style-type: none"> Following the meeting, the draft list of nexus study projects was provided to the stakeholder group and an online survey was deployed to solicit feedback on the list in order to inform a more detailed discussion of the projects on 4/14
PSC Meeting #4	4/14/23	<ul style="list-style-type: none"> Recap roadway network performance objectives Review the nominated projects for impact fee nexus to solicit additional feedback Review the high-level cost estimate for the nexus study projects Review alternative funding mechanisms that may supplement an impact fee program 	<ul style="list-style-type: none"> Following the meeting, the stakeholders in attendance were asked to submit any additional feedback on the draft list of nexus study projects to KernCOG staff by EOD on 4/14 The list of nexus study projects was finalized on 4/17
Meeting with Morgan Hill from Mojave Inland Port	5/24/23	<ul style="list-style-type: none"> Summarize the KARGO Phase II draft final report, answer outstanding questions about the methodology and findings, and provide an opportunity for representative of the Mojave Inland Port to provide comments 	<ul style="list-style-type: none"> Mr. Hill expressed support for a fee program and requested the inclusion of the 14/Purdy Avenue project in the fee program Mr. Hill expressed a desire to connect with railroad operators

Meeting	Date	Purpose	Outcomes
Meeting with Wonderful Company	5/25/23	<ul style="list-style-type: none"> Summarize the KARGO Phase II draft final report, answer outstanding questions about the methodology and findings, and provide an opportunity for Wonderful Company staff to provide comments 	<ul style="list-style-type: none"> Wonderful Company staff provided insight into how projects selected for the fee program may affect their operations Wonderful Company staff expressed that Scenario 1, in which only industrial development would pay the fee, would result in a fee that is too high
Meeting with Caltrans District 9	6/1/23	<ul style="list-style-type: none"> Summarize the KARGO Phase II draft final report, answer outstanding questions about the methodology and findings, and provide an opportunity for Caltrans District 9 staff to provide comments 	<ul style="list-style-type: none"> Caltrans District 9 staff recommended that the improvement project for the 14/Purdy Avenue be considered for inclusion in the fee program Caltrans District 9 staff indicated that growth in East Kern that is not captured in the RTP will necessitate more investment there
Meeting with Tejon Ranch Company	6/9/23	<ul style="list-style-type: none"> Summarize the KARGO Phase II draft final report, answer outstanding questions about the methodology and findings, and provide an opportunity for Tejon Ranch Company staff to provide comments 	<ul style="list-style-type: none"> Tejon Ranch Company staff expressed concern that the fee program is heavily weighted toward Shafter and North Bakersfield and indicated that projects funded in those places wouldn't benefit their tenants Tejon Ranch Company staff expressed a desire to see more projects included in the list that could benefit their operations
Regional Stakeholder Meeting #2	6/12/23	<ul style="list-style-type: none"> Summarize the comments that were received pertaining to the draft final report Provide an additional opportunity for stakeholders to provide comments and ask questions 	<ul style="list-style-type: none"> Consultant team received direction regarding final report edits to respond to stakeholder comments

Guidelines for State Route Adoption and Relinquishment

Phase 1 KARGO study concluded that seven (7) planned corridors in Kern County Region be relinquished to Caltrans to replace the existing alignments of State Routes 43, 58, 65, 119, 178, 184, and 223. This long-term conceptual plan necessitates additional coordination with Caltrans, as well as a thorough evaluation of each specific corridor to determine the precise alignment. The primary objective is to redirect trucks away from vulnerable receptors and disadvantaged communities. Furthermore, implementing these planned alignments will enhance the network resiliency and facilitate connectivity between major freight activity centers and state routes.

Some relocations will take place over two phases as shown in **Figure 17** and Figure 14 by the gray (Phase 1) and white (Phase 2) shields. Project development procedures related to the State Highway System that require California Transportation Commission (CTC) approvals are referred to as Route Matters. These procedures include the selection of the specific location of each State Route adoption (which must conform to the route as described in the California Streets and Highways Code), route adoptions, new connections to access controlled facilities, and relinquishments.

