

Freight Perspective on Texas's Transportation System

**CENTER FOR TRANSPORTATION
RESEARCH**

The University of Texas at Austin

February 2010

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Introduction

As part of the Texas Department of Transportation (TxDOT) research study 0-6297 entitled “Freight Planning Factors Impacting Texas Commodity Flows,” Texas was divided into eight economic regions (see Figure 1). In an effort to increase the understanding of (a) which business factors impact transportation decisions, (b) the decision process that underlies choices about modes and routes, and (c) how Texas’s transportation system serves businesses in the state, the Center for Transportation Research (CTR) at The University of Texas at Austin hosted six freight workshops in:

- San Angelo (August 4, 2009)
- Corpus Christi (September 24, 2009)
- Houston (October 20, 2009)
- El Paso (November 12, 2009)
- Lubbock (December 3, 2009)
- Tyler (October 27, 2009)

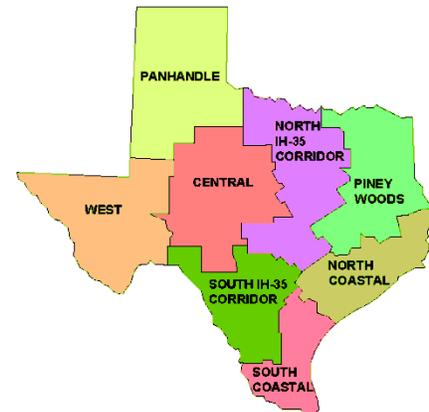


Figure 1: Economic Regions in Texas

The study team was particularly interested in learning whether Texas's transportation system is adequate in serving business needs and about any improvements that are deemed necessary to serve Texas businesses better.

Invitations to participate in the workshops were presented to a list of shippers compiled through interviews with Metropolitan Planning Organizations (MPOs), TxDOT, Ports-to-Plains Trade Corridor Coalition, Houston Rail Freight District, Chambers of Commerce, and Economic Development Agencies. In addition, shippers that employed more than 50 people were identified from the Texas Workforce Commission’s SOCRATES database. Invitations were extended by telephone, e-mail, and faxes. In most cases, more than 200 telephone calls resulted in less than 10 participants per workshop.

During the workshop, the Iclicker device was used to facilitate discussion and to record the responses of participants anonymously. The Iclicker is a type of Classroom Performance System (CPS) technology that records the responses of participants and displays the summarized responses in real-time. In other words, participants are presented with a question or comment and asked to respond (i.e., vote) by selecting an option on a scale of 1 (i.e., A) to 5 (i.e., E). The responses are then subsequently displayed and discussions are facilitated by the research team. This approach proved to be effective in soliciting discussions and gaining a better understanding of the business, mode choice, and transportation system factors that impact Texas’s freight community. In some instances, participants were asked to re-vote on a specific question or comment after discussing the first round of results. However, in most cases, participants were only requested to respond once. This document summarizes the outcome of these facilitated workshop discussions

**Central Texas Region
San Angelo**

**San Angelo TxDOT District
Office**

**4502 Knickerbocker Road
San Angelo, TX 76904**

Tuesday, August 4, 2009

Introduction: Central Texas Region

The Central Texas Region workshop began with a presentation on the findings of the 2030 Committee to illustrate the future needs of Texas's transportation system. Subsequently a number of mobility enhancement scenarios and rail enhancements in the San Angelo district were presented. The presentations were followed by a demonstration on the usage of the Iclicker. Participants were then presented with a number of questions/ statements in two categories: the Central Texas Region's transportation system and business/mode choice factors impacting freight transportation in the Central Texas Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the Central Texas Region workshop:

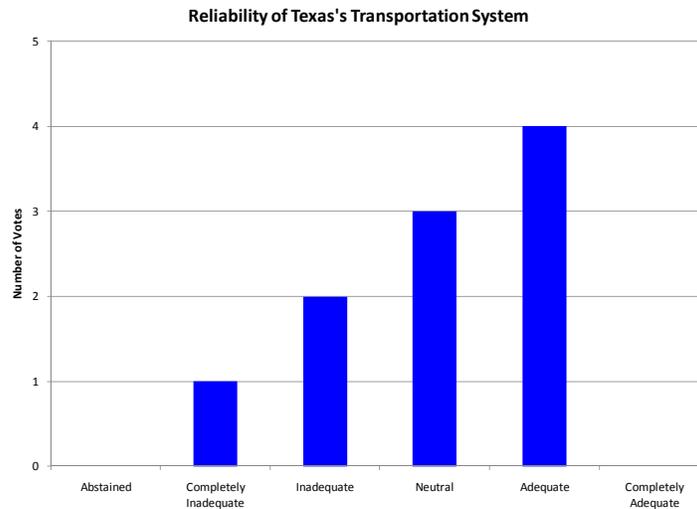
- Alon USA (3)
- HEB Grocery Company (1)
- TxDOT (2)
- Hirschfeld (2)
- San Angelo MPO (2)
- Roddie Trucking (1)
- TexasTank Car (1)

Workshop Discussion

1. Texas's Transportation System

1.1 Reliability of Texas's Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Reliability**?

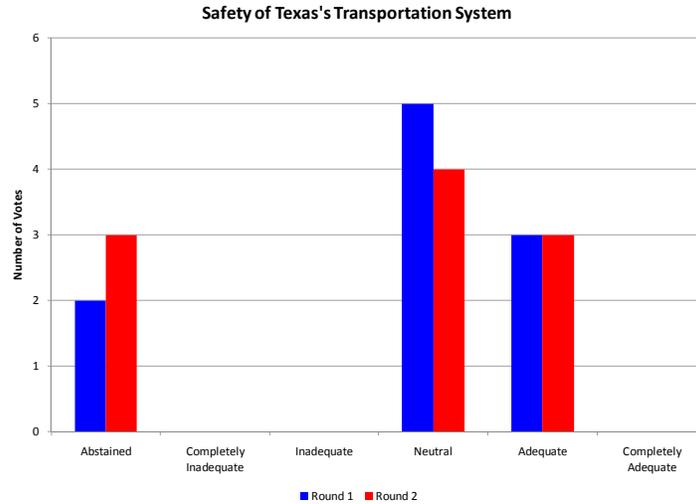


Comments

In general, no reliability problems were raised. However, there was consensus among the participants that problems persisted with the railroad mode. One of the participants argued that there is not a reliable railroad system in San Angelo, while others argued a need to increase the capacity of the railroad in the area. There was also support for investment in the railroad tracks. The South Orient track condition is classified as “FRA excepted track,” which means that a freight railroad cannot operate at speeds in excess of 10 miles per hour or operate a train that contains more than five hazmat cars. The track condition was thus considered problematic because, for example, 30 hazmat cars cannot be readily moved.

1.2 Safety of Texas's Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Safety**?



Comments

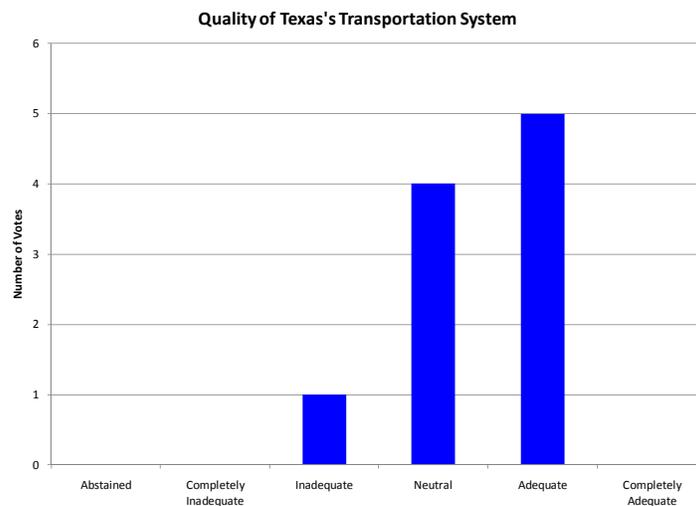
Truckers prefer to drive on divided highways and interstates, because these roads are considered safer. However, one participant commented that TxDOT’s permitting department tends to route trucks on Farm-to-Markets roads and county roads—i.e., two-lane roads that present both a safety hazard and a more costly alternative.

Safety concerns were expressed in terms of operating on IH 10 (i.e., interaction with passenger traffic presents a safety issue), SH 71 (i.e., a two-lane road), and US 183.

Revote after discussion: Results were similar.

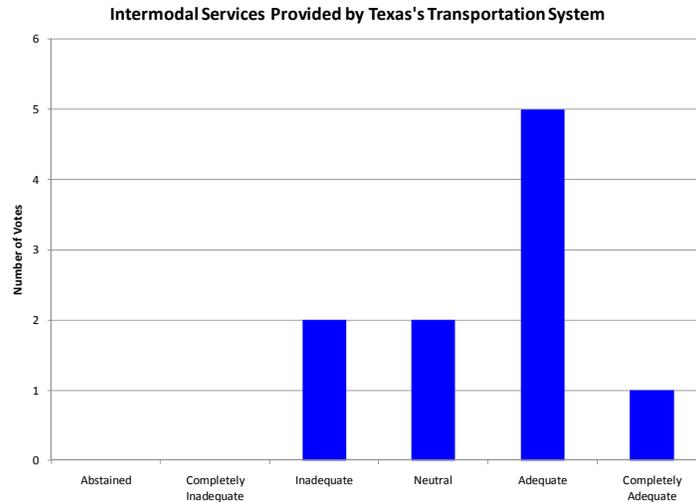
1.3 Quality of Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Quality**?



1.4 Intermodal Service Provided by Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Intermodal Services** (air, sea, rail, and/or road)?

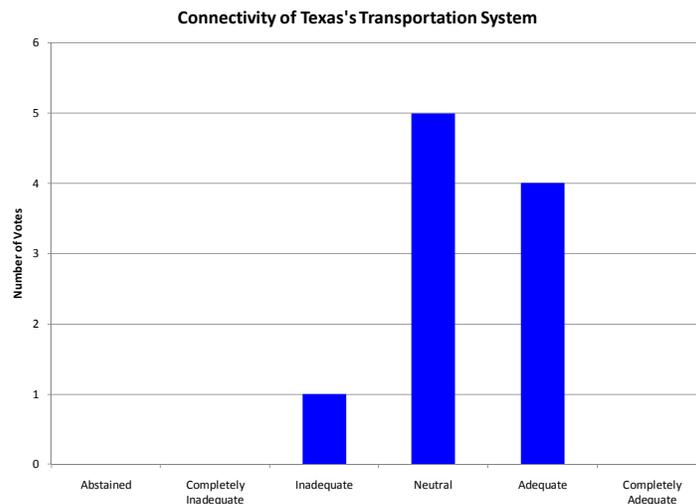


Comments

Inbound intermodal shipments seem to be efficient, but outbound shipments tend to not be time efficient. For example, outbound shipments to New York City and Seattle are problematic. During peak periods, only five cars of fuel can be loaded, but demurrage payments accrue after two days. There is thus a need for more and better intermodal service.

1.5 Connectivity of Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Connectivity to state, national, and global markets?**



Comments

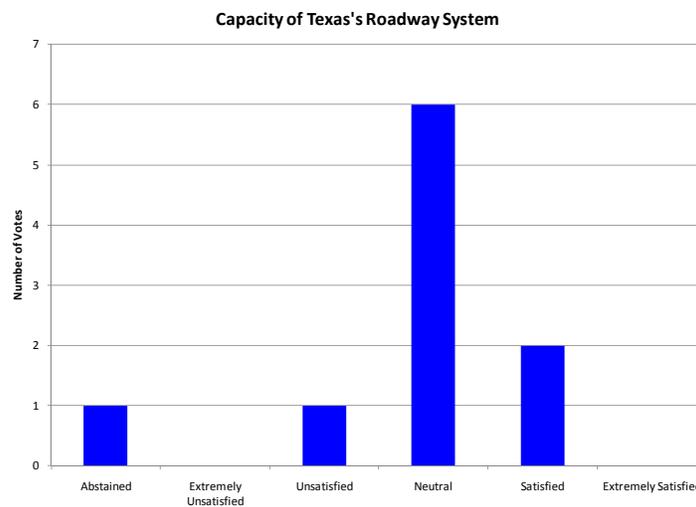
Additional road capacity is required to link the region to Colorado.

The region is also not well connected to the rest of the state. A number of roads need improvement due to, for example, sharp corners that can be problematic.

When Houston, Fort Worth, and El Paso have rail congestion problems, then the San Angelo region is impacted. Rail cars are often not available and can take a long time (i.e., two weeks at times) to arrive in San Angelo.

1.6 Capacity of Texas’s Roadway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **Capacity of Texas roads and highways?**

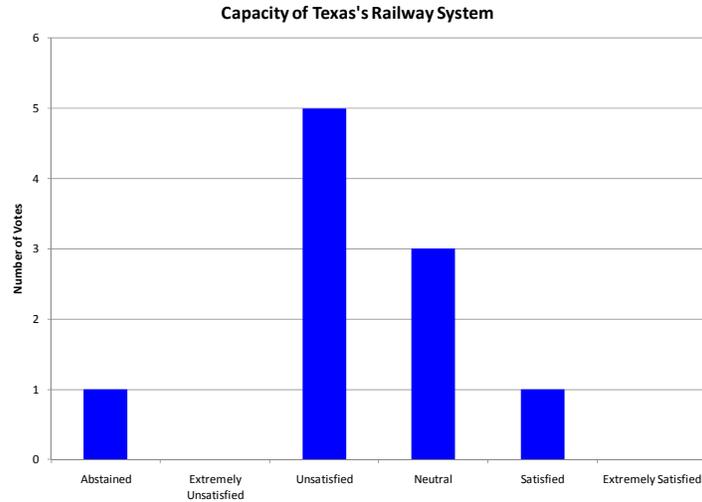


Comments

The majority of the participants thought the highway capacity was sufficient, expressing that capacity issues surround the Dallas area.

