



Ethio Logistics
Sectoral Association

STUDY ON ROAD CONDITION ALONG THE ETHIO- DJIBOUTI CORRIDOR



February 2023

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Executive summary

The research attempted to explore the consequences of poor road conditions on the transportation system, as well as the costs of maintenance and servicing in the Ethiopia-Djibouti corridor. The study gathered both primary and secondary data. The primary data were acquired primarily through surveys and interviews from cross-border drivers, transport owners, cargo owners (shippers), and logistics service providers. The findings revealed that substandard roads had an impact on the transportation system, since they caused frequent vehicle breakdowns and raised maintenance costs. In addition, travel time and transportation expenses rise as a result of poor road conditions. It is thus recommended that the government adopt a good road infrastructure strategy that will improve road infrastructure sustainability and stimulate public engagement in road infrastructure provision and maintenance in order to expedite the development of the corridor.

Chapter one- Introduction

1.1 Background

Transportation infrastructure in Ethiopia has been neglected for decades, but it is now a national priority. A significant number of roads and railroads have been built or are in the process of being developed. The industry has played a critical role in lowering transaction costs for carrying products and commodities across the country. It provides its own percentage of GDP as part of the service sector. And there are a number of stakeholders who are directly or indirectly involved in the industry and play beneficial roles in its growth. Road transportation is critical in efforts to lift developing-country economies. The importance of road transport is more significant in the case of landlocked countries such as Ethiopia.

Our country has utilized the ports of Djibouti and Tajoura in Djibouti, Port Sudan, and Berbera Port in Somaliland to access port facilities and conduct its own foreign trade. The Port of Djibouti is the largest port that serves both import and export commerce, accounting for more than 95% of the total.

The lowlands separating Djibouti city from the Ethiopian border are largely arid desert. The inland population in this southern half of Djibouti is minimal. The older corridor to Addis Ababa passes through Ali Sabieh and thence south into Ethiopia at Dewele. This is the route taken by the railway built at the start of the 20th century and now derelict. A national highway parallels the railway, but is used only lightly, because some 200 km immediately south of the border with Ethiopia are unpaved^[1].

The main highway to Addis branches off near Ali Sabieh and thence runs west-northwest to the Galafi border crossing, 217 km from Djibouti city. From there the highway in Ethiopian territory soon joins the north-south highway that connects the Eritrean port of Assab with Addis. Since around 2000 the whole highway from Djibouti city to Galafi flat much of the way has been paved with asphalt, which explains why it is now the corridor used by the vast majority of Ethiopian traffic, even though the road distance is about 65 km longer than the southern corridor paralleling the railway south from Ali Sabieh: 910 km via Galafi versus 844 km via Dewele.

The major Addis Ababa-Djibouti Road is of varying condition, ranging from utter failure in Djibouti to a modern six-lane (three lanes each directions) tolled expressway in Ethiopia. The majority of Ethiopia's roads are in good condition, albeit much of it is small and single-lane. Apart from the 80-kilometer length leading out of Djibouti City, the road in Djibouti is in bad condition. In 2019 typical daily truck traffic from Djibouti port to Ethiopia was about 3000 loaded trucks.

According to reports, cross-border freight truck operators are concerned about deteriorating road conditions from the Port of Djibouti to the Ethiopian border via the Galafi checkpoint. Trucks moving freight from Djibouti to Ethiopia are being involved in accidents due to poor roads. In response to this, Ethio Logistics Sectoral

Association decided to conduct the study in order to necessarily assess the impact of poor road condition on the sector and the economy as a whole, further more to recommend stakeholders and policy makers.

1.2 Scope

The scope of the study encompasses the Ethio-Djibouti corridor road aspects. Desk research, survey and interviews were carried out for the corridor.

Some of the findings in this report are based on the analysis of third-party data. While ELSA makes efforts to validate data, ELSA cannot warrant the accuracy of third-party data.

1.3 Objectives of the study

Ethio Logistics Sectoral Association's goal is to contribute to the logistics sector's growth and towards socio-economic development by advocating, taking initiatives, facilitating, and providing a recommendation for efficient and effective logistics and transport systems in the country.

The study aims to recommend a solution to improve corridor efficiency and institutional capacity whose impact will be to deepen the public-private partnership. Through the use of collected data and analysis, the aim of the survey is to confirm the presence and level of the deteriorated road condition.

Chapter Two- Ethiopian Road Transport Overview

2.1 Road Transport Overview

The National Transport Policy aims to create a transportation system that is accessible, integrated, customer-oriented, safe, ecologically friendly, and globally competitive. The 10-year transportation perspective plan (2020-2030) has also outlined important goals and targets aimed at expanding transportation services in both urban and rural areas. Among the objectives is to increase the entire length of all-weather roads from 147,000 km to 245,942 km in 10 years.

Ethiopia's three main access corridors to the sea are the Assab (Eritrea), Djibouti (Djibouti) and Berbera (Somalia) corridors. The region's other ports, namely Port Sudan (Sudan), Massawa (Eritrea) or Mombasa (Kenya), are too out of the way to be used regularly by Ethiopia and can not be considered as really competitive, although now and then Ethiopia has made attempts to use them for transiting some of its exports and imports. The same applies to the other Somali ports of Bosaso, Mogadishu and Kismayu. Ethiopia uses Djibouti port as its primary international commercial entry point for importing and exporting goods.

Ethiopia has the following road corridors with neighbouring nations:

- Addis Ababa –Dire Dawa— Djibouti
- Addis Ababa —Metema —Port Sudan, Sudan
- Addis Ababa — Mekelle — Assab, Eritrea
- Addis Ababa —Moyale —Mombasa, Kenya
- Addis Ababa—Jijiga — Berbera, Somaliland

2.2 Nature of Ethio Djibouti Corridor

Three corridors - two road and one rail - link Djibouti with Addis Ababa:

- The 910 km road via Galafi, of which 217 km lies on Djiboutian territory. Galafi is the border post between Djibouti and Ethiopia. The road meets the Assab-Addis Ababa route at Dobi. This main route currently carries almost all the traffic into Djibouti.
- This road extends for 844 km via Dawenlé; 100 km lies on Djiboutian territory. The road runs parallel to the railway as far as Dire-Dawa, where it meets the Assab-Addis Ababa Road. For Djibouti-Addis traffic the Dawenle corridor is shorter than the Galafi route by about 66 km.
- The Ethio -Djibouti railway (EDR) is a standard-gauge line that runs for 781 km via Dire Dawa. Single track, electrified and signaled railway line links Addis Ababa and the port of Djibouti

The main trunk road meaning the road that has the most traffic between Addis Ababa, Ethiopia, and Djibouti City passes through the Ethiopian towns of Awash and Mille, crosses the border at Galafi. The two road routes in use are the "North Corridor," a road through Djibouti, the Galafi border, and Semera using Route National 1 (RN1) in Djibouti, with a total length of 214 km and an annual average daily traffic of 2,116

heavy vehicles. During turn around joins the route national 1 (RN1) in Djibouti, passes through Yoboki, continues just north of Ali-Sabieh, and then enters Djibouti City.

The route is shown in the figure below. This section of the Djibouti-Ethiopia road corridor carries trucks mostly six-axle truck/trailer combinations, with those carrying wet bulk mainly fuel tankers comprising about 35 % of the heavy goods traffic and the remaining 65 % consisting of dry bulk and container trucks. The other route "South Corridor," between Addis Ababa and Djibouti City branches off at Awash and passes through the Ethiopian towns of Dire Dawa and Dewele before crossing the border; it continues into Al Sabieh, Djibouti, before joining the RN1 and then the RN5 in Djibouti, with a total length of 104 km.

The current journey time on the Northern Corridor is 3 days, whereas the South Corridor takes only 2.5 days. Both corridors have areas with inadequate road infrastructure, inefficient logistics and transportation systems, and high costs.



Map of main truck road between Addis Ababa and Djibouti city

Source: Google maps

The main trunk route between Djibouti and Addis Abeba has been broken down into the following sections and nodes for the purpose of analyzing its physical infrastructure:

Point	Start and end	Pavement condition
PK1-PK12	Djibouti city and suburbs, storage areas at PK12	Fair: 7m asphalt, wide shoulders, level
PK12-PK33	Toll collection & weigh station at PK20, to Arta turn-off	Good: 7m asphalt, drop off to gravel shoulders

PK33-PK73	Arta-Grand Bara	Good: 7m asphalt + paved shoulders 1.5m
PK73-PK83	Grand Bara-Triangle de Ali Sabieh	Very poor, severely deteriorated
PK83-PK119	Triangle de Ali Sabieh-Dikhil	Poor: 7m asphalt, deteriorated, frayed edges to 1.5m gravel shoulders
PK 119- PK216	Dikhil-Galafi border	Very poor, severely deteriorated, 7+m wide, 2m gravel shoulder fords vulnerable to floods
Route National 1 (RN1) Section	Djibouti City to Dire Dawa turnoff (80 Km)	Poor: Single carriage way 11m wide hard shoulders, fords vulnerable to floods
Dire Dawa	Dire Dawa turn-off to Yoboki (90Km)	Very poor to poor condition: with sections where the road has failed completely
Yoboki	Yoboki to Galafi (40Km)	Very poor: paved route with deep ruts and gullies
Galafi	Galafi to Mille (170Km)	Fair to good: narrow carriageway
Mille	Mille to Awash (300Km)	Fair to good: narrow and unpaved carriageway and shoulders
Awash	Awash to Adama (125Km)	Fair to good: narrow carriageway
Adama	Adama to Addis (80 Km)	Very good: six-lane dual carriageway three lanes in each direction toll road