Figure 17. Existing, Candidate, and Future Truck Routes (Sample Maps from Appendix A1)

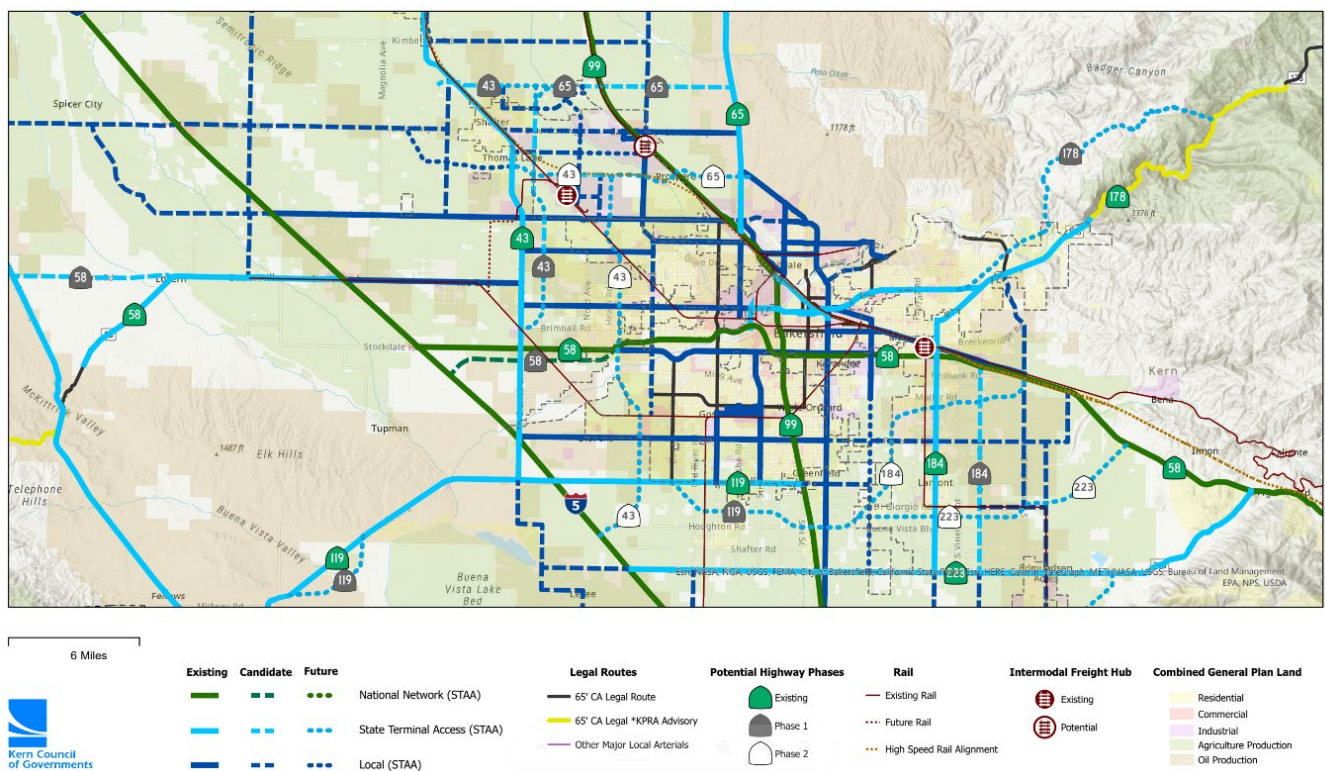
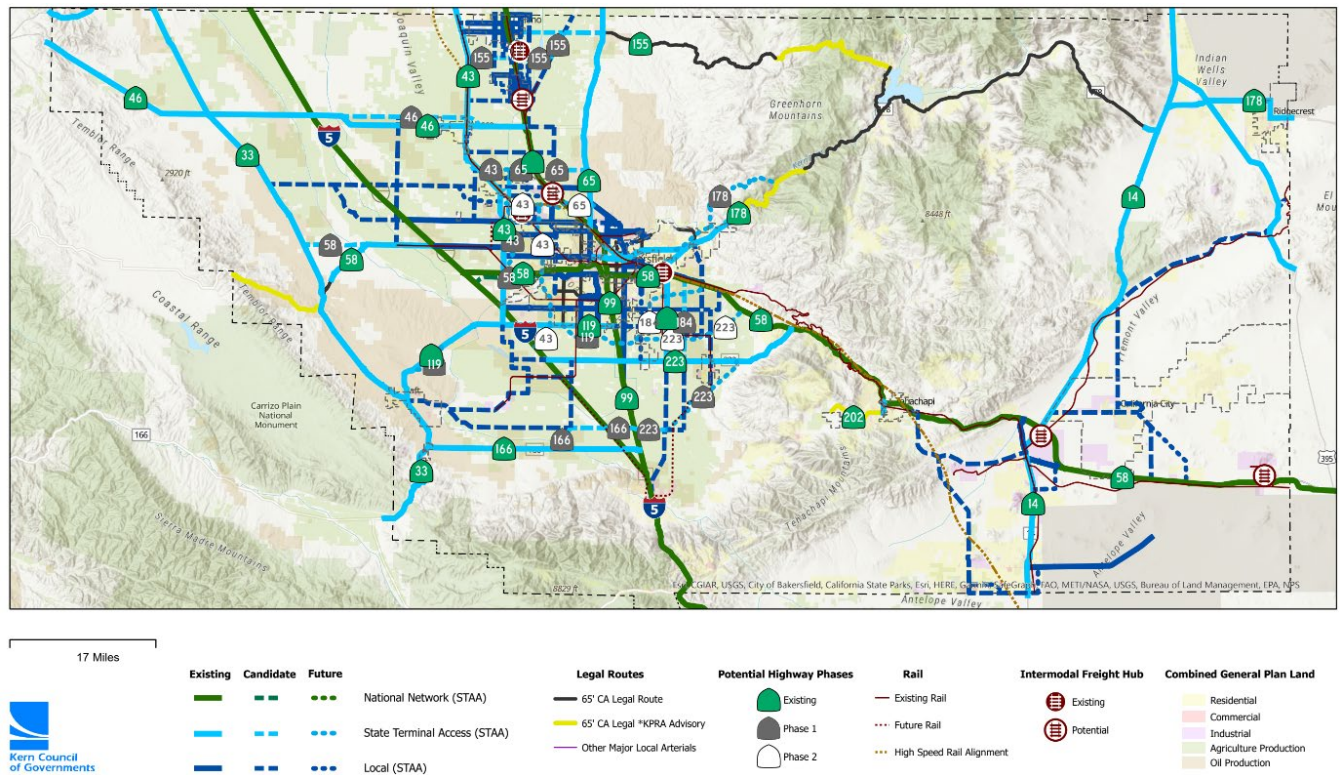