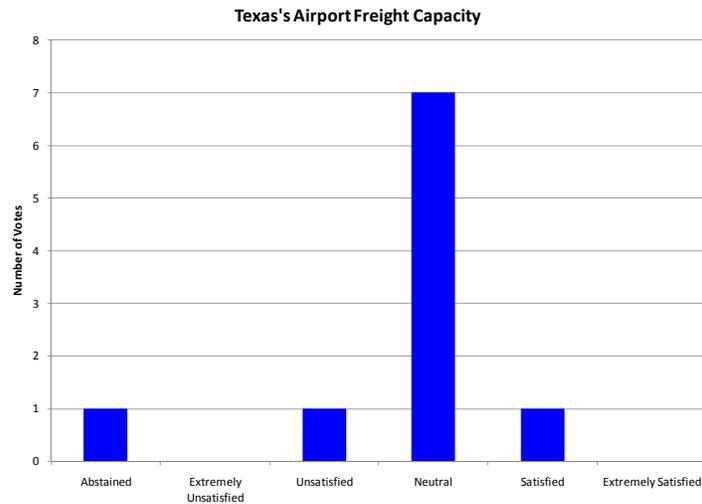
1.7 Capacity of Texas’s Railway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **Rail Capacity?**



1.8 Texas's Airport Freight Capacity

How satisfied you are with the freight transportation infrastructure in Texas in terms of **Airport Freight Capacity**?

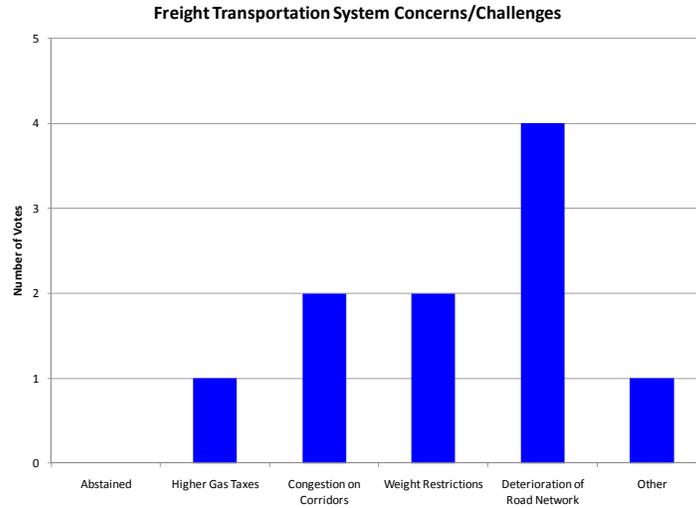


Comments

No air-cargo imports enter the region. Most goods are moved by truck.

1.9 Freight Transportation System Concerns/Challenges

What are your major **concerns/challenges** concerning Texas's freight transportation system (e.g., facility/infrastructure, operational, and policy) as it pertain to your business?

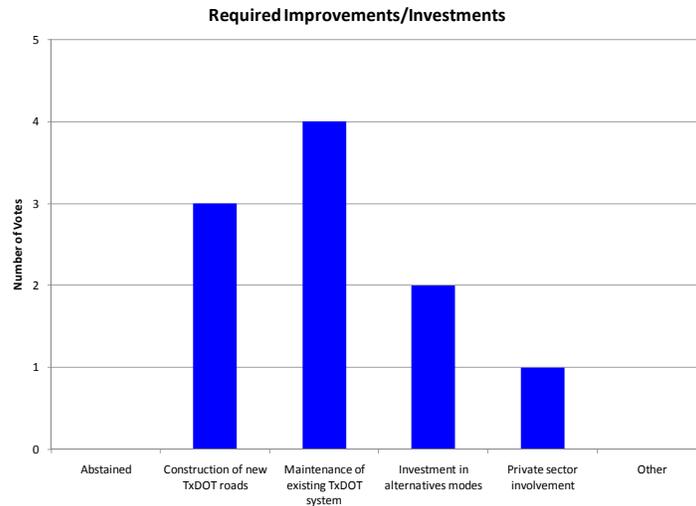


Comments

A combination of all the concerns/challenges is starting to emerge, so it is difficult to choose one concern/challenge.

1.10 Required Improvements/Investments

What **improvements/investments** are required to remedy these concerns/challenges?

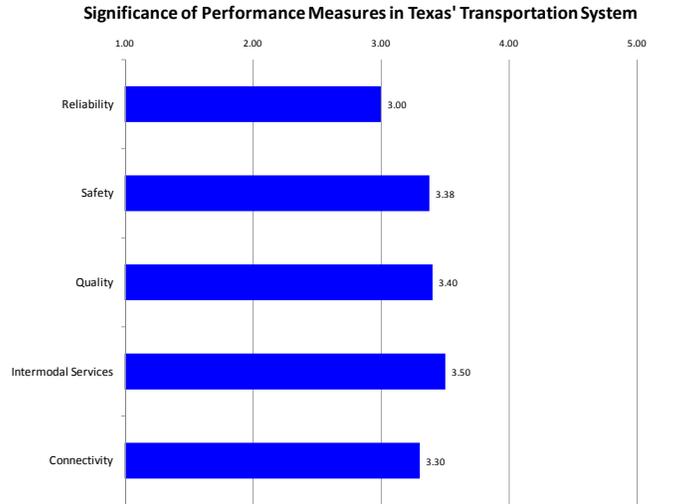


Comments

The rehabilitation of major roads is very important

1.11 Concluding Remarks

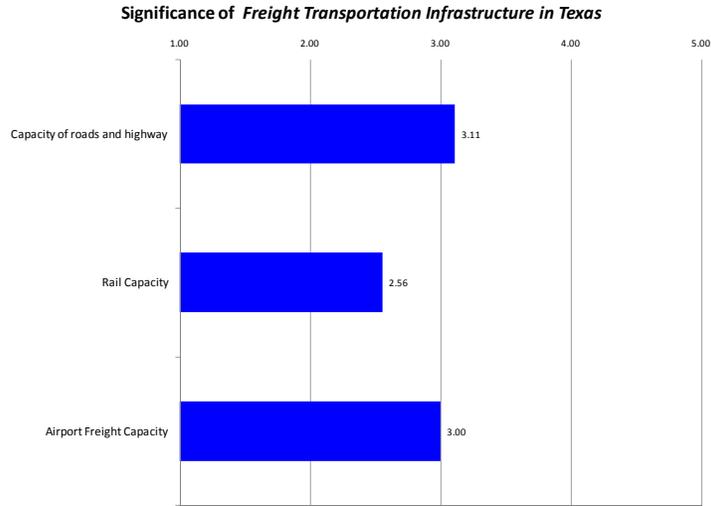
The following figure summarizes the participants’ responses regarding the adequacy of Texas’s transportation system in meeting the business needs of the workshop participants.



Note: 1 – Completely Inadequate; 2 – Inadequate; 3 – Neutral; 4 – Adequate; 5 – Extremely Adequate

Although participants ranked the adequacy of *Intermodal Services* to be neutral to adequate (i.e., 3.5) in meeting their business needs, it was pointed out in the comment section that more intermodal services (e.g., intermodal facilities) were needed. Improvements to the current infrastructure are also needed to use the currently available intermodal services. Similarly, participants ranked quality (3.4), safety (3.38), and connectivity (3.3) of Texas’s transportation system between neutral and adequate. Reliability (3.0) on the transportation system received the lowest rank in terms of meeting the participants’ business needs. A number of comments were made regarding congestion on highways in the area east of San Angelo towards Dallas and rail congestion in the Houston, Fort Worth, and El Paso areas impacting the Central Texas Region.

The following figure illustrates participant’s level of satisfaction with the capacity of Texas’s transportation system. As can be seen, the capacity of roads and highways (3.1) and ports (3.0) were ranked similarly. Rail capacity (2.56) received a less favorable score with a number of participants arguing for additional investments in rail. However, it was felt that the capacity of the Texas transportation system, in general, needs to be improved. As one of the participants pointed out, the capacity “*could be worse, but could be much better.*”

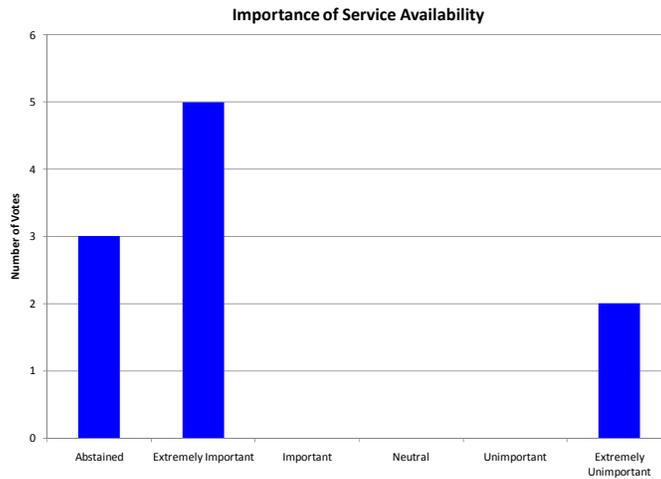


Note: 1 – Extremely Unsatisfied; 2 – Unsatisfied; 3 – Neutral; 4 – Satisfied; 5 – Extremely Satisfied

2. Importance of Trucking Service Attributes

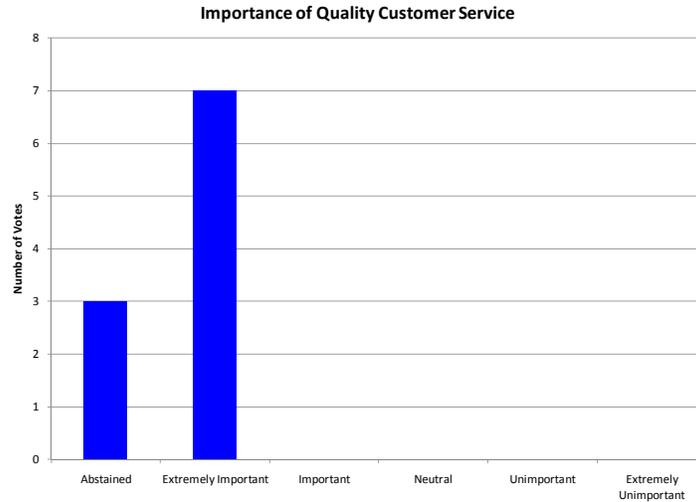
2.1 Service Availability

How important is **Service Availability** for your Company or for your Clients?



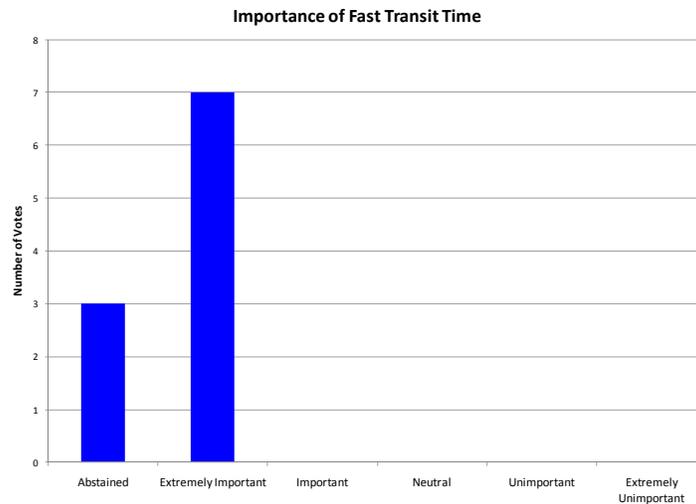
2.2 Quality of Customer Service

How important is **Quality of Customer Service** for your Company or for your Clients?



2.3 Fast Transit Time

How important is **Fast Transit Time** for your Company or for your Clients?

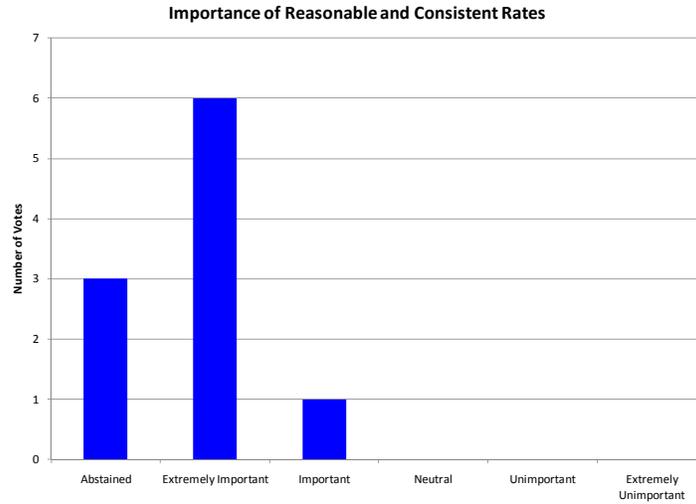


Comments

Customers don't have the ability to use rail.

2.4 Reasonable and Consistent Rates

How important are **Reasonable and Consistent Rates** for your Company or for your Clients?

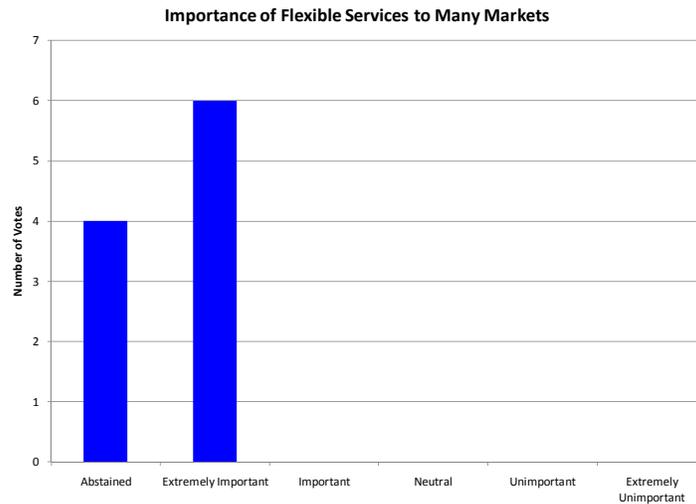


Comments

There is a definite need for consistency in rates.

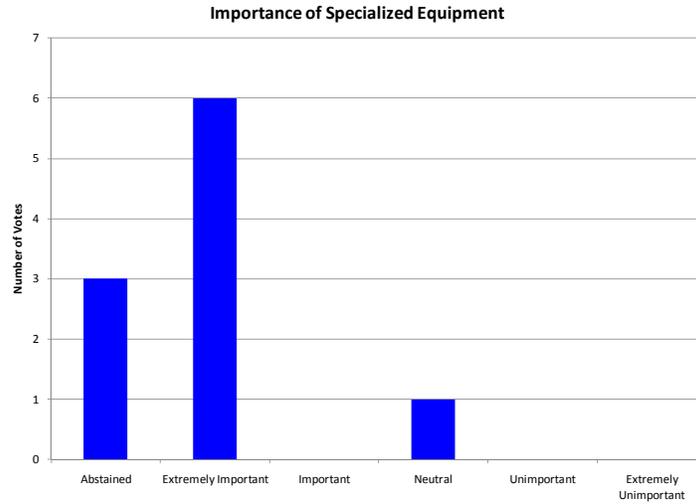
2.5 Flexible Services to Many Markets

How important are **Flexible services to many markets** for your Company or for your Clients?