2.3 Bad Roads and Vehicles' Maintenance/Services

Roads in poor condition result in higher variable costs of operation because they (i) reduce fuel efficiency; (ii) damage the vehicles, leading to higher maintenance and higher operation costs; (iii) reduce the life of tires; (iv) reduce vehicle utilization because of lower speeds; and (v) reduce the life of the truck. How significant is the impact of poor roads on variable costs, and what factors make the impact bigger or smaller? ^[3]

Bad roads are damaging the suspension, steering box and shock absorbers of many vehicles ^[4]. Reference ^[4] observed that due to bad roads, technical snags on buses have increased manifold. Problems at foundation bolt, suspension and reports on flat tires have become common. Reference ^[4] who runs a fleet of buses in the city, said that the wear and tear of tires has increased. This increases the transportation costs, which are passed on to consumers ^[5], a transporter, said that the potential effects of deteriorating roads extend far beyond increased vehicle maintenance and repair costs. Driving on roads with deteriorated pavement and potholes leads to frequent maintenance, trucks plying on bad roads experience more vibrations and could damage the cargo being transported and increased consumption of fuel which possibly could hike cost of maintenance of vehicles and prices of transportation.

Reference ^[5] analyzed the impact of road maintenance on VOCs. He compared a limited number of potential road maintenance strategies against a base case which consists of routine maintenance only at a cost of \$322 per km (i.e., off-carriageway work). The five maintenance strategies evaluated include: patching; surface-treated reconstruction (flexible pavement with a crushed stone base and double bitumen surface treatment), initiated when surface roughness reaches Seven International

Roughness Index (7IRI m/km), with patching; surface treated reconstruction as above, without patching; asphalt-concrete overlay, initiated when surface roughness reaches 5 IRI, with patching; and asphalt-concrete overlay, initiated when surface roughness reaches 5 IRI, without patching. The analysis examined these strategies over a twenty-year period during which traffic was assumed to grow at 3% annually. The net present values of each option were calculated using a 12% discount rate. The results were summarized for roads in both poor and fair condition for initial average daily two-way traffic volumes (AADTs) of 500 and 1,000 vapid. Seventy percent of the traffic consists of trucks. Expenditures on maintenance and VOC savings expressed as annualized cash outlays and savings. The benefit and cost ratios likewise showed the annualized cash payoff from each strategy.

According to ^[6] potholes cause immense damage to vehicles. He said to better understand the additional costs associated with potholes, the Federation of Zambian Road Haulers interviewed truckers to compare the running costs of a truck and trailer combination on a road with potholes with those on a road without potholes. He said the vehicle considered was a combination tractor and trailer with twenty-two wheels. The costs estimated are those over and above normal running costs. He said on a road with bad potholes, a driver can either pursue a defensive strategy or ignore the potholes and carry on as usual. If he follows a defensive strategy, he first slows down and changes gears. He then has to negotiate the loaded truck and trailer, weighing between 44 and 50 tones, through the potholes. This causes extra stress on the tires, wheel bearings, spring assemblies, spring hangers, chassis, cross-members, engine mountings, gear box mountings, brakes, steering assemblies, and shock absorbers. Having negotiated the potholes, he accelerates and changes gears again. On the other hand, if he ignores the potholes, he will drive through them at his regular speed, resulting in more damage to the vehicle and tires and increasing the risk of accidents which could result increasing axle pressure by at least three times.

According to Reporter newspaper deteriorating condition of roads from Port of Djibouti to the Ethiopian border through the Galafi checkpoint distressed cross-border freight truck owners. Vehicles transporting cargo from Djibouti to Ethiopia are facing accidents because of the damaged roads, which span up to 200 kilometers^[7].

2.4 Several Factors Impact Negatively the Efficiency of the Corridor

- Infrastructure deficiencies^[2]:
 - i. The road infrastructure along the corridors is in varying conditions. Some sections of the RN1 were upgraded with the support of the European Union in 2009, JICA and Saudi funds. On the RN5 and RN19, the road is in poor condition.
 - ii. The absence of parking and rest areas along the corridors and the narrow cross section result in congested sections due to trucks parked along the road, as well as road safety hazards.
- Road safety:

- i. Little data on road safety in Djibouti is available. Djibouti is a non-participating member in the road safety survey conducted by the World Health Organization.
 - ii. The two corridors - the “North Corridor” and the “South Corridor” – pass through several major cities, leading to risks for the more vulnerable users.
- Lack of appropriate maintenance of the infrastructure despite of the existence of a toll:
 - i. Despite the existence of USD 20 toll and the institutional reform of the sector that created in 2013 the Road Agency (ADR) and in 2018 Djibouti Ports Corridor Road SA (DPCR), the road network suffers insufficient maintenance
 - ii. There is currently no axle load control. Therefore, trucks are often overloaded, especially bulk trucks. This leads to a quick deterioration of the road conditions.

Current road condition between Dikhil and Dire Dawa Turn off

Source: Reporter News Paper & ESLSE



Chapter Three-Methodology and Discussion

3.1 Research Approach and Methodology of Activities

In order to develop a greater understanding of the road condition on the Djibouti corridor, we conducted two kinds of outreach: interviewing with trucking industry players and surveys on cross-border truck drivers, cargo owners (shippers), transport associations, and logistics service providers along the Ethio-Djibouti corridor, as well as desk research and analyses of collected data.

3.2 Survey Development

The “Road Infrastructure and Related Services on the Ethio-Djibouti Corridor” survey (see appendix A) developed for this study was designed and organized targeting cross boarder truck drivers, cargo owners (Shippers), truck owners and logistics service providers. As part of the survey development process, a working meeting was held with board of directors of the association.

Three distinct questionnaires were developed in order to ensure that the study addressed the perspectives, issues, and difficulties of each stakeholder. The survey functioned not only to provide an understanding of the road condition but also parking area challenges.

Due to the sensitive nature of the matter, drivers were unwilling to participate in filling out the survey or an interview. Nearly all of the drivers who were approached by surveyors declined to participate. In fact, when surveyors came close to them, it agitated Security and Safety Issues. Some drivers and truck owners provided unsolicited verbal feedback to the surveyors.

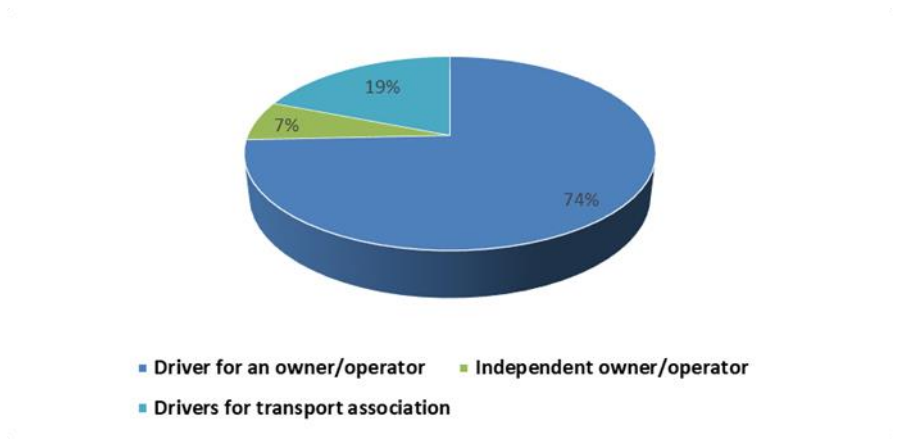
3.2.1 Survey Distribution and Collection

To reach a broad potential survey pool, we disseminated the survey to a wide range of truck drivers through multiple channels. The Ethiopian Freight Forwarders and Shipping Agents Association and Ministry of Transport and Logistics Services Provision Council distributed a survey link to its members via email. Surveys were distributed to truck owners, truck drivers, freight forwarders, and cargo owners both directly, through site visits to dry port, truck association and government offices, and indirectly, through email and social media platforms to reach our members. Locations for the site visits were chosen in order to reach a nationally representative sample of truck owners and drivers. A total of 75 completed surveys were collected. During site visits, survey teams dispatched 300 questionnaires. In fact, the survey team estimates achieving response rates below 50 percent during nearly every site visit. Surveyors experienced overwhelmingly negative response rates after briefly explaining the purpose of the survey to drivers.

3.3 Demographics

98 percent of the respondents reported that they are typically long-haul drivers. The figure below displays respondents’ category as drivers. 74 percent of drivers identified

themselves as driver for an owner/operator, 7 percent identify as independent owners/operators and 19 percent identify as drivers for transport associations.



When asked how long they have worked in the Ethio-Djibouti corridor, 54 percent of the drivers responded that they have experience of between one and ten years, while 46 percent have experience of more than ten years.