Figure 18. Existing, Candidate, and Future Truck Routes (Sample Maps from Appendix A1)

The Caltrans Route Matters Policy includes route adoptions, transfer of highway locations, re-designations, rescission, relinquishment, and access control modifications. For freeways, Freeway Agreements will need to be updated for Controlled-Access highways. The first step is documenting the roadway segments that the region is interested in altering the State designation, specifically, designating new state routes or requesting that the State relinquish existing State routes. The logical termini for the segments considered for designation change are shown on **Figure 17** and **Figure 18**.

The intent of this memorandum is to identify the information that must be submitted to the California Transportation Commission (CTC) when a local agency is requesting a State route designation change (i.e., route adoption or relinquishment approval).

Adoption:

To initiate the State route adoption approval process, the project engineer should consult with the District Liaison at least three months prior to completing the Project Approval and Environmental Document (PA&ED). The project engineer will need to provide a project report, environmental documents, and route adoption book items to the CTC. The project report will document the engineering decisions supporting the need for the proposed designation. The project report will also include project background, logical termini of proposed State route designation, project scope, and cost estimate. Environmental documents will need to be

approved by the CTC before they are presented with the route adoption book items. The route adoption book items consist of the following:

- A memorandum providing background information that justifies the need for the route adoption and recommending approval of the resolution.
- CTC resolution
- Project maps, such as a location map, vicinity map, and route adoption map.

The maps included in the route adoption book items will need to be signed by the delegated approval authority prior to CTC certification. The certified route adoption map should be consistent with the map presented at the public hearings. Once the route adoption map is certified and presented at public hearings, minor deviations for the alignment location are allowed only for engineering reasons listed in Caltrans Route Matters Policy. Major deviations of the adopted route alignments may require the reopening of route studies and a new route adoption process. Deviation limitations also vary if the alignment is in rural or urban settings.

A comprehensive study should be completed to identify if there are any locations with California Streets and Highway Code Section 83 right-of-way, right-of-way needed to acquire, and excess existing Caltrans right-of-way. Caltrans may request public hearings if there is any controversy over the route location. If the facility is adopted as a freeway or a controlled access highway, access rights from abutting landowners must be acquired.

For a freeway or controlled-access highway facility adoption, a Route Adoption Report must contain a Freeway Agreement between the local agency and CTC after the new route adoption. The report must include:

1. Location Map
2. Proposed facility and existing condition description - plan geometric design, cross section(s), alignments, pavement type and condition, structural sections, intersections, and nonstandard or exceptional design features.
3. Environmental and public hearing discussions
4. Summary of conditions along the existing or proposed State Highway
5. The proposed relocation of State highway traffic advantages, limitations, and disadvantages
6. National Environmental Policy Act (NEPA) required (only for federal-related actions, such as Federal Highway Administration (FHWA) approval)

If the access adoption is within the Interstate System, then the Agreement must be approved by FHWA. The FHWA approval is a two-steps process:

1. Determination of Engineering and Operational Acceptability – Requires a cover letter and an approved Project Initiation Document (PID) is needed. FHWA timeframe for review is at least 60 days, and once the proposal is approved, a letter will be sent to the District Director.
2. Final Approval - FHWA final approval will be sent to the District Director

Relinquishment:

All relinquishments are required to be made by a formal written form proposal and CTC resolution. The district project manager that initiates the relinquishment process will need to request and send the CTC relinquishment package, including the CTC resolution, to the Chief of the Office of Land Surveys, Headquarters Division of Right-of-Way and Land Surveys at least four months prior to completion of construction (if any needed). Applicants should allow one (1) month for processing and mailing a 90-day written notice of relinquishment. Applicants shall use the District Relinquishment Request Memorandum (See the Caltrans Right of Way Manual, Section 6.17.10.00 "Preparation of Requests" for details). The city or county may protest the relinquishment during the project initiation phase.

Proposed relinquishments may require FHWA approval. To determine if a relinquishment requires FHWA approval, see Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-1 Federal Law Summary. To request FHWA approval, a formal letter must be submitted to the FHWA division administrator for signature approval and recommendation from the district division chief with the required attachments. The request package must be submitted to the FHWA Project Delivery Director. The relinquishment request package may also be sent digitally through electronic mail. The letter must include:

1. Proposed relinquishment explanation
2. The reason approval is recommended
3. Explanation of why the relinquishment is in the best interest of the State
4. A description of the project scope when a project triggers the relinquishment
5. Explanation of the delay when the processing of the relinquishment has been postponed by more than three years.
6. An explanation of the plans or proposal for parking facilities associated with park-and-ride lot relinquishments to agencies other than cities or counties.
7. The letter Attachments:
 - a. Copy of the district relinquishment request memorandum, signed by the District Director
 - b. Copy of the draft relinquishment mapping
 - c. Aerial photos or maps, for easy assessment of how the relinquishment interrelates with the state highway, clearly showing the proposed area, existing and proposed State right-of-way lines and access control lines (access denial lines).
 - d. Copy of the National Environmental Policy Act (NEPA) document
 - e. Copies of other required documents:
 - i. Freeway agreement or controlled access highway agreement

- ii. Project approval document
- iii. Relinquishment assessment report
- iv. Initial site assessment (ISA)
- v. Relinquishment agreement
- vi. Set of plans for proposed developments on park-and-ride lot facilities (not required for relinquishments to cities or counties)
- vii. Local agency resolution requesting the relinquishment

The district should identify the types of relinquishments that are required for the appropriate project. There are five (5) types of relinquishments that may require or recommend certain documents.

1. Legislative Enactment - See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-2 for flow chart.
 - a. A project approval document. Also serves as PID for financial contribution relinquishments only.
 - b. PID is required for a construction improvement project. Provides a cost in PID.
2. Superseded by Relocation - See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-3 for flow chart.
 - a. Project approval document is required for the associated project (parent project) project approval and environmental compliance document created a need for the relinquishment.
 - b. Freeway Agreement is required when project approval document is not required.
 - c. Relinquishment Agreement is required when project approval document is not required.
 - d. City or County Resolution is required when project approval document is not required.
 - e. PID is required for the cost of relinquishment.
3. Collateral Facility - See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-4 for flow chart.
 - a. A project approval document is required if the associated project's (parent project) freeway agreement or controlled access highway agreement did not show relinquishment within the project area or there was no city or county resolution requesting the relinquishment.
 - b. PID with relinquishment cost is required.

4. Park-and-Ride Lot - See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-6 for flow chart.
 - a. Project approval document is required.
 - b. PID is required to provides cost estimate.
5. Nonmotorized Transportation Facility - See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-5 for flow chart.
 - a. Project approval document is required for Caltrans relinquishment. A local agency relinquishment project with complexity (greater than 0.1 mile in length) required a project approval document.
 - b. A project approval document is not required for a non-complex relinquishment local agency project by approving a resolution.

Procedures that apply to All Relinquishment Types:

1. Relinquishment Agreement is required if the relinquishment requires a transfer of funds, effort, or materials. The approved agreement is recommended to document the commitment of all participants.
2. Environmental Compliance and Coordination is required for all relinquishments.
3. Initial Site Assessment (ISA) prepared by the district hazardous waste technical specialist or consultant, is required to be submitted to the Headquarters Division of Environmental Analysis and the local agency requesting the relinquishments when a relinquishment agreement is required. If the relinquishment agreement is not required, then an approved ISA report must be provided to the local agency.
4. Freeway Agreements or Controlled Access Highway Agreements for Relinquishment of Local Roads and Superseded Highways. Required for all types of relinquishments except legislative enactment relinquishments.
5. Joint Field Review is recommended to resolve different interests of the condition or proposed improvement to the relinquished area.
6. Negotiation with the local agency is the responsibility of the District Director to determine the cost to relinquish. Conflict Resolution is the next procedure when the relinquishment and outstanding issues cannot be resolved by the District Director. (See Caltrans Project Development Procedures Manual (PDPM), Chapter 25, Figure 25-7 for flow chart)

Appendix A1 – News Article Summary of KARGO Study

Appendix A2 – Existing & Potential Truck Route Maps

Appendix A3 – Countywide Circulation Element Maps

Appendix A4 – ROW Footprints for Specific Plan Line Adoption

Appendix A5 – Candidate Nexus Study Projects

Appendix A6 – Presentation Materials for Stakeholder Outreach Efforts

Appendix A7 - Supporting Materials for AB 617