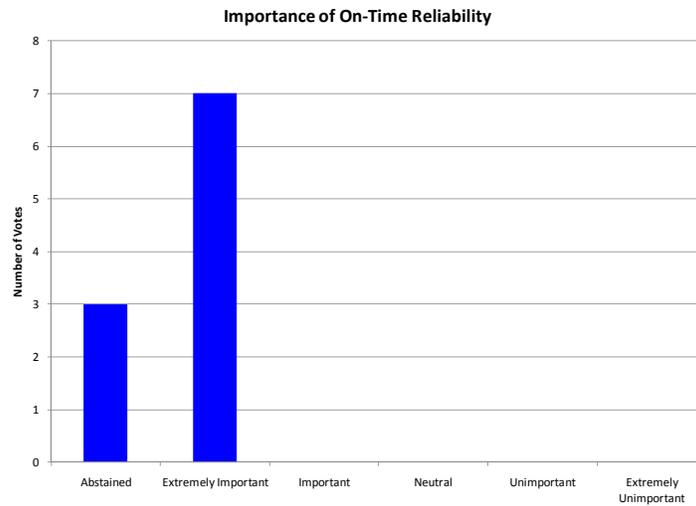
2.6 Specialized Equipment

How important is **Specialized Equipment** for your Company or for your Clients?



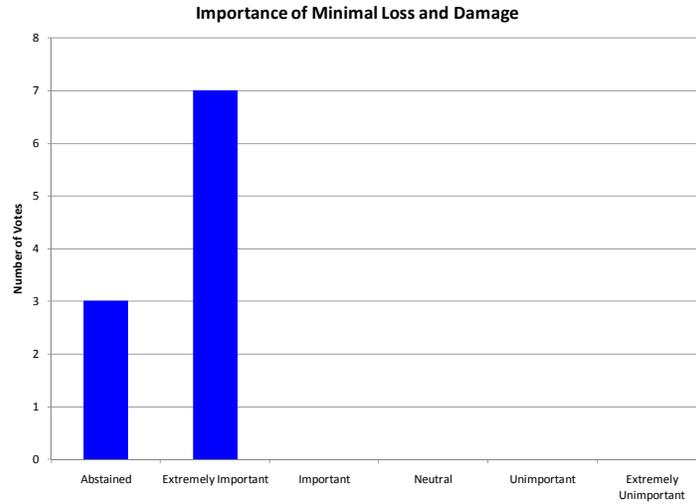
2.7 On-Time Reliability

How important is **On-Time Reliability** for your Company or for your Clients?



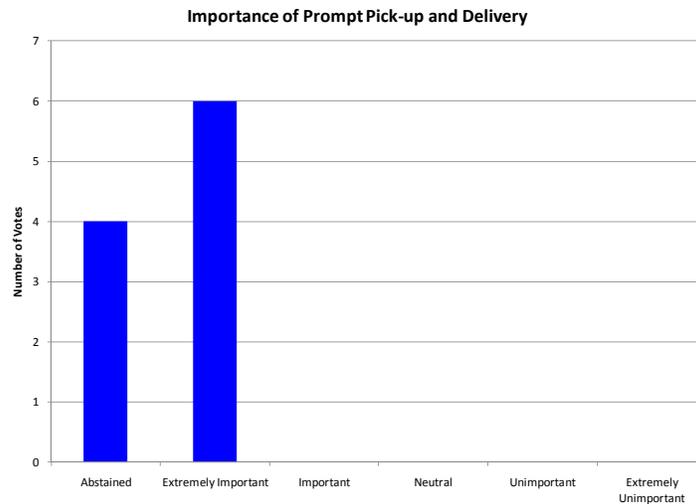
2.8 Minimal Loss and Damage

How important are **Minimal Loss and Damage** for your Company or for your Clients?



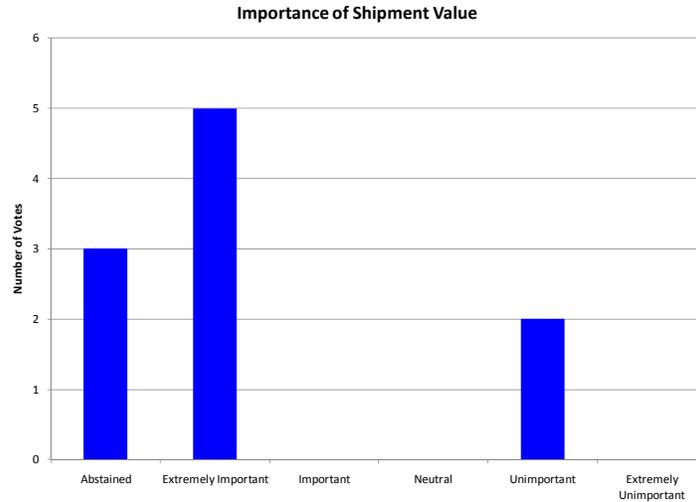
2.9 Prompt Pick-up and Delivery

How important is **Prompt Pick-up and Delivery** for your Company or for your Clients?



2.10 Shipment Value

How important is **Shipment Value** for your Company or for your Clients in determining a shipment strategy?

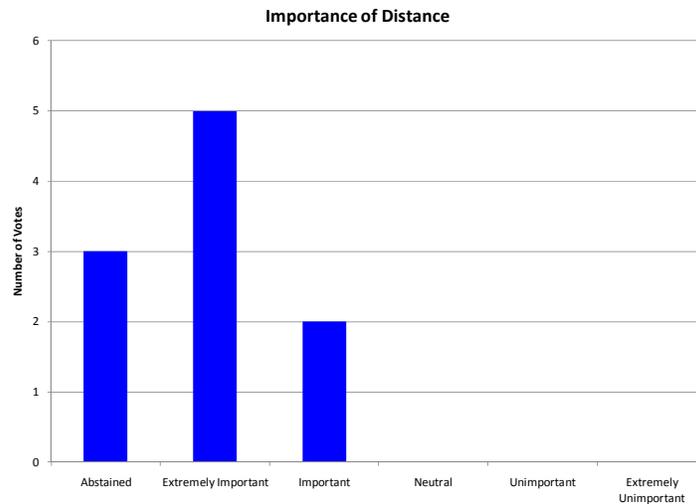


Comments

The shipment value is more of an insurance issue than a decision factor in mode choice. However, in some cases the characteristics of the commodity are the main determinant of mode choice.

2.11 Distance

How important is **Distance** for your market area in determining a shipping strategy?

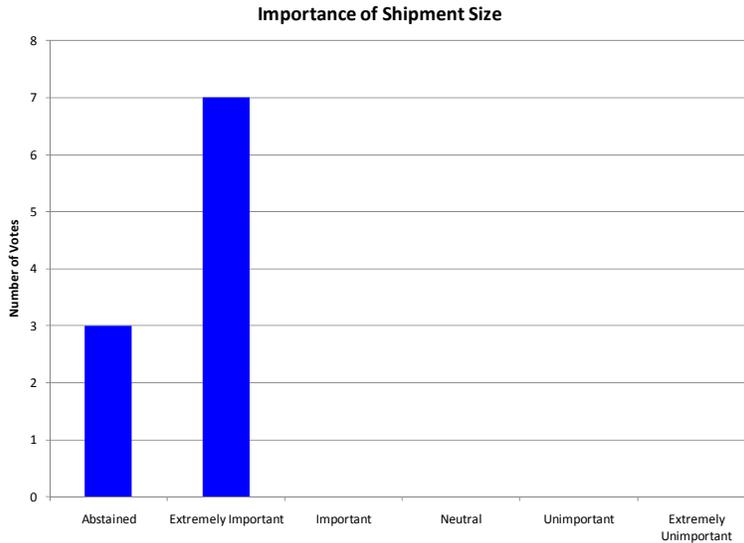


Comments

Distance is not a problem, but the shippers consider a labor force to be more important. It seems that Class I railroads prefer to move unit train loads for longer distances.

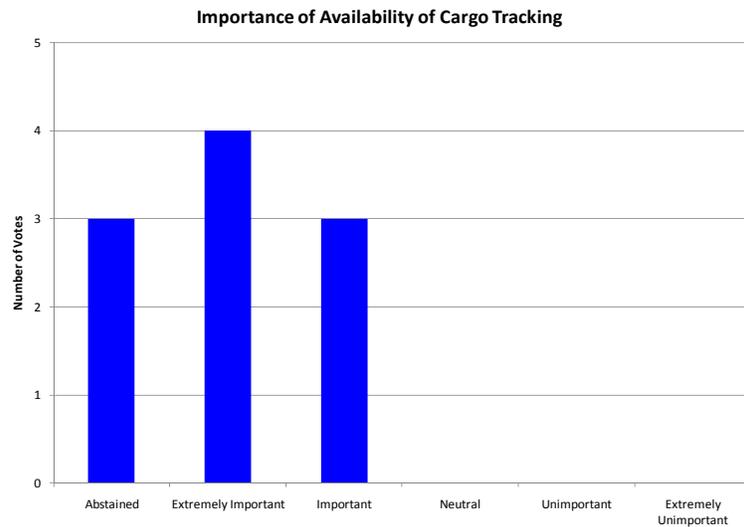
2.12 Shipment Size

How important is **Shipment Size** for your Company or for your Clients?



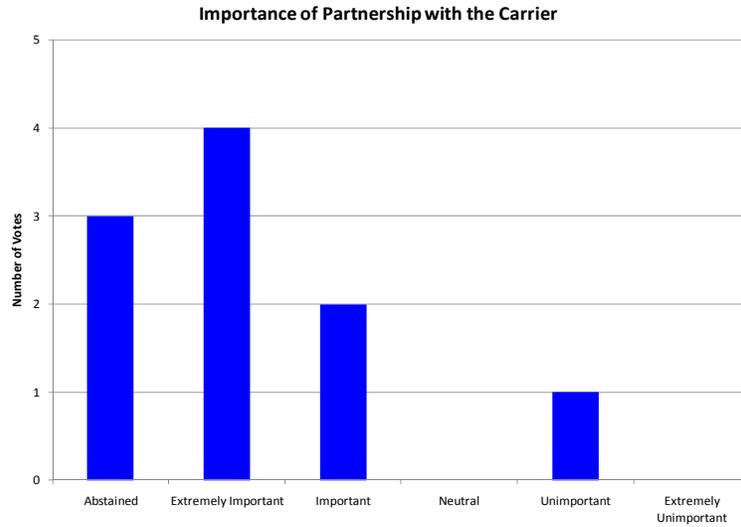
2.13 Availability of Cargo Tracking

How important is **Availability of Cargo Tracking** for your Company or for your Clients?



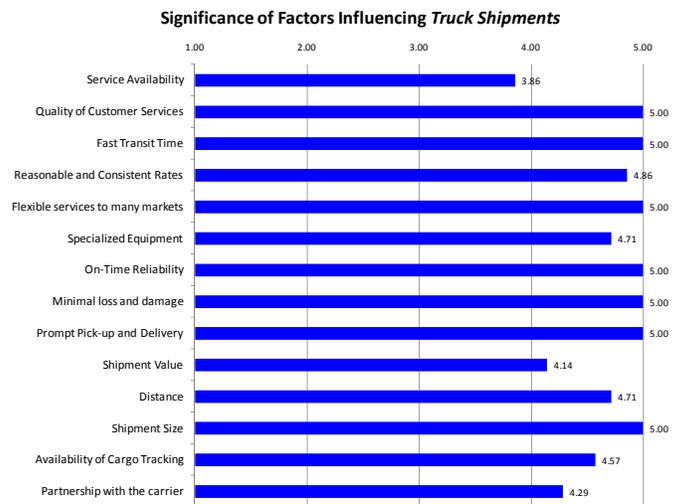
2.14 Partnership with the Carrier

How important is **Partnership with the Carrier** for your Company or for your Clients?



2.15 Concluding Remarks

The following figure illustrates the importance of a number of factors that potentially influence the decision of choosing the trucking mode. As can be seen, the factors considered extremely important are quality of customer services, fast transit time, flexible services to many markets, on-time reliability, minimal loss and damage, prompt pick-up and delivery, and shipment size. On the other hand, service availability, shipment value, and partnership with the carrier was ranked as slightly less important.

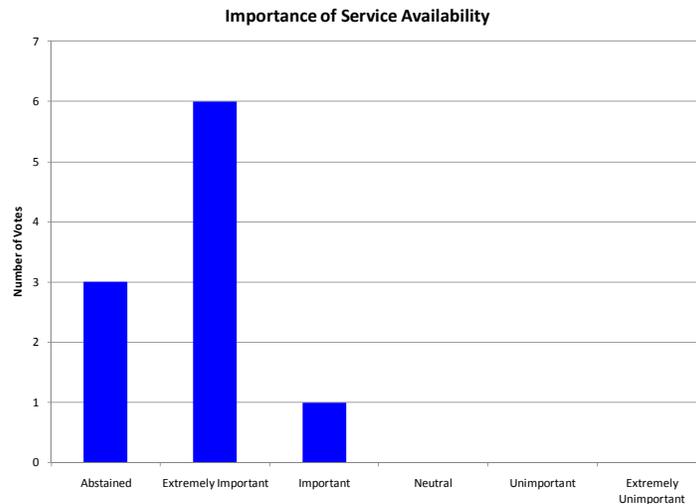


Note: 1 – Extremely Unimportant; 2 – Unimportant; 3 – Neutral; 4 – Important; 5 – Extremely Important

3. Importance of Railway Service Attributes

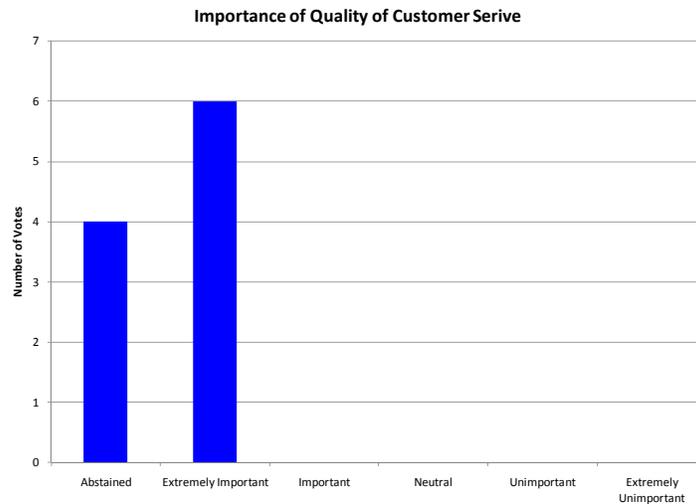
3.1 Service Availability

How important is **Service Availability** for your Company or for your Clients?