Survey Question: "In the Ethio-Djibouti corridor, please rate the level of the problem caused by the following bottlenecks on the transportation of goods by vehicle." shows that at least half of the respondents considered the corridor's extensively deteriorated road conditions and lack of adequate truck parking facilities to be a very serious

Question 1

Loading process in Djibouti

Question 2

Domestic cargo unloading process

Question 3

The problem of lack of vehicle parking and facilities in the Ethio-Djibouti corridor

Question 4

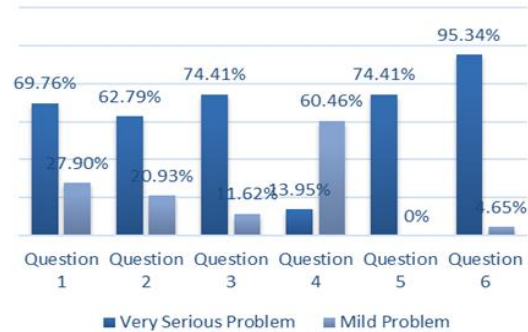
Vehicle aging problem

Question 5

The problem of road breakdown

Question 6

The problem of road safety



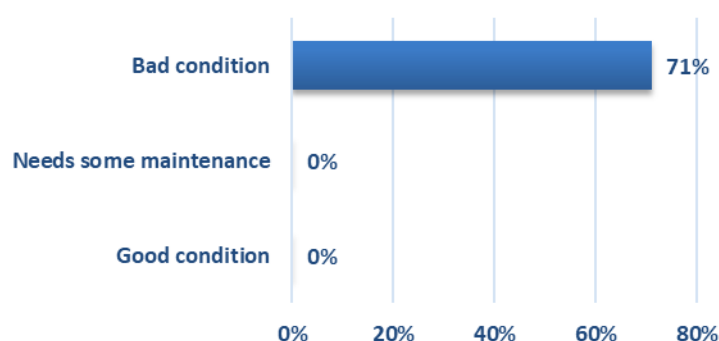
The paramount concern of almost all drivers besides road safety is the problem of road breakdown and lack of vehicle parking facilities.

Survey questionnaire and individual interviews were used to gather data to assess the effects of bad roads on the Ethio-Djibouti corridor. The survey questionnaire was administered to cross border truck drivers, cargo owners (shippers), truck owners and logistics service providers.

3.4 How do you rate Djibouti's road condition?

For the survey question “How do you rate Djibouti's road condition?”, 71 percent of the cross-border drivers responded that the road is in a bad condition. Out of the 71 percent, 85 percent expressly claimed that the roads from Galafi to Dikil are in terrible condition, while 15 percent explicitly stated that the roads from Galafi to Dire Dawa Megenteya are also in a bad condition.

85% expressly claimed that the roads from Galafi to Dikil are in terrible condition, while 15 % explicitly stated that the road from Galafi to Dire Dawa Turn off is severely deteriorated.



3.5 Effects of Bad Roads on Time

Time usually wasted while travelling on bad roads. Hours that can be diverted to something profitable are wasted on the road which contribute badly to the economy. A journey that takes 5 hours can turn to 7 hours due to bad roads.

Respondents were asked how long it will take them to reach Djibouti before and after the road deteriorates. The table below contains drivers' answers to those questions:

	1 day	1 ½ day	2 days	3 days	5-8 days
Before Deterioration	15	5	20	5	6

	1 ½ days	2 days	3 days	1-6 days	12-16 days
After Deterioration	8	12	16	12	2

3.6 Effects of Bad Roads on Vehicle Maintenance Cost

Bad roads contribute negatively to national development because transport systems become dormant affecting economic activities, which by extension stagnant economic growth. Bad roads also tremendously affect the cost of maintenance as vehicles plying bad roads mostly experience frequent breakdowns. The research outlined questions to determine the extent of bad roads on vehicle maintenance.

As a result, respondents were asked if the nature of the roads affected the lifespan of their vehicles traveling this route. 96% of the drivers answered yes. Drivers who participated in the individual interviews said that the deteriorated road conditions may potentially result in the entire loss of their vehicles. The following are some of the problems/damages caused by road deterioration:

- Truck splits into two
- Broken chassis
- Broken axle-suspension
- Broken shackle
- Truck body damage
- Broken dashboard
- Broken shock absorber
- Freight/cargo damage
- Prone to flooding of goods/cargo
- Early tire damage

When they experience the aforementioned issues, they go through extreme exhaustion and severe fatigue. Drivers' problems do not end here:

- In order to receive mechanic and maintenance services. Locals demand truckers pay 200,000–600,000 ETB only to move the vehicle or goods up when their trucks break down.
- Djibouti lacks emergency services, so if a vehicle requires repair or spare parts, such services must be shipped from the capital or other towns of Ethiopia, which will take one to two days.

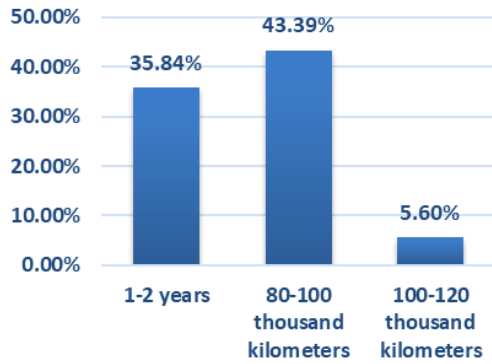
Driving on roads with deteriorated pavement and potholes leads to frequent maintenance. Moreover, trucks plying on bad roads experience more vibrations that could damage the cargo being transported. Respondents rated the level of damage on their truck as follows:

Light repair damage	Heavy but repairable damage	Total loss of vehicle	Other
2.85%	55%	38.57%	2.85%

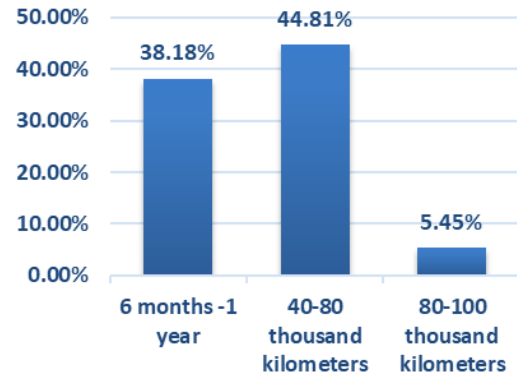
Cost of truck maintenance has doubled since the road deteriorated due to bad road conditions

As shown in table above, when respondents were further asked if the nature of roads affected their vehicles maintenance/service costs, 96.4% said yes. They also indicated that the cost of maintenance has doubled since the road deteriorated.

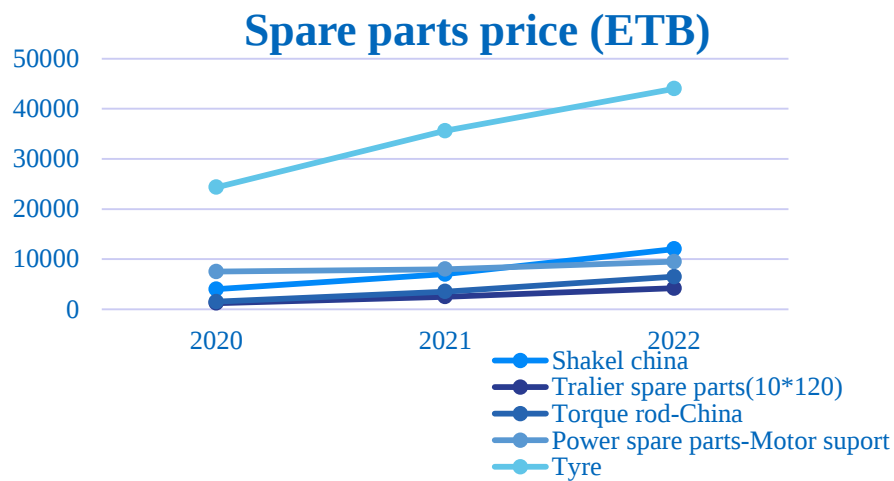
Respondents were further asked how long a new tire would last before and after the road deteriorated, and they responded as follows:



Before deterioration

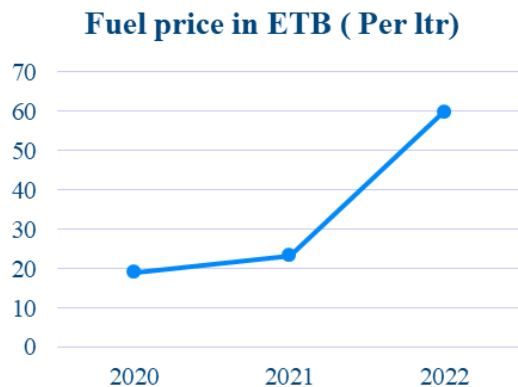


After deterioration

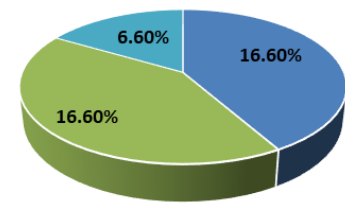


3.7 Effects of Bad Roads on Fuel Cost

Driving on roads with deteriorated pavement and potholes leads to increased consumption of fuel which possibly could hike cost of maintenance of vehicles and prices of transportation.

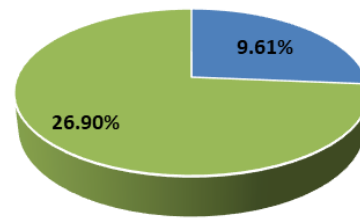


Respondents were asked the amount of fuel their truck consumes before and after the deteriorated road condition and the following were their answers:



■ 300-960 litres ■ 1000-1500 litres
■ Depends on the car

Before deterioration



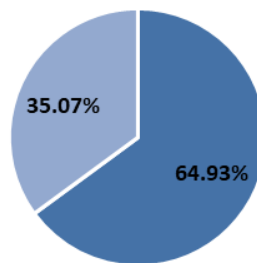
■ 300-800 litres ■ 1000-1800 litres

After deterioration

3.8 Effects of Bad Roads on Health

In addition to causing traffic obstructions, bad roads can cause health problems. In addition to causing car accidents, potholes on highways and other regular roads can cause a number of health issues in people, including cervical spondylitis, cervical slide disk, lumbar disk, neck and back discomfort, and spinal pain.

For the survey question, "Has the road condition caused you any health issues?" 64.93 percent of the drivers answered yes, while 35 percent said no. The respondents have further justified that the bad roads are causing them lower back pain, kidney failure, and respiratory problems.



■ Yes ■ No

3.9 Harassment along the corridor

A further obstacle faced by cross-border drivers is unwarranted harassment by locals and border officials. Drivers are also exposed to unnecessary stoppage, inspection and restriction. A key factor to harassment by officials is that many traffic polices and customs officers responsible for inspections consider the road to be a prime source of additional personal income and enrichment often as a result of their low morale. Locals harass drivers by randomly asking them for money and making them stop their trucks. Drivers are also being brutally murdered by bandits for the purpose of theft and freight crime.

Drivers are also being brutally murdered by bandits for the purpose of theft and freight crime

Chapter Four-Conclusion and Recommendation

4.1 Findings

The findings of study are summarized as follows:

- In terms of the assessment of the roads along the corridor, majority of the respondents agreed that the roads were generally bad and affected transportation in the corridor especially from Galafi to Dire Dawa Megenteya.
- Due to the bad nature of roads most drivers found it uncomfortable travelling on the roads.
- It was found that the bad natures of roads had greatly increased vehicle maintenance and repair costs.
- Deteriorated road conditions lead to an increase in travel time and transport costs.
- The study also revealed that the bad nature of roads is greatly affecting the driver's health, leading to kidney failure and respiratory problems.

4.2 Conclusions

- From the findings, it can be concluded that the study finds evidence of the effects of Ethio-Djibouti's bad roads on transportation and maintenance of vehicles. Good road infrastructure makes transportation of goods, services, and people easy, which is a country's wheel of development.
- Good roads facilitate easy transportation and timely delivery of goods/services. They can also contribute to high agricultural productivity and good quality health care delivery.
- Good roads help reduce maintenance, fuel and running cost on transport. There is no doubt about the benefits good roads can bring to a country's economy.
- This paper has shown that infrastructure conditions have implications for trade. Poor infrastructure leads to high trade costs by increasing transport prices.
- Successive governments and decision-makers need to improve the policies with regard to roads infrastructure in the Ethio-Djibouti corridor to accelerate the needed development the corridor deserves.

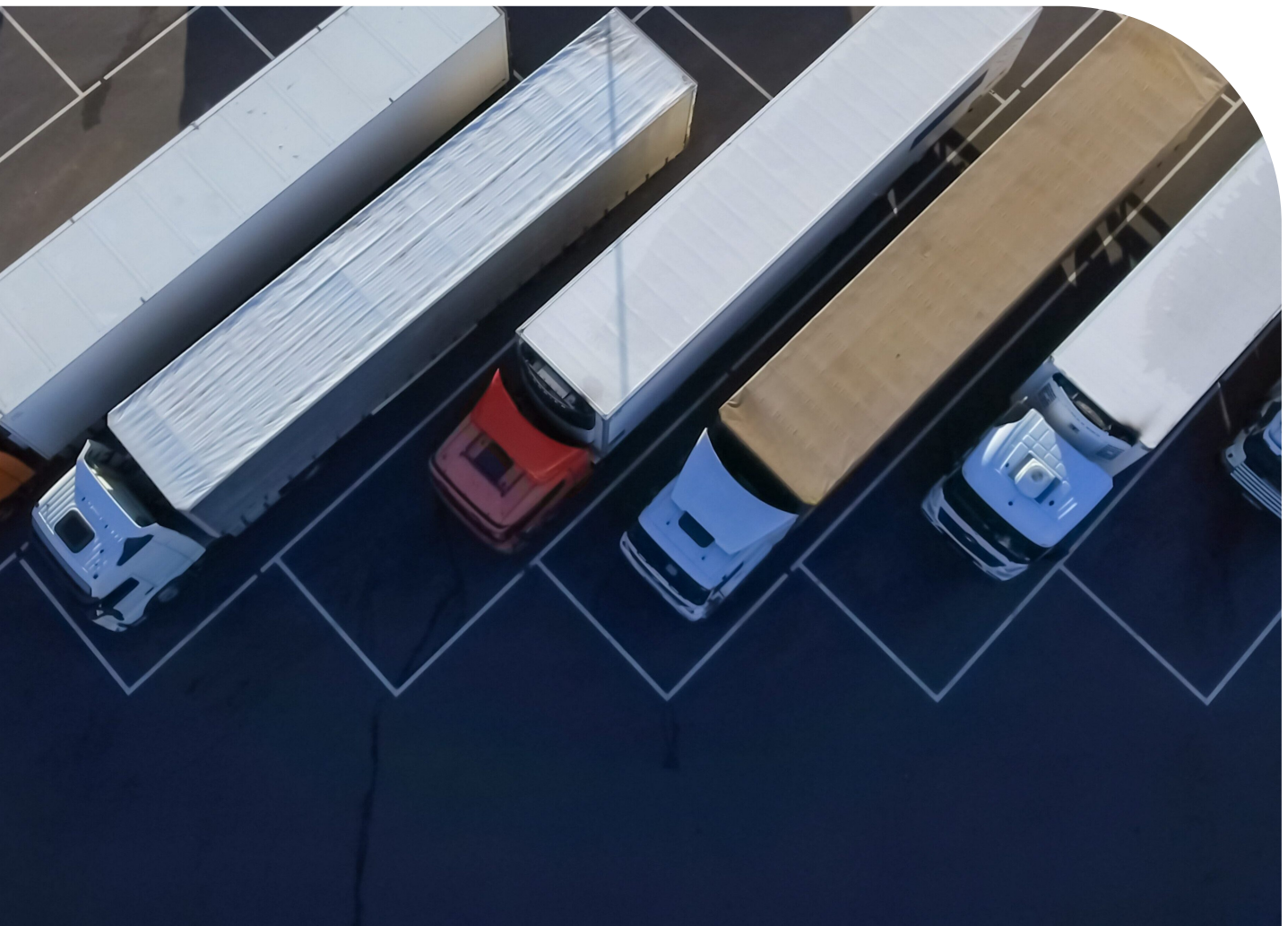
4.3 Recommendation

- The government must pay close attention to corridors since they serve as entrance points for importing and exporting commodities. and must set aside a sufficient budget to keep the road in good condition.
- Successful implementation of Agreement on the utilization of the Port of Djibouti and service to cargo in transit and Agreement on Road Transport Service between the two countries
- Routine monitoring and evaluation can be built into road infrastructure investment policies to ensure that roads construction carried out on the corridor are properly done.

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TRUCK PARKING STUDY ON ETHIO- DJIBOUTI CORRIDOR



FEBRUARY 2023



Ethio Logistics
Sectoral Association

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Executive Summary

Every day, goods worth millions of ETB are transported on the Djibouti corridor, which constitutes the backbone of the country's economy. Despite the sector's effort to improve its performance in terms of volume, it faces a considerable range of issues. Over the past few decades, increases in population, greater economic activity, and changes in supply logistics practices have resulted in steady and dramatic growth in truck traffic on the corridor and a widespread shortage of truck parking locations. With freight demand projected to grow, addressing the growing issue of truck parking shortages is a high priority. Across the range of stakeholders, there is a common understanding of the unavailability of safe and secure parking facilities.

Just as the trucking industry is critical to our Nation's economic success and way of life, safe, accessible truck parking is critical to the people who drive trucks, and the broader community. Every day, thousands of truck drivers experience frustration as they look for parking to rest, comply with safety laws, or stage loads for customer appointments.

In the road haulage sector, cargo, equipment, and increasing personnel are all targets for criminals. Such cargo theft and illegal boarding of trucks cause substantial financial and reputational losses to supply chain operators. Currently, there is a shortage of facilities that enable safe and secure parking of trucks and that also provide a minimum level of services to cater to the social well-being of the drivers.

Drivers, transport companies, forwarders, shippers and insurers, and society as a whole will benefit from an adequate supply of parking facilities via the protection of drivers, cargo, and transport equipment. Furthermore, road safety, through well-rested and stress-free drivers, is also an area in which such facilities can have a considerable positive impact.

Ethio Logistics Sectoral Association recognized truck parking issues and, resultantly, initiated a study on the issue of Truck Parking along the corridor. This study gathered both primary and secondary data. The primary data was acquired through survey and interviews from cross-border drivers, transportation associations, cargo owners(shipppers) and logistics service providers.