3.2 Quality of Customer Service

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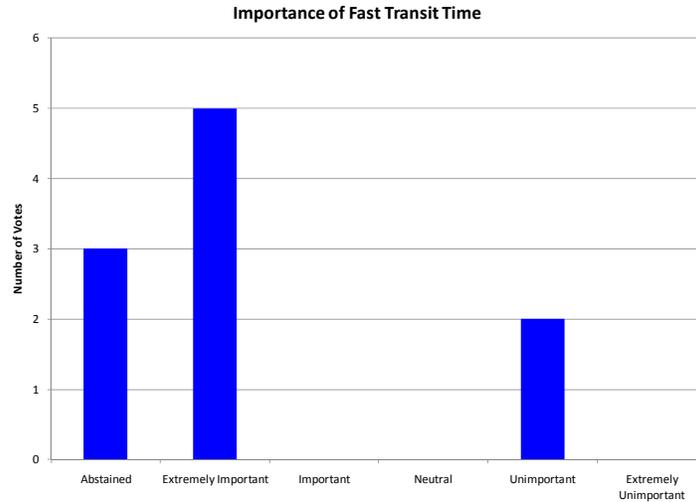


Comments

This was considered a very important factor and several participants noted that the customer service provided by the short-line railroads was better than the customer service provided by the Class I railroads.

3.3 Fast Transit Time

How important is **Fast Transit Time** for your Company or for your Clients?

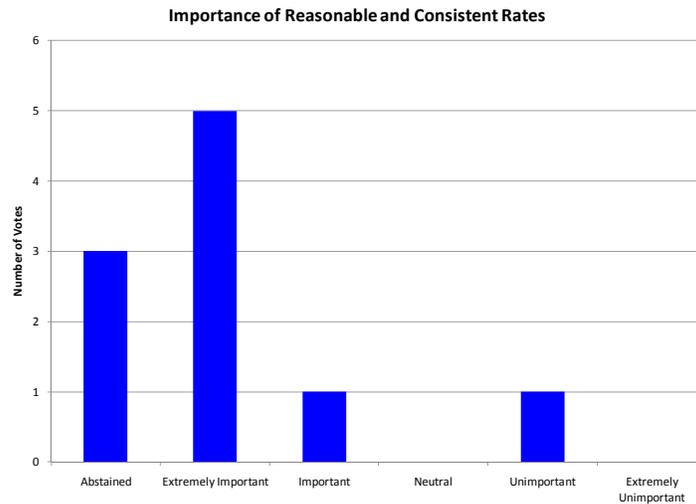


Comments

Consistency and reliability was considered more important than merely fast transit time.

3.4 Reasonable and Consistent Rates

How important are **Reasonable and Consistent Rates** for your Company or for your Clients?

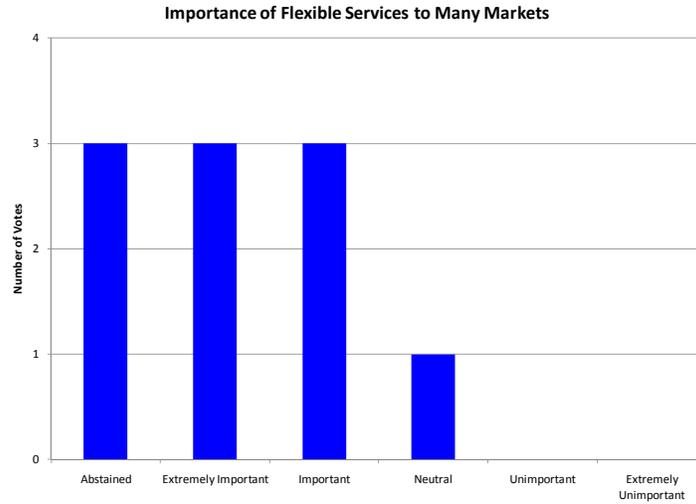


Comments

There are too many cost variables—e.g., freight rate, switch charge, fuel surcharge—that impact the consistency of rates.

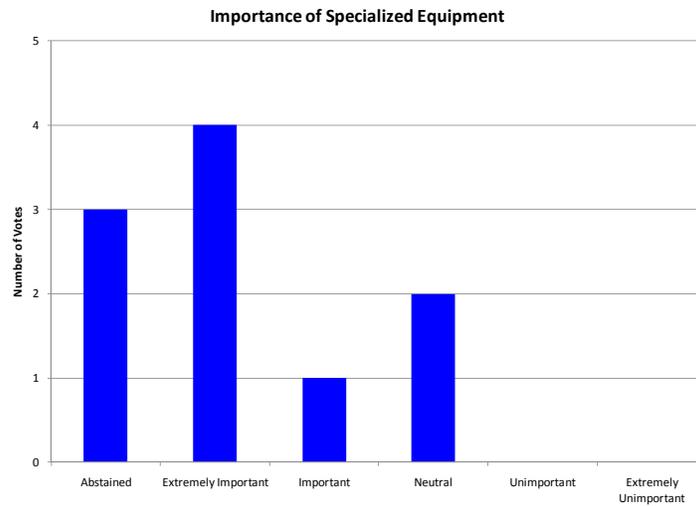
3.5 Flexible Services to Many Markets

How important are **Flexible services to many markets** for your Company or for your Clients?



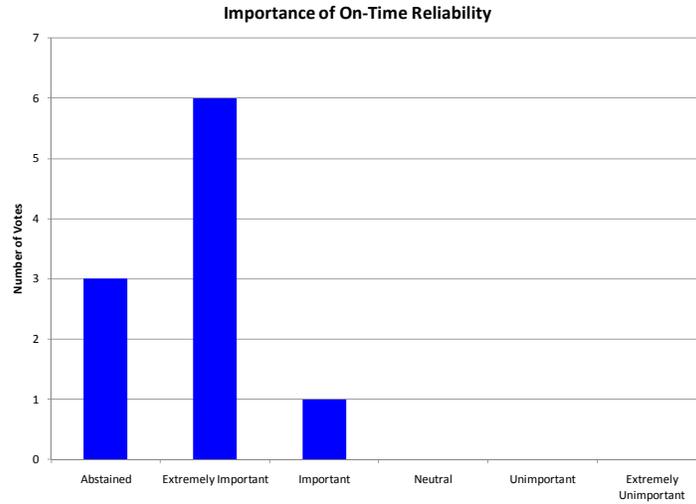
3.6 Specialized Equipment

How important is **Specialized Equipment** for your Company or for your Clients?



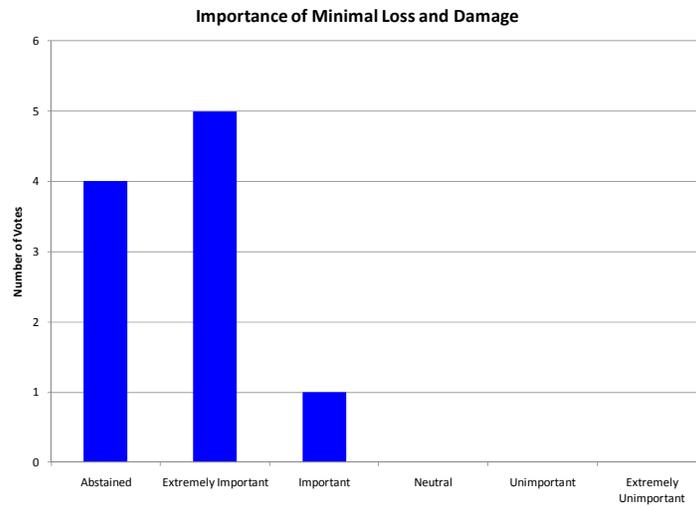
3.7 On-Time Reliability

How important is **On-Time Reliability** for your Company or for your Clients?



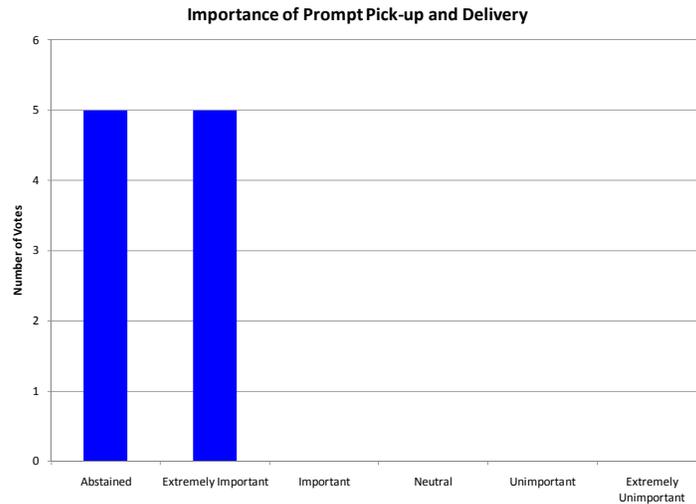
3.8 Minimal Loss and Damage

How important are **Minimal Loss and Damage** for your Company or for your Clients?



3.9 Prompt Pick-up and Delivery

How important is **Prompt Pick-up and Delivery** for your Company or for your Clients?



Comments

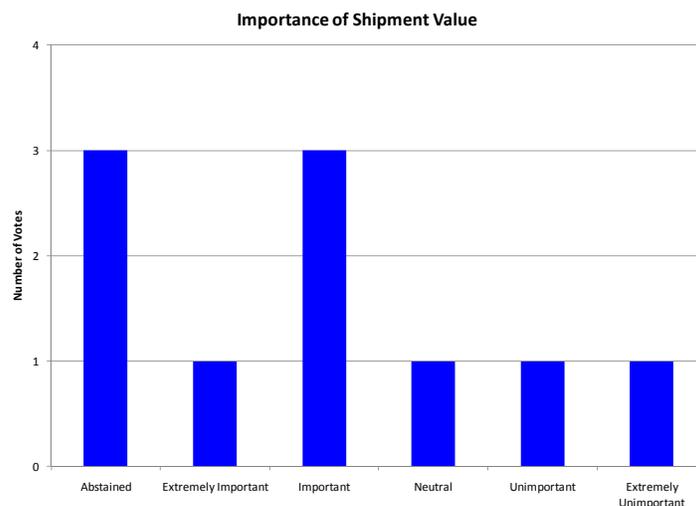
Time reliability was considered to be more important currently than speed.

When asked about the potential impact of having tracking services, participants felt that this would not make any difference. Participants currently have a system that lets them know where a shipment is, but when the shipment gets delayed at a certain location, nothing can be done.

The worst bottlenecks are experienced in Houston.

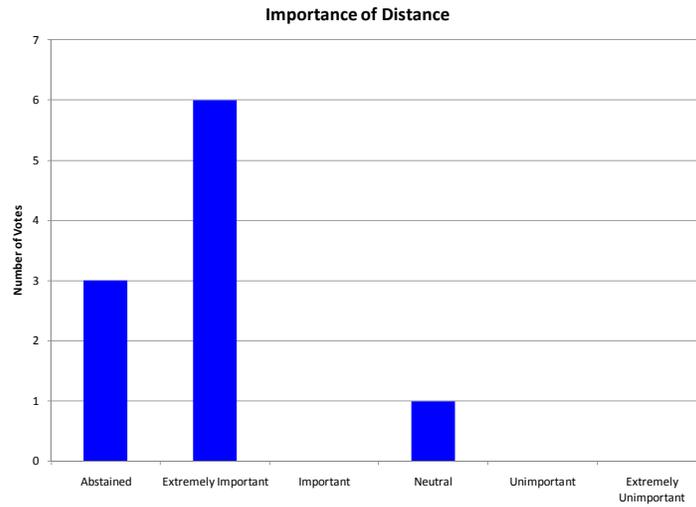
3.10 Shipment Value

How important is **Shipment Value** for your Company or for your Clients in determining a shipment strategy?



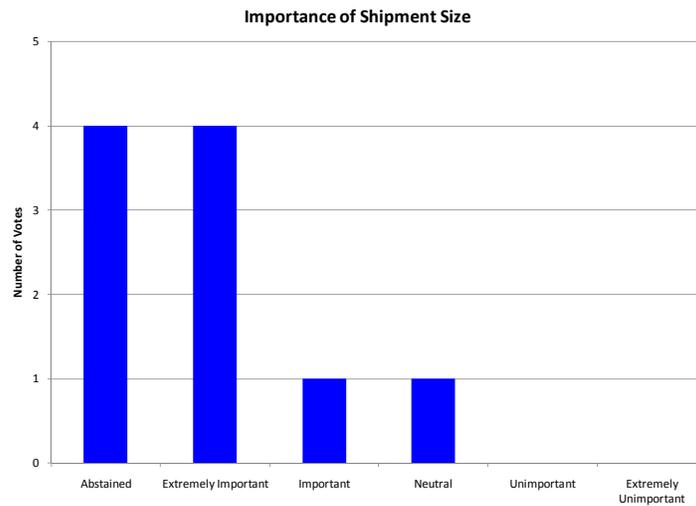
3.11 Distance

How important is **Distance** for your market area in determining a shipping strategy?