Chapter One- Introduction

1.1 Background

Road is the dominant mode of transport in Ethiopia's trade and logistics, accounting for close to 85% of all freight. Every day, goods worth millions of ETB are transported along the corridor, traveling long distances and making cross-border trips. However, despite the sector's effort to improve its performance in terms of volume, it nevertheless faces several issues. The lack of adequate accommodation for truck parking along the freight corridor continues to be a critical issue for the service provider and cargo owners. Drivers may resort to parking on the side street, or other unsafe areas, creating hazardous situations for the truck drivers, cargo, and other road users.

Robberies, hijacks and other violent forms of cargo theft jeopardize employee safety. As a part of an attractive working environment, truck drivers, when resting under the driving and rest time rules as laid down in regulation, need to be able to take their breaks in a safe and secure environment that also provides at least minimum levels of service. In addition, criminals cause substantial financial and reputational losses to supply chain operators. The road freight transport sector continues to be an attractive target for cargo thieves. Cargo thefts result in direct losses, with most thefts taking place when trucks are parked alongside streets or undesignated areas. Apart from the longstanding threat of cargo theft, a situation exemplified well by developing parking facilities with the necessary amenities like tight security, fences, guards, cameras, resting areas, maintenance and wash and lighting at parking areas. In addition to providing more physical parking, mobile device applications can assist truck drivers in finding and securing parking, allowing more efficient use of the parking.

1.2 Need for truck parking facility

Stakeholders and the logistics community have come to better understand the public benefits of truck parking. Truck parking unavailability is a national concern affecting the safety of commercial motor vehicle drivers, the safety of cargo, and the efficiency of supply chains. Drivers need adequate rest in safe places to continue to safely operate on the roadways and continue to play a vital role in the economy. The truck parking absence is primarily a safety issue as well. Drivers must park their trucks to maintain adequate rest and avoid driving while fatigued, and when designated parking is not available, drivers are forced to either continue driving or park in non-designated areas

Lack of designated, secure parking increases the personal risk from a driver safety perspective, as well as driver stress. Providing drivers with safe, designated places to park reduces the use of locations like side streets and undesignated facilities. Averting parking in undesignated locations improves community safety for all and reduces cargo theft, and public or private property not designed for heavy vehicle parking.

Demand for truck parking is a culmination of factors determined by the type of parking drivers require, determining where and how much parking is needed at the local level to accommodate staging and temporary parking requires knowledge about how local industry supply chains impact communities and land-use planning.

The lack of safe, convenient, and available parking along corridors forces truck drivers to make difficult choices with potentially dangerous consequences. Therefore, providing truck parking also benefits the traveling public, consumers, and communities. Potential impacts include:

Safety: A lack of available safe parking forces some truckers to drive longer than is safe while they search for a place to stop to rest or to park illegally, endangering themselves and, when parked on the side of the road, creating a hazard for the motoring public. Lack of designated, well lit, secure parking increases personal risk from a driver safety perspective.

Security: Undesignated parking places lead the driver and the cargo at a security risk. Designated truck parking facilities often have lighting, security cameras, fencing, controlled access, and other drivers, which make them significantly more secure than undesignated locations. The driver and cargo at undesignated locations have higher exposure to theft, damage, and driver assault. Such facilities that decrease undesignated parking reduce these risks, benefiting the drivers, the trucking companies, and the owners of the cargo.

Preservation of Public Infrastructure: When drivers cannot find authorized parking, they might park on roadway shoulders or ramps. Frequent stops and starts from heavy trucks create more wear than the infrastructure was designed for, often leading to pavement rutting and cracking of the roadside. The need to do shoulder reinforcements and repairs can be costly for local and State governments.

Costs: Reducing unnecessary truck travel will decrease the costs of trucking associated with driver wages, fuel, vehicle costs, etc. In a competitive environment, these savings tend to be passed onto shippers (cargo owner), and ultimately to customers in the form of lower-cost products.

Time: This Parking facilities make it easier to find a space and allow truck drivers to work more hours each day will reduce the time that it takes to complete shipments. The additional driving time will allow the shipment to be completed sooner, reducing time-dependent costs per shipment, such as driver wages, permits, licenses, insurance premiums, and overhead, among other costs.

Truck drivers need to park for many reasons, and there are unique challenges for various types of parking needs. Truck drivers are essential workers who need to take breaks for rest and safety. The following explains why drivers need to park:

				
Cross Boarder	Staging	Break/ Time Off	Emergency	Safety & Security
Cross boarder drivers are on the road for days or weeks traveling across the country. They need more amenities (rest room, restaurant, shower, etc.)	Truck drivers picking up and delivering freight at manufacturers, warehouses, and distribution centers need to park nearby to await an appointment	The driver must be off duty or may need to take a break meaning they are no longer working and will not have to move the truck for any reason.	Drivers may be impacted by an unprecedented truck breakdown or flat tire and may need maintenance or roadway problems. Their original itinerary is disrupted, and parking is needed immediately.	Drivers face threats of theft, harassment and freight crime

1.3 Scope of the study

The scope of the study encompasses the parking area itself but also the ancillary activities that contribute to the overall service offering of the activity as well as other activities (or other business lines) those benefits from or are adversely affected by the inexistence of the facility.

Some of the findings in this report are based on the analysis of third-party data. While ELSA makes efforts to validate data, ELSA cannot warrant the accuracy of third-party data.

1.4 Objective of the study

Ethio Logistics Sectoral Association's goal is to contribute to the logistics sector's growth and towards socio-economic development by advocating, taking initiatives, facilitating, and providing a recommendation for efficient and effective logistics and transport systems in the country.

The study aims to recommend a solution to improve corridor efficiency and institutional capacity whose impact will be to deepen the public-private partnership. Through the use of real time truck parking data and consultations with the trucking industry, law enforcement, and truck stop operators, this study will identify where trucks are parked along the corridor.

This study assesses current truck parking conditions along the Djibouti corridor and identifies gaps between truck parking supply and demand, defines infrastructure and policy needs, and proposes potential capacity and technology solutions.

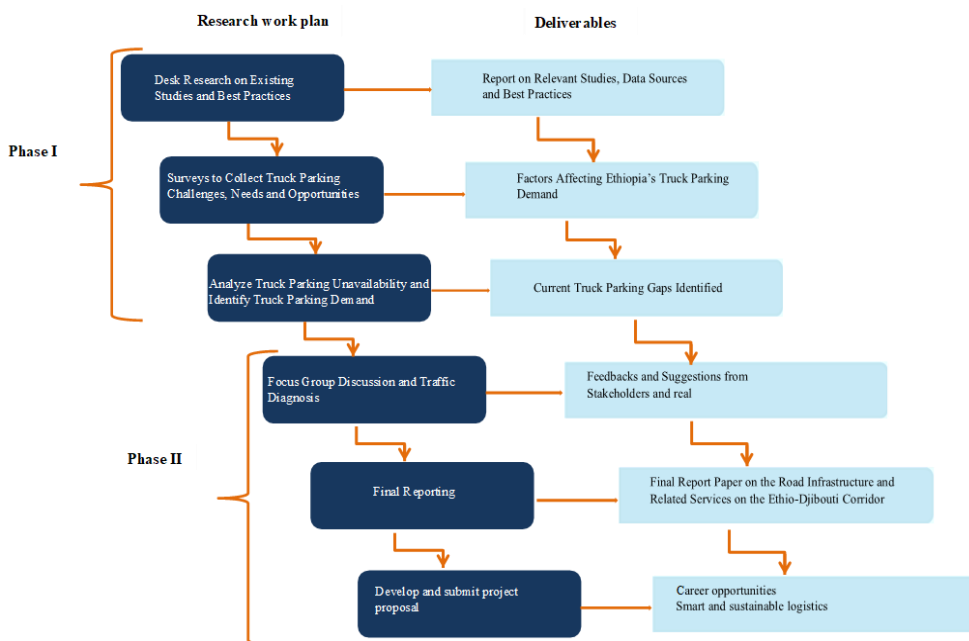
Ultimately, the study will identify the gap between the supply and demand for safe truck parking spaces, associated infrastructure and policy needs, and potential capacity and technology solutions to resolving them.

The objective of this study is to provide an in-depth analysis of the truck parking issues along the Ethiopia-Djibouti corridor. The findings of the study will lay the groundwork necessary for stakeholders to develop strategies to address unavailable truck parking.

Specifically, the study is to:

- i. Identify the challenges stakeholders face due to unavailability of truck parking facilities
- ii. Identify amenities and services required as per stakeholders
- iii. Inspect the management and legal aspects
- iv. Advise and recommend policy makers

1.5 Study Structure



Truck Parking study will be developed in two phases, with a total of six work tasks.

Chapter Two- Detailed Activities and Approach Methodology

2.1 Research Approach and Methodology of Activities

In order to develop a greater understanding of truck parking challenges and needs on the Djibouti corridor, we conducted two kinds of outreach: interviewing with trucking industry players and surveys on cross-border truck drivers, cargo owners (shippers), transport associations, and logistics service providers along the Ethio-Djibouti corridor, as well as desk research and analyses of collected data. To recognise the unmet parking demand and needs for truck movements in today's economy and the 10-year transport plan and policy to provide adequate truck parking capacity.



Desk Research

Desk research was carried out using available data. A literature review was conducted to provide context for Ethio-Djibouti corridor parking's current situation



Existing supply and demand

Identify the various factors influencing truck parking demand.



Data Collection

Truck parking survey was circulated among cross boarder truck drivers, cargo owners (Shippers), transport associations and logistics service providers along the Ethio-Djibouti corridor users



Forecast future demand

Forecast current and future truck parking demand based on estimation, best practices, and report findings using a probabilistic approach.