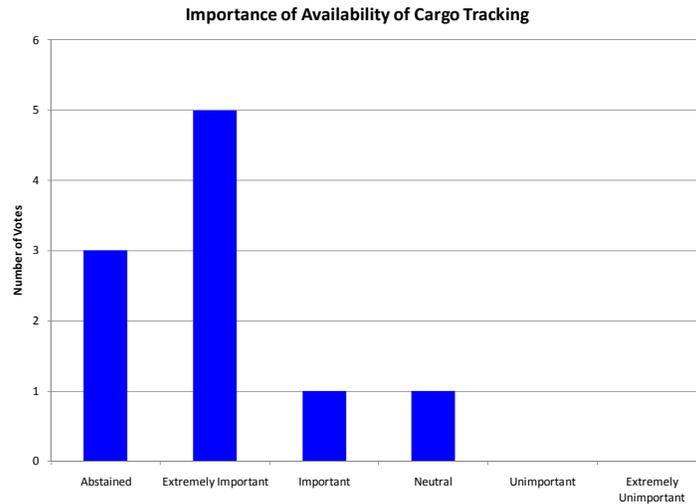
3.12 Shipment Size

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3.13 Availability of Cargo Tracking

How important is **Availability of Cargo Tracking** for your Company or for your Clients?

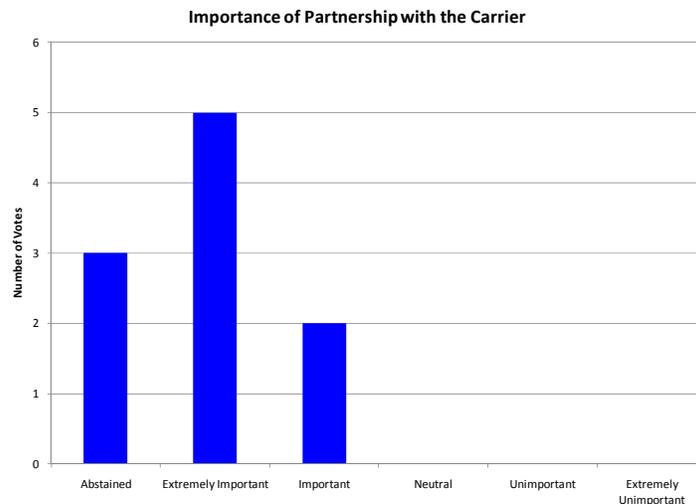


Comments

Concern was expressed about the availability of space for returning empty rail cars.

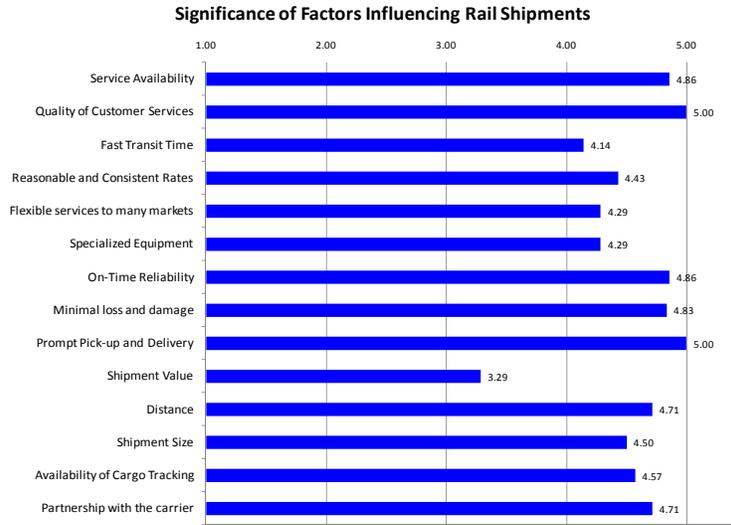
3.14 Partnership with the Carrier

How important is **Partnership with the Carrier** for your Company or for your Clients?



3.15 Concluding Remarks

The following figure illustrates the importance of a number of factors in the rail mode choice decision. In comparison with the trucking mode choice decision, only two factors were ranked extremely important: quality of customer services and prompt pick-up and delivery. Other important factors were service availability, on-time reliability, and minimal loss and damage. The least important factor in the rail mode decision (similar to the truck mode choice decision) was shipment value.



Note: 1 – Extremely Unimportant; 2 – Unimportant; 3 – Neutral; 4 – Important; 5 – Extremely Important

**South Coastal Region
Corpus Christi**

**Corpus Christi TxDOT District
Office**

1701 S Padre Island Drive

Corpus Christi, TX 78416

Thursday, September 24, 2009

Introduction: South Coastal Region

The South Coastal Region workshop began with a presentation to provide the context in which states have been conducting statewide freight planning. The presentation highlighted the federal laws that require statewide freight planning, the approaches taken by other State Departments of Transportation, and some of the challenges in conducting statewide freight planning. Against this background, the CTR research team subsequently presented the objectives of the current TxDOT research study 0-6297. The presentations were followed by a demonstration on the usage of the Iclicker. Participants were then presented with a number of questions/statements in three categories: (1) business factors that influence the size, frequency, and mode of transportation used by shippers, (2) mode choice factors impacting freight transportation, and (3) the identified transportation needs in the South Coastal Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the South Coastal Region workshop:

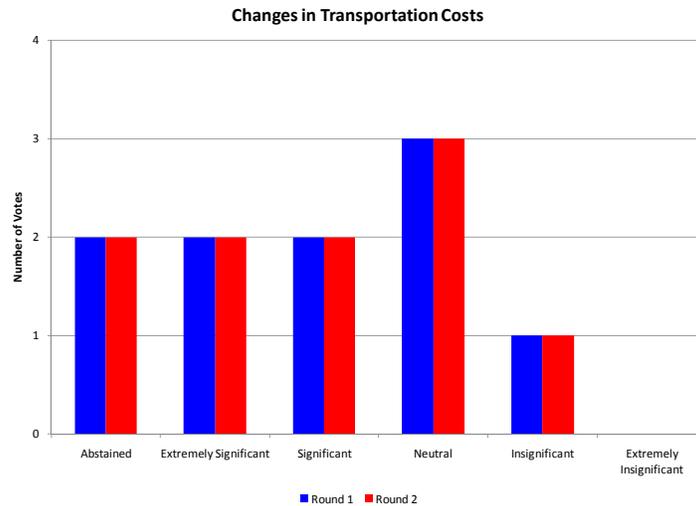
- Texas Dock & Rail Company Ltd. (1)
- Halliburton Energy Services (1)
- OxyChem Ingleside Plant (1)
- Susser Holding Corporation (1)
- Corpus Christi Metropolitan Planning Organization (1)
- Texas A&M University (1)
- DuPont (2)
- Atlas Radiator, Inc. (1)

Workshop Discussions

1. Business Factors Considered in Shipping Decisions

1.1 Changes in Transportation Costs

How have **changes in transportation costs** impact shipments delivered to/shipped by your company?



Comments

When transportation costs increase, shipments are made less frequently with better utilized—i.e., more fully loaded—trucks. Incentives (i.e., discounts) are offered to customers that ship truck loads.

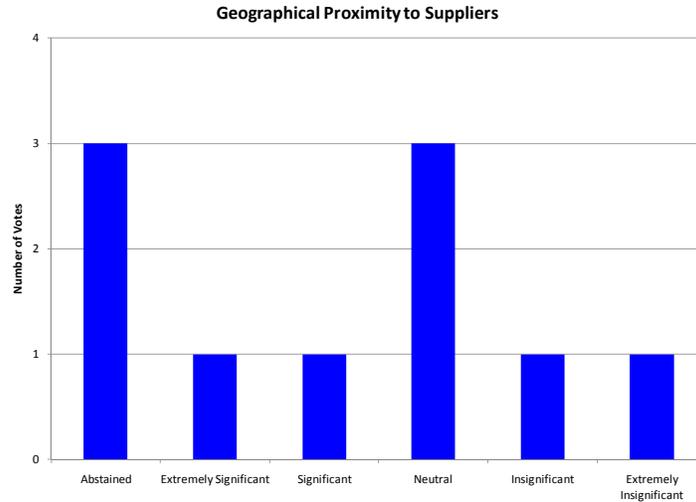
When diesel prices exceed \$2.00 per gallon, terminal shippers began to consider rail and barge.

The 22% fuel charge was also a significant cost to the shippers during recent high fuel prices.

Exports to Europe were beginning to increase again, specifically to France and Turkey, via the deep draft port of Corpus Christi.

1.2 Geographical Proximity to Suppliers

How does **geographical proximity to your suppliers** impact the shipments delivered to your company?

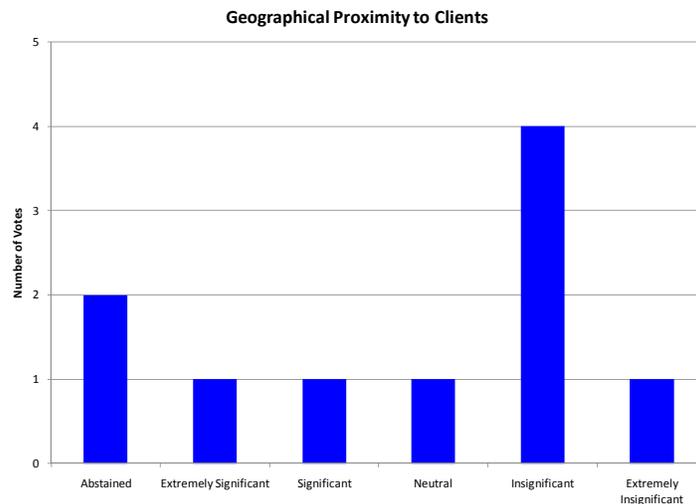


Comments

When just-in-time operations are available, distance is not regarded a big factor. The location of suppliers may, however, determine that trucking is the only transportation option.

1.3 Geographical Proximity to Clients

How does **geographical proximity to your clients** impact shipments shipped by your company?

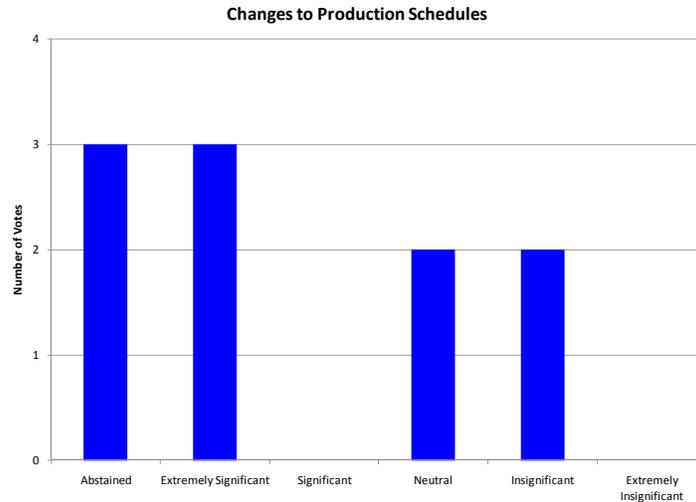


Comments

It is sometimes difficult to ship to Wyoming and Colorado as not many trucking companies offer services to these states. In addition, some shipments to Mexico can also be problematic. For example, when shipping to Monterrey and Mexico City, broker services are required at the border to handle the different rail lines. Finally, hazardous material content is becoming increasingly difficult to ship. Policies are becoming increasingly stringent and high-standard procedures are mandatory, which has resulted in only a few companies being certified to move hazardous materials.

1.4 Changes to Production Schedules

How would **changes to your production schedules** impact shipments received/shipped by your company?

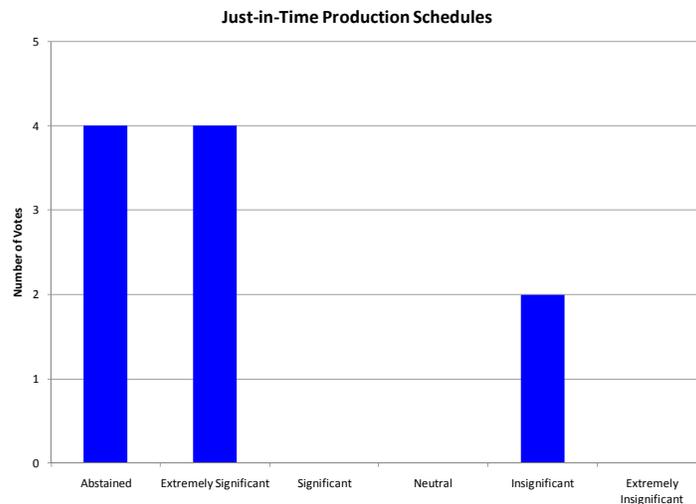


Comments

High/low production seasons do not affect shippers' mode choice. However, certain orders may require changes in production schedules.

1.5 Just-in-Time Production Schedules

How did/would **just-in-time production schedules** impact shipments received/shipped by your company?



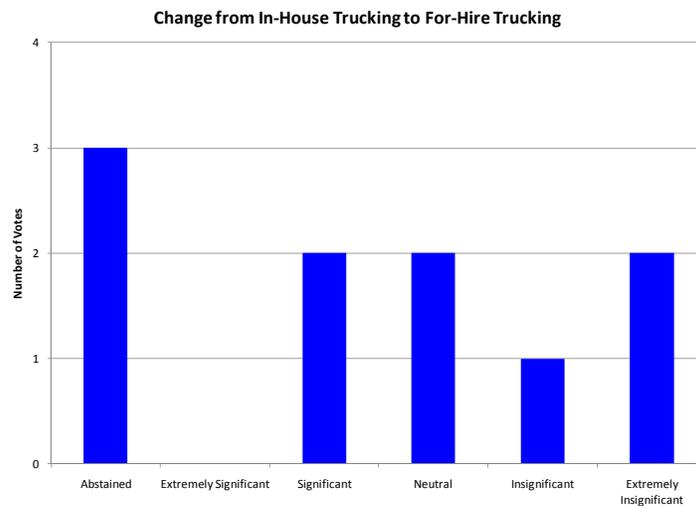
Comments

Today, just-in-time is the established delivery method for most shippers. Trucking offers the most time-sensitive service. Rail is sometimes unpredictable, but some clients are not as

frustrated by the variability in shipment delivery. For example, for chemical shipments a few days variability is still workable. Also, barge shipments experience variability—e.g., 2–3 days’ variability. The latter is most commonly due to weather, especially during the winter season. On the other hand, the food services industry typically has a limited timeline for the construction of a new location and therefore relies almost solely on the trucking mode.

1.6 Change from In-House Trucking to For-Hire Trucking

How did/would a **change from in-house trucking to for-hire trucking** impact shipments shipped by your company?