Analysis

Analyze the data collected from the survey and evaluate truck parking demand throughout the study area, and document specific findings.



Opportunities & next steps

Document objective findings for further traffic diagnosis and identify needs, and opportunities for developing truck parking.

2.2 Key issues influencing demand of Parking Facility

Security and Safety Issues	▪ Driver security is under jeopardy. ▪ Vehicle and freight safety risks
Economy	▪ Freight crime ▪ Change or disturbance in supply chain
Government Regulations	▪ Cargo and Truck tracking ▪ New framework and regulations
Trends, Constraints or Problems	▪ City logistics ▪ Sector development
Freight Activity & Volume	▪ Freight transportation demand is growing ▪ Volume of freight trucks increment
Social and Business Trends	▪ Career opportunities ▪ Smart and sustainable logistics

2.3 Survey Development

The “Road Infrastructure and Related Services on the Ethio-Djibouti Corridor” survey (see appendix A) developed for this study was designed and organized targeting cross boarder truck drivers, cargo owners (Shippers), truck owners and logistics service providers. As part of the survey development process, a working meeting was held with board of directors of the association.

Three distinct questionnaires were developed in order to ensure that the study addressed the perspectives, issues, and difficulties of each stakeholder. The survey functioned not only to provide an understanding of truck drivers’ parking challenges, needs and preferences, but also to provide input into the poor road condition along the corridor as part of this study.

Due to the sensitive nature of the matter, drivers were unwilling to participate in filling out the survey or an interview. Nearly all of the drivers who were approached by surveyors declined to participate. In fact, when surveyors came close to them, it

agitated drivers since for the majority of them, it was a life-or-death situation. Some drivers and truck owners provided unsolicited verbal feedback to the surveyors.

2.3.1 Survey Distribution and Collection

To reach a broad potential survey pool, we disseminated the survey to a wide range of truck drivers through multiple channels. The Ethiopian Freight Forwarders and Shipping Agents Association and Ministry of Transport and Logistics Services Provision Council distributed a survey link to its members via email. Surveys were distributed to truck owners, truck drivers, freight forwarders, and cargo owners both directly, through site visits to dry port, truck association and government offices, and indirectly, through email and social media platforms to reach our members. Locations for the site visits were chosen in order to reach a nationally representative sample of truck owners and drivers

A total of 75 completed surveys were collected. During site visits, survey teams dispatched 300 questionnaires. In fact, the survey team estimates achieving response rates below 50 percent during nearly every site visit. Surveyors experienced overwhelmingly negative response rates after briefly explaining the purpose of the survey to drivers.

Chapter Three- Overview of the truck parking area

3.1 Overview of the parking area

The unavailability of parking for commercial heavy trucks is undocumented safety issue. Truck drivers are required to take breaks to avoid driving while fatigued, but lack of available parking often means drivers either cannot take those required breaks or must take them in unauthorized and unsafe locations.

Truck parking facilities will be most effective if they are located where drivers need and expect to find truck parking. However, communities also need to balance industrial and transportation land uses with residential, recreational, educational, medical, and other uses. Proactive planning and requirements for truck parking siting and design can reduce tension between the goals of supporting quality of life and industry.

Concerns Community opposition to truck parking facilities can stem from concerns about incompatibility, especially between freight and residential land uses. Communities throughout the country are experiencing land use conflicts as populations spread out, industrial developments become more intense, and distribution and fulfillment centers strive to locate near population centers. Recognizing the interdependency between economic vitality, quality of life, and goods movement can begin to alleviate opposition.

Appropriately-located truck parking facilities can serve community needs: they can improve roadway safety, increase the economic competitiveness of local freight intensive businesses, and contribute to local tax revenue. However, siting of truck parking facilities should be done in consideration of the potential externalities such as:

- Roadway impacts from increased truck traffic.
- Nighttime light pollution.
- Noise and air pollution from idling trucks.
- Trash and dumping at the site.
- Perceptions of security and crime issues.
- Equity impacts to neighborhoods adjacent to freight-intensive land uses.

3.2 Benefits of the parking area

Truck parking facilities provide a location where drivers can take short and long-term breaks or wait for scheduled arrival times at nearby freight facilities. Truck parking facilities are key to providing a place where drivers can take longer breaks including overnight rest for drivers who have reached the end of their driving day. Truck parking for long-term rest is perhaps the most important use of parking facilities. Truck parking also provides drivers with a location to take their legally-required break. All corridors that link Ethiopia to coastal countries do not have parking to support demand for overnight and long-term breaks.

The quantitative benefits and outcomes of increased truck parking access of truck parking projects are below:

- Safety for truck drivers.
- Safety for cargo (Contraband, Theft)
- Enhanced security for truck drivers.
- Reduced emissions of pollutants.
- Reduced trucking costs.
- Reduced congestion.
- Reduced infrastructure deterioration.
- Decreased undesignated parking.
- Avoided detours while searching for truck parking.
- Improved trucking efficiency and productivity.
- Improved trucking reliability.
- Job creation
- Local community integration
- Other benefits (Driver satisfaction and retention, Facilitate regulation compliance)

Decreasing Undesignated Parking: Truck parking availability will also reduce undesignated parking in a community. Truck drivers avoid detours to search for parking as an inconvenience and as an extra cost that cuts into wages and profitability. Drivers park in undesignated locations along their route to take rest, eat, use toilets, sleep and so on.

Truck parking in undesignated locations is undesirable and potentially dangerous, and therefore parking area reduces this activity can generate the following benefits:

- **Improved Safety:** Truck parking in locations that were not designed to accommodate them poses safety risks to the driver of the truck, the driver. Facilities that augment designated truck parking supply, thus reducing undesignated truck parking, can help to mitigate the following safety risks:
 - a. Undesignated parking on roadway poses a significant crash risk with through traffic because of the large speed differentials between a stationary parked truck and motorized travel speeds.
 - b. Roads are designed to give drivers lines of sight onto other vehicles so they can make safe decisions. However, trucks parked in undesignated locations can obstruct these lines of sight, reducing the visibility of drivers and making it harder for them to see other vehicles and anticipate potential conflicts.
- **Improved Security:** Undesignated parking places the driver and the cargo at a security risk. Designated truck parking facilities often have lighting, security cameras, fencing, controlled access, and other drivers, which make them significantly more secure than undesignated locations. The driver and cargo at undesignated locations have higher exposure to theft, damage, and driver assault. Facilities that reduce undesignated parking reduce these risks, benefiting the drivers, the trucking companies, and the owners of the cargo.

- **Other Considerations:**

- a. Undesignated parking at public lots or retail establishments takes up parking capacity that would otherwise be available for passenger vehicles.
- b. Undesignated parking can accelerate infrastructure deterioration, leading to the need for more frequent repaving or rehabilitation expenses. A heavy truck starting to move from a stopped position on the side of the road, while turning the front wheels onto the road, puts significantly greater pressure on the pavement than does a continuously moving vehicle. In addition, shoulders may not have the same specifications as the mainline roadway and could be more susceptible to deterioration by heavy vehicles. Trucks can also hit signs and guiderails while trying to park in an undesignated location.
- c. Undesignated parking is often associated with litter and waste because drivers do not have access to needed amenities.
- d. In cities, trucks making deliveries might stop for an extended time on the travel lane if curbside parking is not readily available, creating roadway congestion and slowdowns for other vehicles.

Avoided Detours: Truck parking facilities that increase the availability of spaces where they are needed will reduce the detours that truck drivers must make to find a safe and an open space or access needed amenities and services (such as restaurants). This translates into decreased truck travel on the roadway system, which can be calculated in terms of vehicle traveled in kilometer and vehicle hours traveled. Decreased truck travel generates the following benefits:

- **Decreased Trucking Costs:** Reducing unnecessary truck travel will decrease the costs of trucking associated with driver wages, fuel, vehicle costs, etc. In a competitive environment, these savings tend to be passed onto shippers, and ultimately to customers in the form of lower-cost products.
- **Reduced Driver Fatigue Safety Risks:** Drivers are more likely to be fatigued when searching for parking and drivers might even be distracted if they have difficulty finding a place to rest. Facilities that make it easier for truck drivers to find a spot are likely to reduce these safety risks.

Improved Trucking Reliability: There is no doubt that reliability of shipments is an important variable for trucking companies and shippers. Modern supply chains are highly optimized and depend on freight arriving at its destination on time. Projects that increase the availability of truck parking can improve the reliability of transport services along a corridor, especially in dealing with unforeseen events, such as flat tire or vehicle breakdowns. More parking options could allow the truck driver to deal with these circumstances and return to the road as quickly as possible.

Other Benefits: Truck parking projects that improve the availability of parking spaces can also have the following benefits:

- **Driver satisfaction and retention:** Having readily available truck parking decreases the stress of drivers, particularly on safety and security, which could improve driver

retention. The amenities available at truck stops and rest areas can also make life on the road easier. All this could help ameliorate the driver shortage and discipline.

- Increased productivity: The amenities and services available at truck stops allow truck drivers to be productive during non-driving time, and even to get better rest relative to parking at a location without these amenities. The ability to refuel or perform maintenance on the trucks allows drivers to meet their appointments.
- Better rested drivers: The ability to shower, eat well, and be in a safe environment also allows drivers to rest more fully. Better-rested drivers are likely to be more attentive and drive more safely.