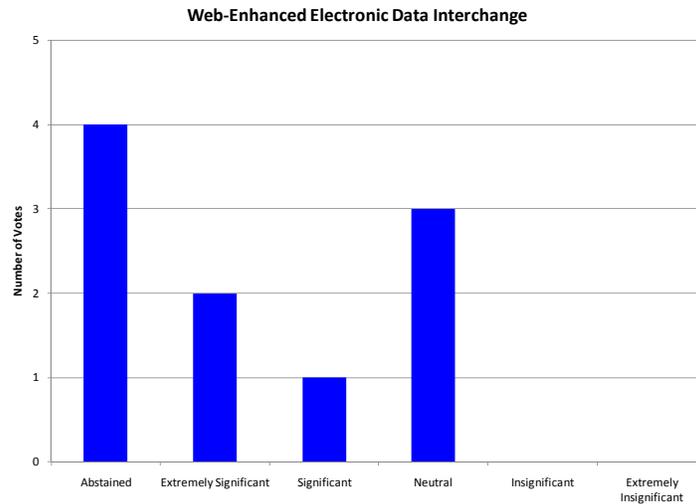


Comments

One participant mentioned that an increase in their business resulted in the management of the trucking services becoming a business in itself. Other participants mentioned that in-house trucking became too expensive. Third party vendors could meet their business requirements at a lower cost. These vendors typically charge a lower rate if a return trip can be secured. The economic downturn has, however, impacted the likelihood of a loaded return trip, which has increased their trucking costs. Another participant mentioned that their company has purchased a competitor that had an in-house trucking fleet, which has been maintained.

1.7 Web-Enhanced Electronic Data Interchange (EDI)

How did/would **web-enhanced Electronic Data Interchange (EDI)** impact shipments to/by your company?

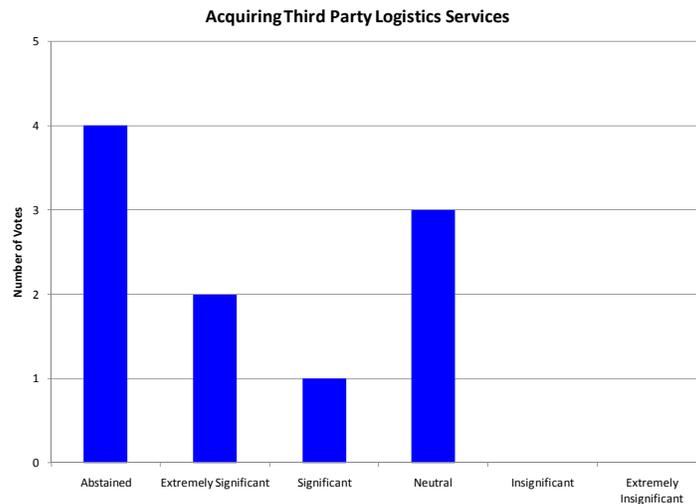


Comments

GPS in trucks is considered valuable, but shippers must contact the trucking company to obtain the tracking information.

1.8 Acquiring Third Party Logistics Services

How did/would **acquiring third party logistics services** influence shipments by your company?



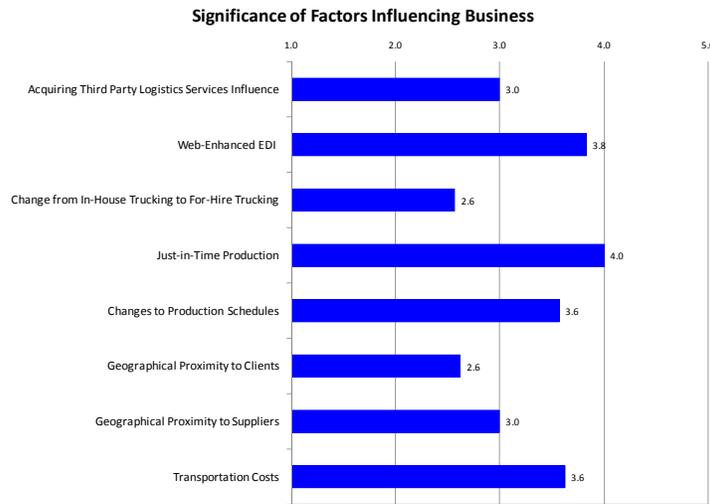
Comments

Logistics companies based in Dallas/Fort Worth, Houston, Alice, and West Texas, among others, have a significant impact on the company strategy of one participant.

Some participants felt that the decision to use third party logistics providers may offer time-saving benefits to some companies.

1.9 Concluding Remarks

The following figure illustrates the perceived importance of various business factors in terms of influencing the shipment size, shipment frequency, and mode of transportation used by shippers. As can be seen, just-in-time (4.0), web-enhanced EDI (3.8), changes to production schedules (3.6), and transportation costs (3.6) are considered significant factors in the shipping decisions of shippers.

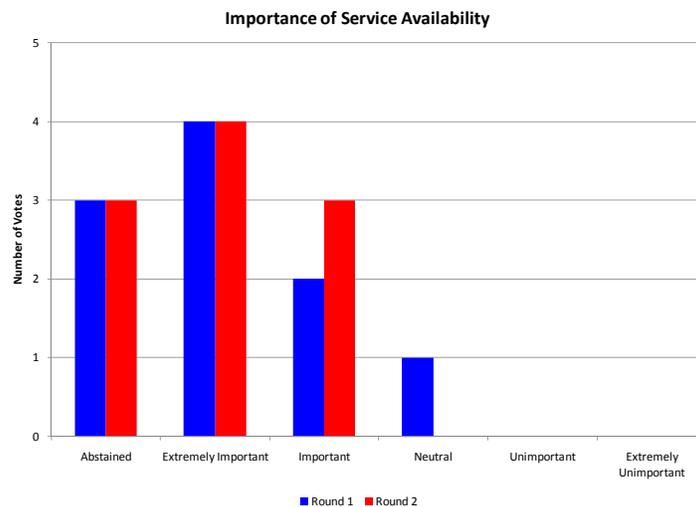


Notes: 1 – Extremely Insignificant; 2 – Insignificant; 3 – Neutral; 4 – Significant; 5 – Extremely Significant

2. Factors that Impact Modal Competitiveness

2.1 Service Availability

How important is **Service Availability** to your mode choice decision?

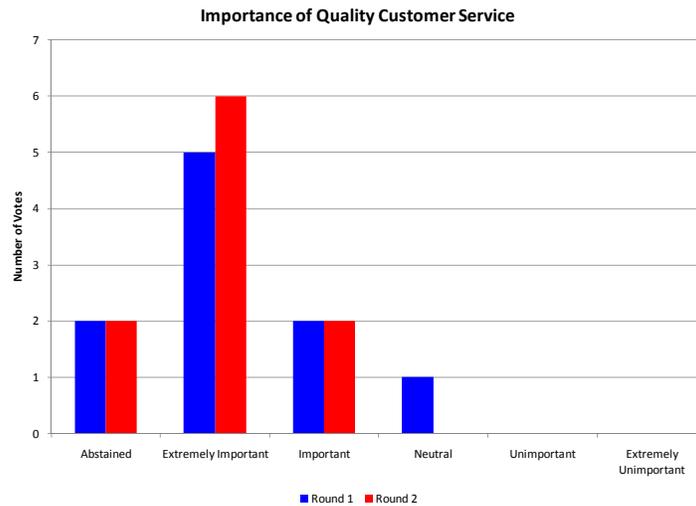


Comments

One participant mentioned that there is insufficient barge capacity.

2.2 Quality of Customer Service

How important is Quality of Customer Service to your mode choice decision?

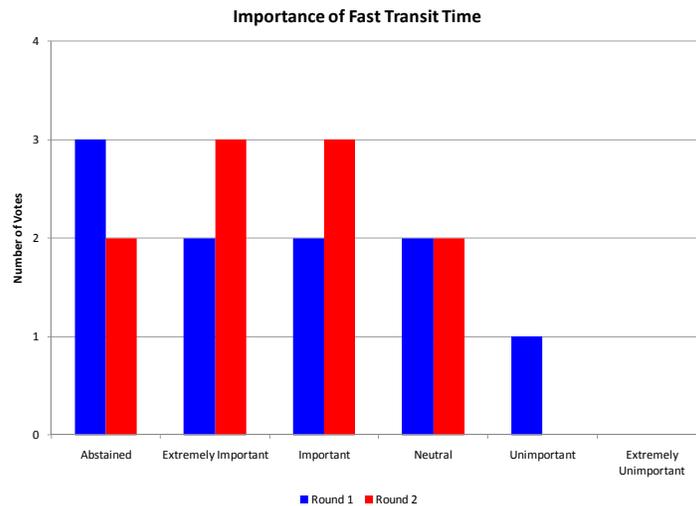


Comments

One participant defined good customer service as on-schedule shipments, within budget, safe, personal interaction, available 24 hours, and reliable, among other characteristics. Another participant mentioned that he has more frequent communication with the barge operators than with any other mode. His experience has been that rail is unreliable.

2.3 Fast Transit Time

How important is Fast Transit Time to your mode choice decision?

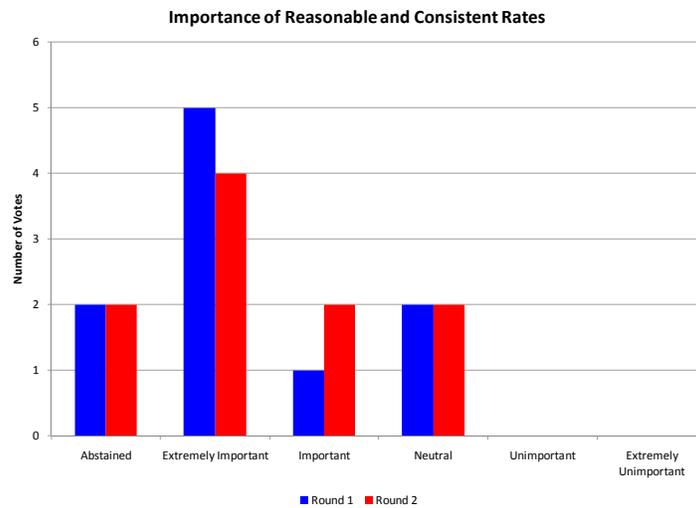


Comments

Some participants mentioned that deliveries occur 24 hours per day. It is important for some to ensure deliveries are made within a specified 2-hour window. Another participant mentioned that fast transit time may be important, but it is perhaps not always realistic. Also, longer transit times do not necessarily equate to a reduction in the level of service. For example, for materials that do not have an expiration date, faster delivery is not necessary. In these cases, predictability is more valuable. On the other hand, emergency situations may warrant the need for fast transit times. Fast transit times also do not necessarily exclude the rail option. Faster transit arrangements can be made by rail, if necessary, but the process is more complicated than for trucks.

2.4 Reasonable and Consistent Rates

How important are Reasonable and Consistent Rates to your mode choice decision?

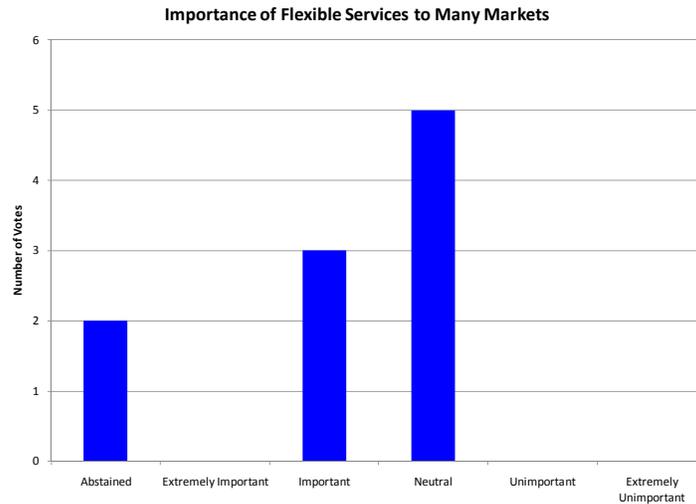


Comments

Some participants are required to use a certain mode predominantly, because of the characteristics of their commodity or the nature of their business. These participants mentioned that severe rate changes would need to be in effect for them to change their mode choice. The water mode prices were noted to be the least predictable and gas price increases are passed directly onto the consumer. In the case of the former, private terminals were noted to have higher flexibility in setting rates compared to the public terminal. The higher volume shippers typically enter into annual contracts with the railroad (i.e., UP) to move their product.

2.5 Flexible Services to Many Markets

How important are **Flexible services to many markets** to your mode choice decision?

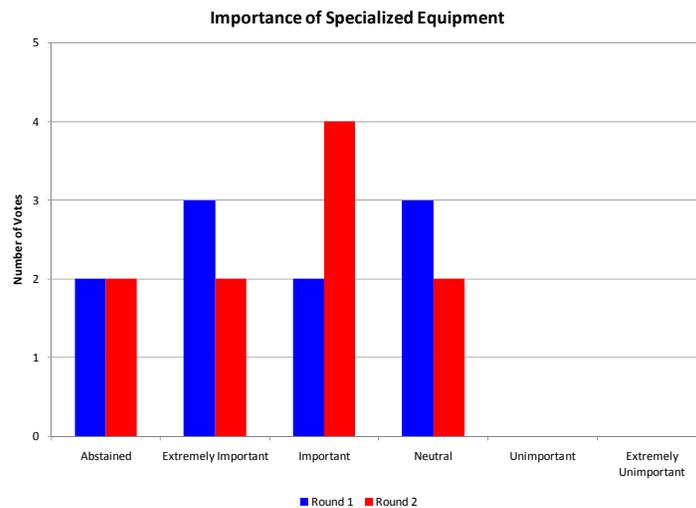


Comments

Some high-volume shippers mentioned that shipments by water mode have proven to be more viable and flexible for them than the other transportation options available.

2.6 Specialized Equipment

How important is **Specialized Equipment** to your mode choice decision?

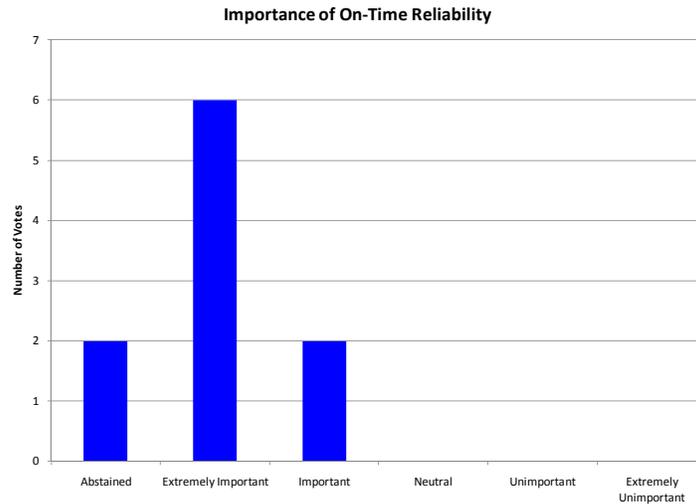


Comments

A few participants mentioned that the characteristics of their product require the use of special containers for truck and rail movements.

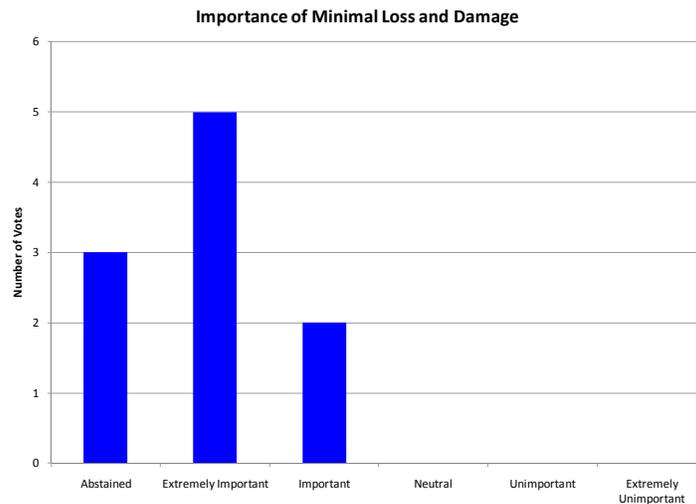
2.7 On-Time Reliability

How important is **On-Time Reliability** to your Mode Choice Decision?



2.8 Minimal Loss and Damage

How important are **Minimal Loss and Damage** to your Mode Choice Decision?

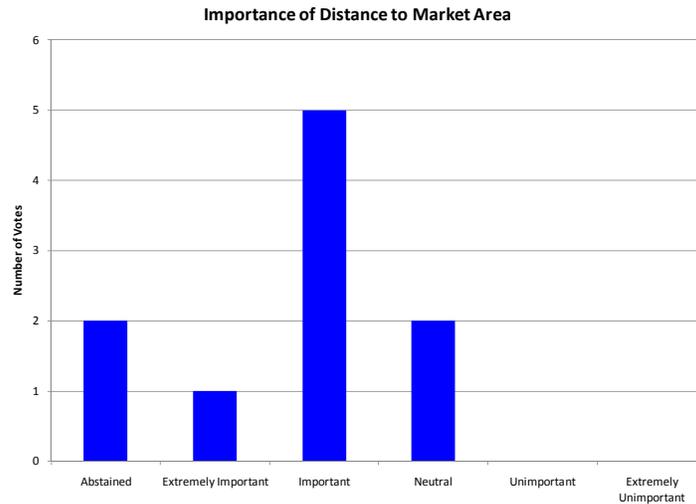


Comments

Participants argued that there is a risk for loss and damage associated with all transportation modes. However, the loss or damage incurred due to a barge incident is always significant. On the other hand, the chances for human error are higher with trucks, but the loss and damage may be more limited. Some participants argued that rail is safer for the movement of hazmat products and given a choice they will ship by rail. However, often the mode is determined by the customer's ability to receive rail shipments.

2.9 Distance to Market Area

How important is Distance to your market area in your mode choice decision?

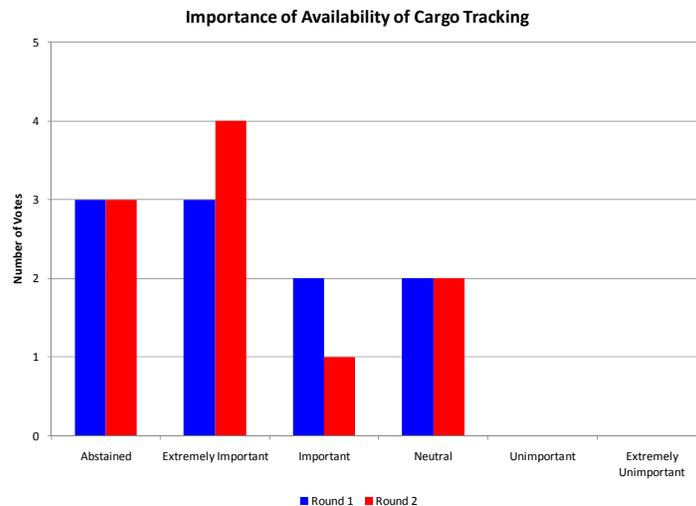


Comments

Volume is often the dictating factor in how far the product will be shipped.

2.10 Availability of Cargo Tracking

How important is Availability of Cargo Tracking to your mode choice decision?

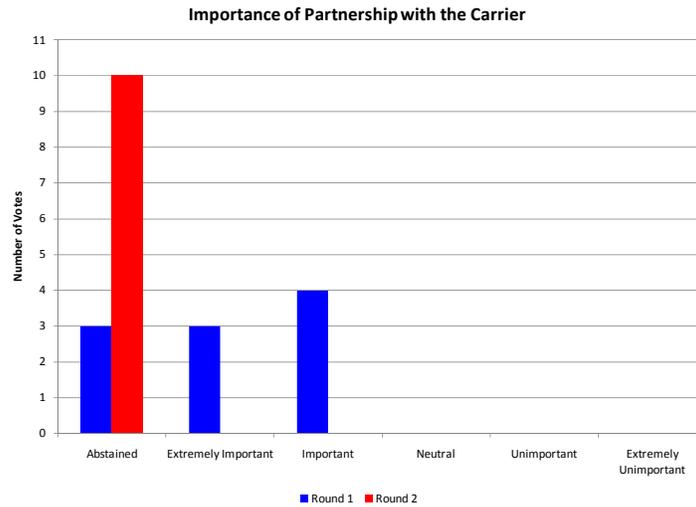


Comments

Most participants expected that the transportation carriers will be in a position to tell them where their shipments are. For example, UP has tracking devices that track rail cars. One participant mentioned that a personal call to the shipper is used to track shipments to their facility.

2.11 Partnership with the Carrier

How important is Partnership with the carrier to your mode choice decision?



Comments

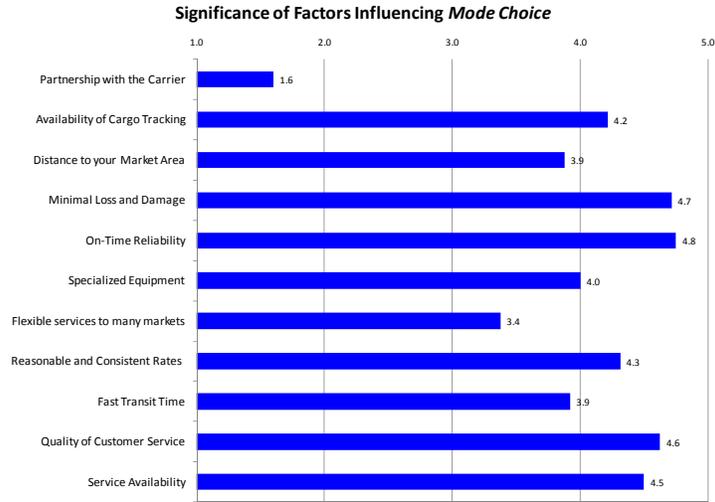
It was noted that the relationship with the carrier is as important as the relationship with the customer, and within a mode, determines which carrier will be selected.

2.12 Concluding Remarks

The following figure illustrates the ranking of various factors that potentially influences the mode choice decision¹. From the figure, it is evident that on-time reliability (4.8), minimal loss and damage (4.7), quality customer service (4.6), and service availability (4.5) were ranked important to extremely important in the mode choice decision.

¹ Please note that participants were not given the opportunity to rank/comment on the following mode choice factors because of time constraints:

- How important are **Prompt Pick-up and Delivery** to your mode choice decision?
- How important is **Cargo Value** in determining your mode choice decision?
- How important is **Shipment Size** in your mode choice decision?

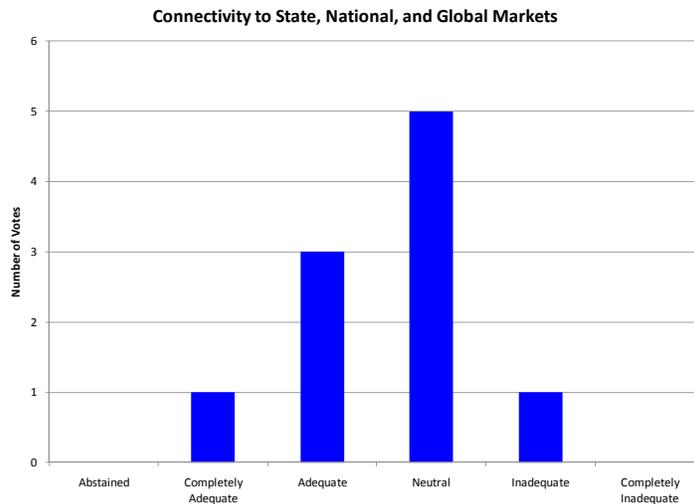


Scale: 1 – Extremely Unimportant; 2 – Unimportant; 3 – Neutral; 4 – Important; 5 – Extremely Important

3. South Texas’s Transportation System

3.1 Connectivity of South Texas’s Transportation System

How would you rate the South Texas transportation system in meeting your business needs in terms of **Connectivity to state, national, and global markets?**

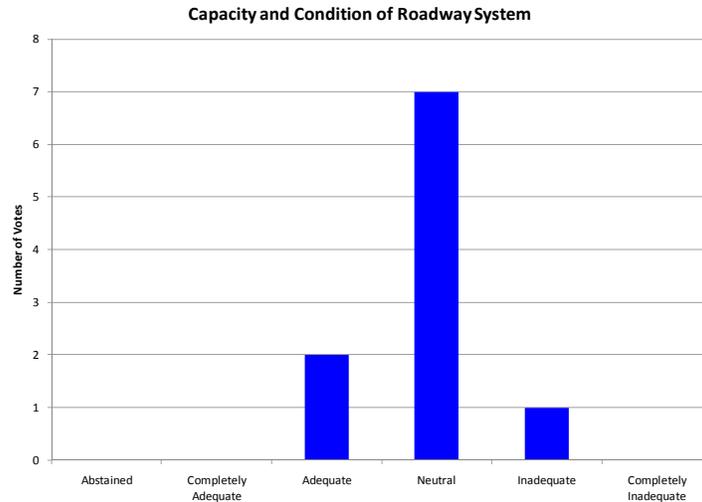


Comments

Most participants felt that their transportation needs were not currently met with the exception of the highway modes. However, one participant mentioned that some trucking regulations were too harsh and restricted the use of larger trucks. Some participants mentioned that they only have one rail option and would encourage increased rail competition in the region by allowing another Class I to operate. Most participants felt that there is a need for non-highway investments in the region. Also, one participant mentioned the need for investments in local roads.

3.2 Capacity and Condition of South Texas’s Roadway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of South Texas roads and highways?**

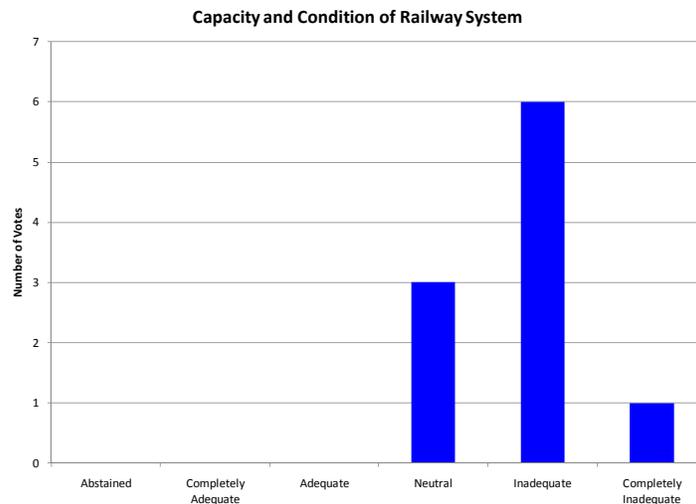


Comments

Bottlenecks are starting to develop on some highways. Most participants felt that investments should be focused in freight corridors that would be the most beneficial for the region.

3.3 Capacity and Condition of South Texas’s Railway System

How satisfied you are with the freight transportation infrastructure in South Texas in terms of **capacity and condition of rail infrastructure?**



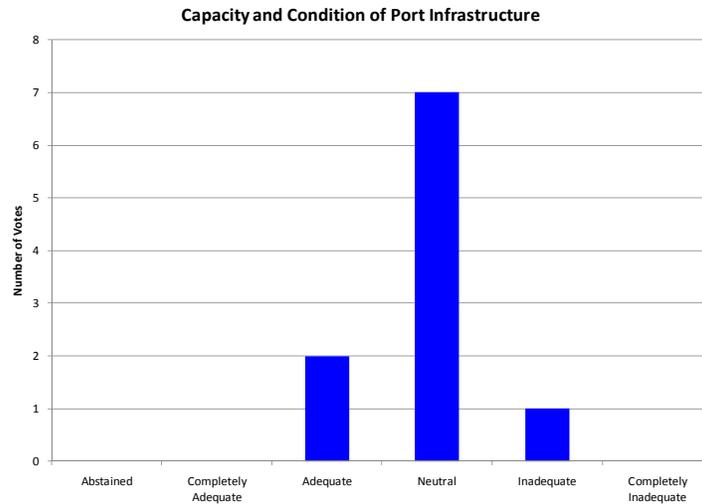
Comments

Although participants felt that, in general, the UP tracks were well maintained, a number raised capacity concerns near the Port of Corpus Christi and at switching yards. Also, the congestion

experienced around Odem was believed to be attributable to switching issues experienced by UP. Participants also felt that the current economic situation has resulted in planned rail capacity investments being postponed. Finally, a number of participants felt that a more competitive rail market would benefit their business.