Truck parking facilities are key to providing a place where drivers can take longer breaks including overnight rest for drivers who have reached the end of their driving day.

3.3 Demand assessment

a. Introduction

Survey data were analysed to examine stakeholder opinions within two topic areas:

- Parking unavailability and its impact.
- Parking patterns and preferences.

This section of the report presents the results of those analyses. The section begins with a discussion of policy review and the respondents' demographic characteristics.

b. Policy Review

A review of policies related to truck parking was performed for this study. The following sections summarize truck parking related policies and regulations.

i. Driving Time Legislation

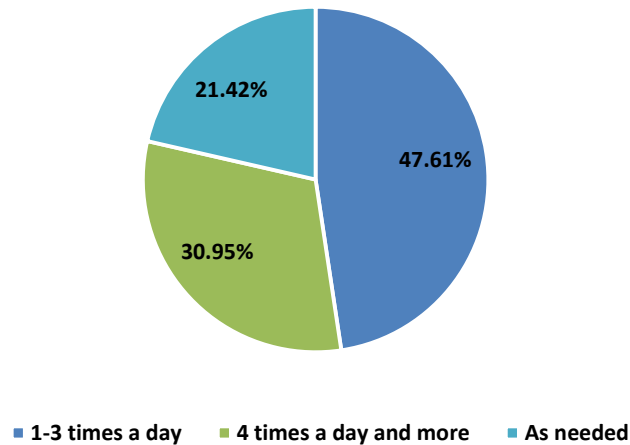
Many developed countries have legislation related to hours of work and rest periods in road transportations. However, Ethiopia doesn't have such legislation.

Although only 9 countries have ratified the ILO Hours of Work and Rest Periods (Road Transport) Convention, 1979 (No. 153), it can be referred to in the context of establishing procurement requirements if no equivalent national legislation exists. The following legal requirements are most relevant in relation to secure truck parking spaces the following rules are most critical (paragraph or article number in brackets):

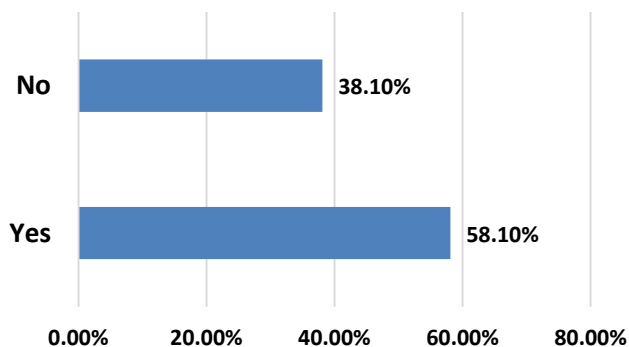
- No driver shall be allowed to drive continuously for more than four hours without a break;
- The maximum total driving time, including overtime, shall exceed neither nine hours per day or 48 hours per week;
- Every wage-earning driver shall be entitled to a break after a continuous period of five hours of work, and;

- The daily rest of drivers shall be at least ten consecutive hours during any 24-hour period starting from the beginning of the working day

The global practice on working time regulations place more pressure on drivers to find parking spaces. Truck drivers were asked how many times a day they park their trucks (at least for 2 hours) and the following was their response:



For the survey question “According to the commercial driver hours of service regulation, a truck driver should drive for 4 hours and rest for 2 hours. Are you familiar with this rule?”, 58.1% of the drivers that responded to the survey answered yes and 38.1 % answered no. Even though the majority of drivers are aware of the laws and their rights, they continue to drive nonstop for 8–10 hours because of the demands or instructions they receive from their customers or transporters.



ii. Agreement on the Utilization of the Port of Djibouti and Service to Cargo in Transit

On this agreement Article 23 states as follow “Pursuant of the Agreed Minutes of November 4, 1999 signed between the Contracting Parties, the Government of the Republic of Djibouti shall avail safe and well protected parking area free of charge

sufficient to accommodate at least 200 trucks at one moment within the proximity of the port furnished with power, water and other facilities.”

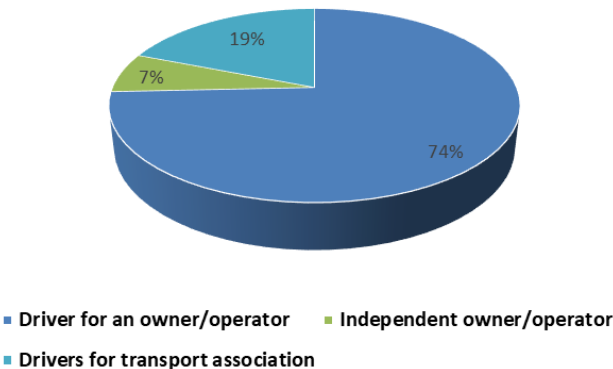
PK12 (Point Kilometre 12) is a holding area for trucks about 12 km inland from the Djibouti ports on the road to Galafi. PK12 has offices used by agents and representatives of trucking associations and is a very large unpaved truck yard. It was provided by the Djiboutian authorities to avoid congestion around the port areas and to avoid having trucks parked at the side of the road while waiting for their loads. Trucks come in from Ethiopia and wait at PK12 until they are assigned loads or until they are given gate passes which allow them to proceed to the port to collect their loads; Once the goods are loaded, the trucks heading to Ethiopia are waiting in the same area for the “Print-out” of the Ethiopian customs.

As far as our research is concerned there are no proper facilities to accommodate trucks. Due to a lack of rest areas and exposure to extreme heat, drivers are being victimized.

Even though the majority of drivers are aware of the laws and their rights, they continue to drive nonstop for 8–10 hours because of the demands or instructions they receive from their customers or transporters

c. Demographics

98 percent of the respondents reported that they are typically long-haul drivers. The figure below displays respondents’ category as drivers. 74 percent of drivers identified themselves as driver for an owner/operator, 7 percent identify as independent owners/operators and 19 percent identify as drivers for transport associations.



When asked how long they have worked in the Ethio-Djibouti corridor, 54 percent of the drivers responded that they have experience of between one and ten years, while 46 percent have experience of more than ten years.

d. Parking On Undesignated Areas

Undesignated truck parking refers to trucks parked at locations, such as a highway shoulder or on/off ramp that are not designed or intended for such use.

Truck parking is of critical importance for the safe operation of Ethiopia's freight infrastructure, supply chains, and the economy. Truck parking facilities with available truck parking are essential to providing a safe place for truck drivers to get the rest they need and stage their vehicles for scheduled deliveries or pickups. Due to a lack of available parking when needed, many truck drivers resort to parking in undesignated truck parking locations along roadways, shoulders, and ramps.

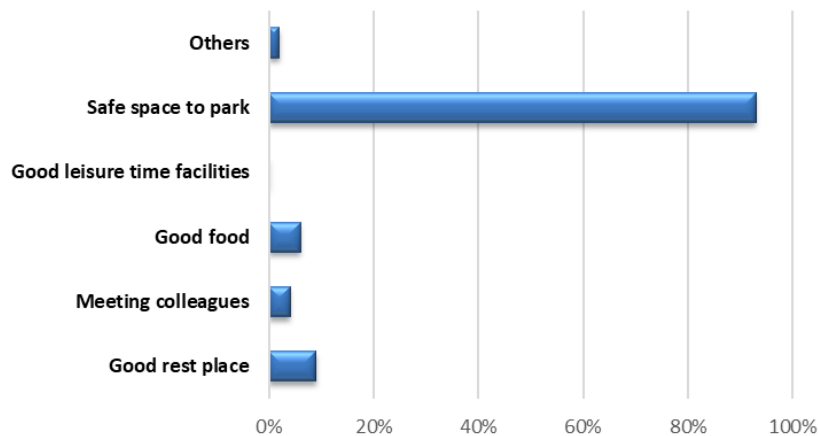
Undesignated truck parking endangers truck drivers and other roadway users, damages infrastructure in areas not intended for truck weights and volumes, and impacts Ethiopia's economic competitiveness. Trucks parked on roadway shoulders will be involved in fatal crashes as well as numerous rear-end collisions demonstrating the potential risks posed by undesignated truck parking.

The following section provides an overview of the specific locations where undesignated truck parking often occurs:

- ***Corridor and on/Off roadway:*** Occurs when trucks park along roadway. Undesignated parking along the road, in particular, poses safety hazards for drivers and roadway users. When trucks park on shoulders, they become large, fixed objects that could be hit and block sight lines for other roadway users. Additionally, trucks re-entering the traffic stream from the shoulder have a short distance to reach roadway speeds, resulting in a high-speed differential relative to the traffic stream, which poses a safety risk.
- ***Last-Mile:*** Occurs when trucks park along local roads, in both industrial and non-industrial areas, at and near last-mile facilities. Often, undesignated parking on last-mile roads occurs as trucks wait for pick-up or drop-off. This leads to safety and quality of life concerns for areas near last-mile facilities, as undesignated truck parking on local roads can impede traffic and block roadways.

e. Parking Patterns and Preferences

To help clarify drivers' parking preferences, the survey asked drivers if they had a preferred location or city to park their trucks, and 69 percent answered "yes". For the survey question, "Why do you choose those preferred locations to park?" most drivers reportedly have a preferred location due to security and safety concerns.



Survey Question: "In the Ethio-Djibouti corridor, please rate the level of the problem caused by the following bottlenecks on the transportation of goods by vehicle." shows that at least half of the respondents considered the corridor's extensive poor road conditions and lack of adequate truck parking facilities to be a very serious concern.

Question 1

Loading process in Djibouti

Question 2

Domestic cargo unloading process

Question 3

The problem of lack of vehicle parking and facilities in the Ethio-Djibouti corridor

Question 4

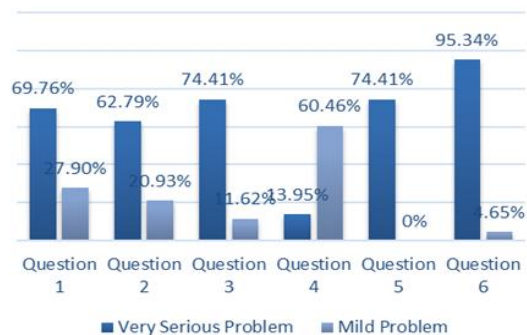
Vehicle aging problem

Question 5

The problem of road breakdown

Question 6

The problem of road safety



The paramount concern of almost all drivers is road safety.

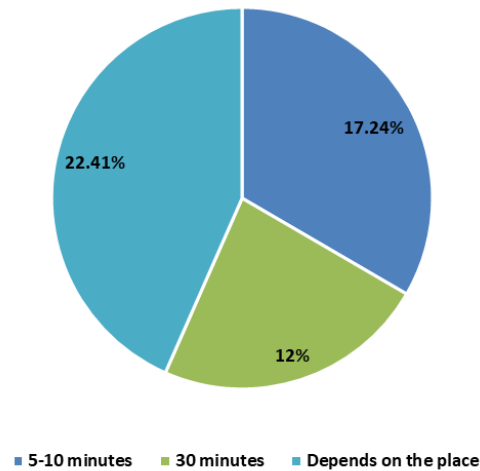
When drivers park their trucks, the first thing they consider is the safety of their trucks and the freight they carry. When it comes to safety, drivers appear to value security presence. They also consider to satisfy only their basic needs. Drivers prefer parking facilities that provide food, fuel, restrooms, and showers.

f. Time and Cost

Truck drivers encounter two major challenges associated with finding truck parking:

- **Spending time searching for parking:** 22.41 percent of drivers spent 5 to 10 minutes, 12 percent spent 30 minutes searching for parking area, whilst 17.24% responded that the amount of time wasted depends on the region, they are in. On the other side, 72 percent of truck owners and logistics service providers said it affects their business when the freight does not arrive on time, while the remaining 22 percent said it results in wasteful expenses.
- **Wasting fuel while searching for parking:** 37 percent of drivers waste 1 to 10 liters of fuel, and 2 percent said that the amount of fuel wasted differs by truck type and geographic location.

For the survey question “how many hours a day do you spend looking for a place to park?” truck drivers and responded as shown on the graph below:



When drivers, truck owners and logistics service providers were asked the amount of fuel wasted while looking for a truck parking area their answers are as follows:

Truck drivers	
Amount	Percentage
1-10 liters	20%
Depends on the vehicle type	2%
No fuel wasted	4%

Truck owners and logistics service providers	
Amount	Percentage
3-5 liters	12.5 %
10-20 liters	18.7 %
20-50 liters	62.5%

Individual interviews were conducted with respondents and their responses were that if their truck broke down in the middle of the road and parked until maintained, locals

of some area will make drivers pay unreasonable fees starting from ETB 5000-15000. Drivers become frustrated and incur unnecessary expenses as a result of this.

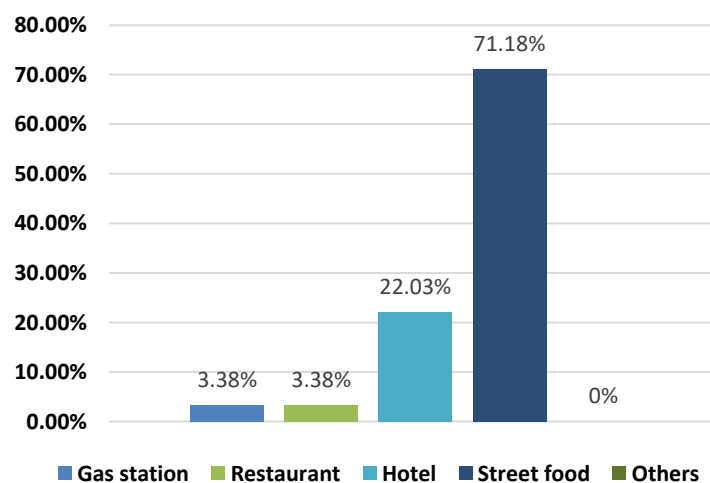
g. Services and Facilities

Drivers' responses to the survey demonstrated definite preferences and priorities when it comes to choosing where they will park. When drivers park their trucks, most expect to satisfy only their basic needs. Drivers prefer parking facilities that provide food, fuel, restrooms, phones, and showers. They also consider safety and convenience important when they park their trucks. Drivers do not consider entertainment and other "luxuries" to be necessary characteristics of a parking facility.

Why a driver's park for purposes other than resting	Gas station	Hotel/Pension	In the truck	On the street	Other
To bath	0%	18%	0%	60%	2%
To use restrooms	2%	64%	2%	33%	21%
To dine	3%	25%	0%	71%	0%

Drivers generally prefer parking at private truck stops for long term breaks. Considerations of available amenities contribute to truck driver decisions of where to park. Restrooms, fuel, food, security/lighting, and proximity to route are amenities most cited by drivers when considering where to park.

For the survey question "Where do you mostly eat when you are on the road?", 71.18% of the drivers chose street foods as their preference.



Restrooms, fuel, food, security/lighting, and proximity to route are amenities most cited by drivers when considering where to park.

h. Safety and Security

The prevention of threats to the security of drivers and cargo is the fundamental reason to provide safe and secure parking areas. The shortage of available parking for commercial heavy vehicles is not well-documented safety issue. Truck drivers require to take breaks to avoid driving while fatigued, but lack of available parking often means drivers either cannot take those required breaks or must take them in unauthorized and unsafe locations.

Drivers responded that they park in unusual places such road sideways, open fields, and parking lots not intended for truck parking when asked where they like to leave their truck overnight. Additionally, when asked where they spend the night in the poll, drivers provided the following information:

Place	Hotel/Guest house	Inside the truck	Others
Percentage	28.46%	69%	2.38%

The reason most truck drivers spend the night in the truck is to guard the cargo and the truck itself. They have also mentioned that they also deal with a lot of threats that may vary from opportunist theft to highly organized criminal gangs.

Drivers were asked who decides where they will park. Drivers were able to mark response choices. Almost all drivers responded similarly to these parking decision questions. Overall, 94.4 percent of respondents indicated that they decide where they will park; while only 3.7 percent of respondents marked that someone from their companies decides where they will park. On the other hand, 62.5% of truck owners are aware of where your truck is parked unlike the rest 25%. For reasons of safety and security, drivers decide their preferred parking location.

4. Conclusion and Recommendation

a. Conclusion

- The respondent pool included all types of drivers from independent owner/operators who own just one truck to drivers employed by large trucking carriers. Drivers responded negatively to the study, oftentimes mistreating the survey team for making an effort to gather driver opinions. Response rates, particularly during site visits, were unusually low for survey research.
- The survey responses reflected drivers' frustration and the assumption that their contribution to the supply chain was being undermined, as well as the government's and stakeholders' failure to address the issue of the lack of designated parking lots.
- Cross border drivers are facing a variety of safety issues due to the lack of designated truck parking facilities. As the demand for freight services increases, drivers are often forced to park in unsafe locations or be on the road for extended periods of time due to the unavailability of parking spots. This lack of parking puts drivers at risk of not being able to take the necessary breaks and rest, leading to fatigue and an increased risk of accidents.
- The needs and preferences for parking expressed by drivers in this study are neither unexpected nor complex. Truck parking facilities are required, and drivers prefer to find them in pristine, secure parking lots. When truckers park, they need access to basic necessities. They want to dine, take a shower, and rest for a couple of hours.
- Despite the scale of road freight activity in our country and its importance to the economy, there are few official statistics available to verify, in full, the size and nature of criminal threat against drivers, vehicles and goods. This has occurred not only because the relevant data is missing; but also, because information about truck crime is not seen as a problem by stakeholders.
- Overall, the lack of designated truck parking facilities is a major safety issue for cross border drivers, and it is one that should not be overlooked. Without the necessary parking spots, drivers will continue to face fatigue and other safety issues.

b. Recommendation

- It is the clear belief of the study constructing a truck parking area is a necessity and thereby increasing the wellbeing of drivers, security goods and trucks.
- An observed characteristic of an effective strategy is data-driven decision-making. The study's clear advice is that it's crucial to conduct an extensive traffic diagnostic throughout the route.
- Another attribute is having a robust stakeholders engagement program which is required for identifying and developing truck parking locations.
- Controlling truck access to the truck parking area is a crucial aspect of planning and designing surroundings that are safe for truck drivers to rest in. The safety, security, and utility of truck parking areas are maximized if access is limited to truckers who need them.
- Stakeholders work closely to develop parking facilities with an integrated system.