3.4 Capacity and Condition of Port Infrastructure

How satisfied you are with the freight transportation infrastructure in South Texas in terms of **capacity and condition of port infrastructure?**

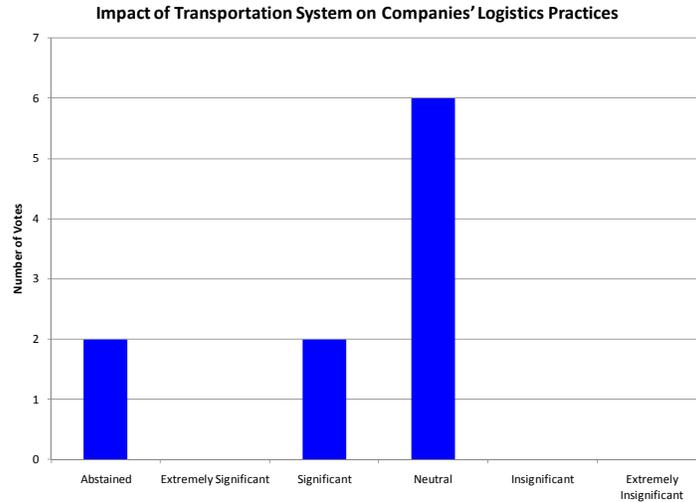


Comments

Participants felt that waterway infrastructure existed in the region, but that the landside infrastructure did not. Some participants pointed out that the Port of Corpus Christi is preferred by some because it experiences less congestion than the Houston ports. However, most participants felt that the lack of a container terminal was a significant issue. It was argued that the availability of a container terminal and the use of containers would result in lower freight costs for many businesses in the area.

3.5 Impact of South Texas’s Transportation System on Companies’ Logistics Practices

How has South Texas's transportation system impacted your companies' logistics practices?

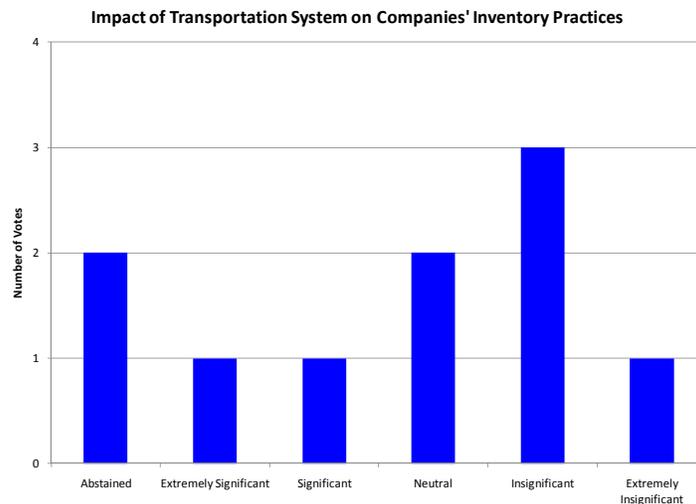


Comments

Most participants felt that they have to adapt to changes in the transportation system. In other words, they make it work.

3.6 Impact of South Texas's Transportation System on companies' inventory practices?

How has South Texas's transportation system impacted your companies' inventory practices?

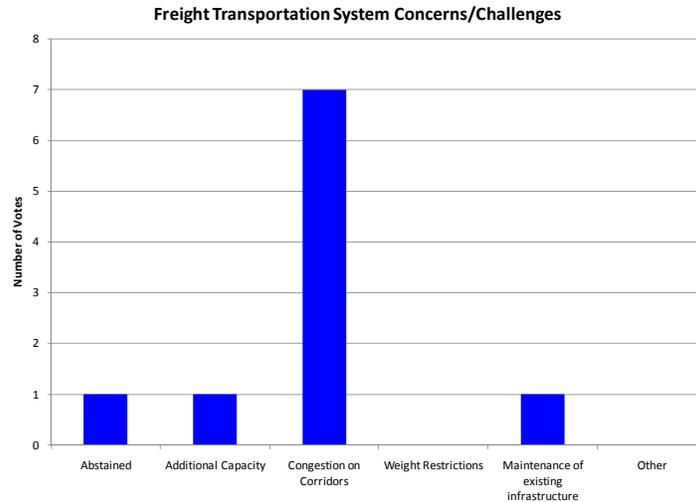


Comments

Participants mentioned that when supply is limited, inventory is really important. Most companies, however, would prefer to eliminate inventory levels, but the associated freight transportation costs would be very high. Just-in-time production has been adopted to decrease the required inventory. Adjustments to delivery times are therefore more common than adjustments to inventory levels.

3.7 Freight Transportation System Concerns/Challenges

What are your **major concerns/challenges** concerning Texas's freight transportation system as it pertains to your business?



Comments

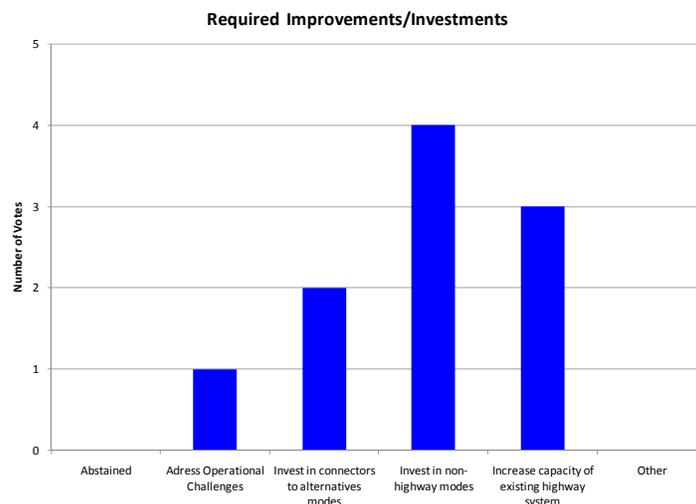
Congestion on IH 35 is considered a major freight bottleneck. Other concerns include at-grade crossings, access management on arterials/highways, and the design of off-ramps.

One participant cautioned against the construction of the IH 69 corridor, because of the potential detrimental impacts on small towns that will be bypassed.

Finally, the following transportation corridors are considered critical to the region: US 59, IH 10, IH 35, UP, and the intercoastal waterway.

3.8 Required Improvements/Investments

What **investments** are required to remedy infrastructure concerns/challenges?

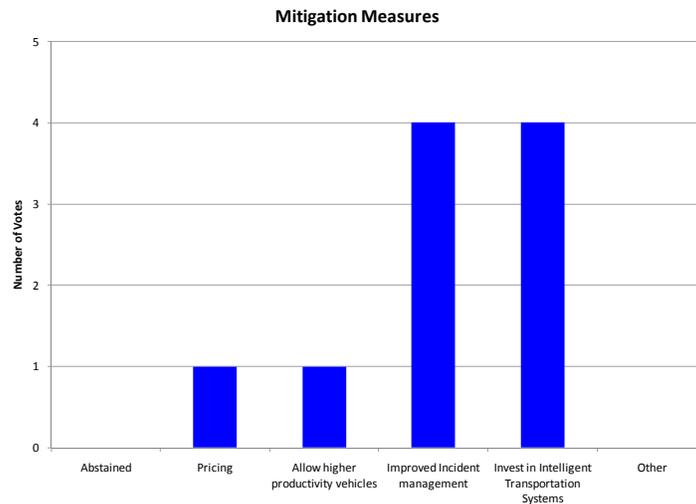


Comments

It was felt that trucks need dedicated facilities, because the design of highways that accommodate both passenger and freight traffic is excessively expensive.

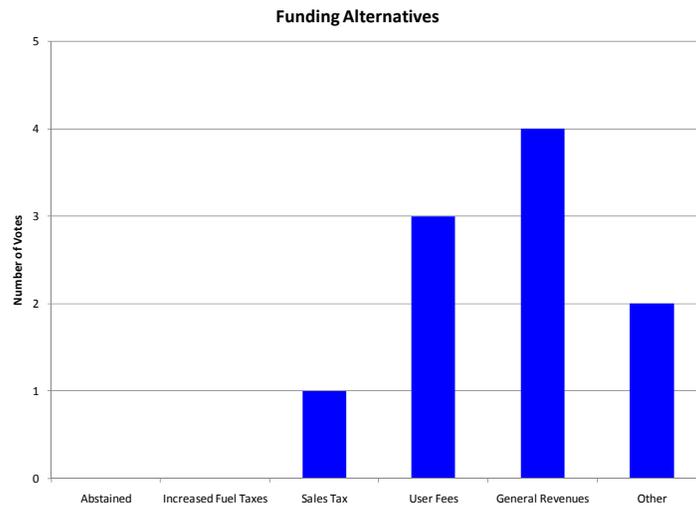
3.9 Required Mitigation Measures

What **measures** are required to remedy operational concerns/challenges?



3.10 Funding Alternatives

How should improvements to Texas's transportation system be funded?

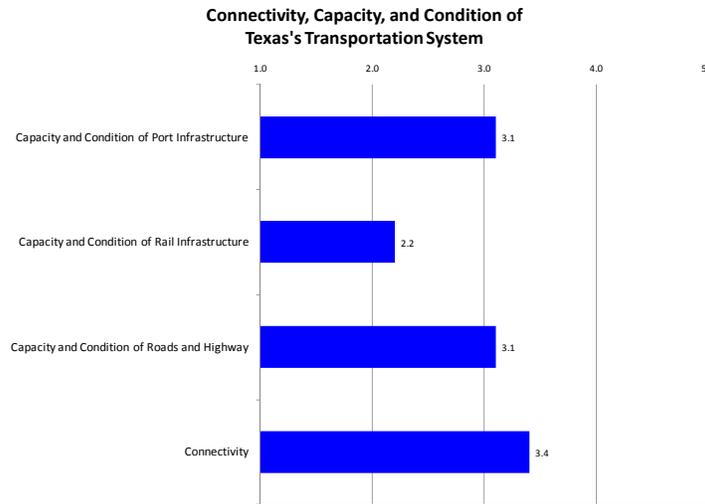


Comments

There was support for private investments in the transportation system, but participants also felt that more of the federal fuel tax should be returned to Texas.

3.11 Concluding Remarks

The following figure illustrates the participants' perceptions of the adequacy of Texas's transportation infrastructure. Clearly connectivity was rated between neutral and adequate (3.4), while participants, in general, also felt neutral about the capacity and condition of existing roads and highways (3.1) and the capacity and condition of port infrastructure (3.1). On the other hand, the capacity and condition of rail infrastructure was considered inadequate in serving the needs of the participants.



Scale: 1 – Completely Inadequate; 2 – Inadequate; 3 – Neutral; 4 – Adequate; 5 – Extremely Adequate

**North Coastal Region
Houston**

Houston TxDOT District Office

7600 Washington Avenue

Houston, TX 77007

Tuesday , October 20, 2009

Introduction: North Coastal Region

The North Coastal Region workshop began with a presentation to provide the context in which states have been conducting statewide freight planning. The presentation highlighted the federal laws that require statewide freight planning, the approaches taken by other State Departments of Transportation, and some of the challenges in conducting statewide freight planning. Against this background, the CTR research team subsequently presented the objectives of the current TxDOT research study 0-6297. The presentations were followed by a demonstration on the usage of the Iclicker. Participants were then presented with a number of questions/statements in three categories: (1) business factors that influence the size, frequency, and mode of transportation used by shippers, (2) mode choice factors impacting freight transportation, and (3) the identified transportation needs in the North Coastal Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the North Coastal Region workshop:

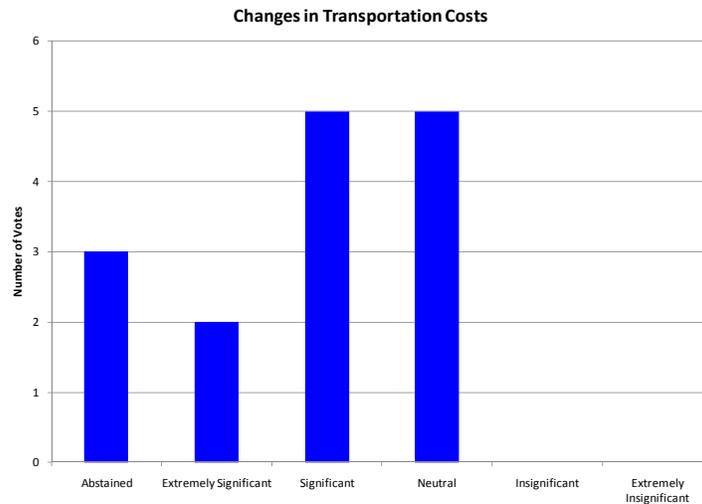
- Merichem Chemicals & Refinery (2)
- Dannenbaum Engr. Corp. (1)
- GE Energy (1)
- Shell Oil (1)
- TxDOT (3)
- Omni Logistics (1)
- Gulf Winds International (1)
- Satellite Logistics Group (1)
- Environmental Infrastructure Planning (1)
- 4LInnovations (1)
- ACT Pipe and Supply (1)
- H-GAC (2)

Workshop Discussions

1. Business Factors Considered in Shipping Decisions

1.1 Changes in Transportation Costs

How have **changes in transportation costs** impact shipments delivered to/shipped by your company?

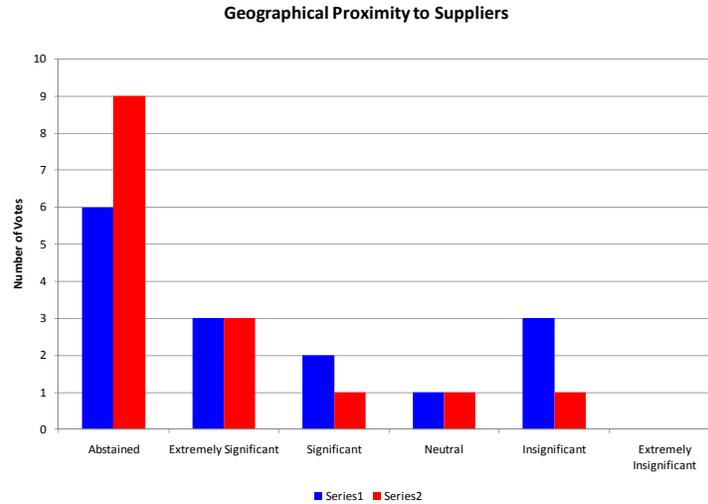


Comments

Earlier in 2009, the prices of the trucking industry were very competitive with rail, because the companies needed the business. As of October 2009, trucking prices were increasing again.

1.2 Geographical Proximity to Suppliers

How does **geographical proximity to your suppliers** impact the shipments delivered to your company?

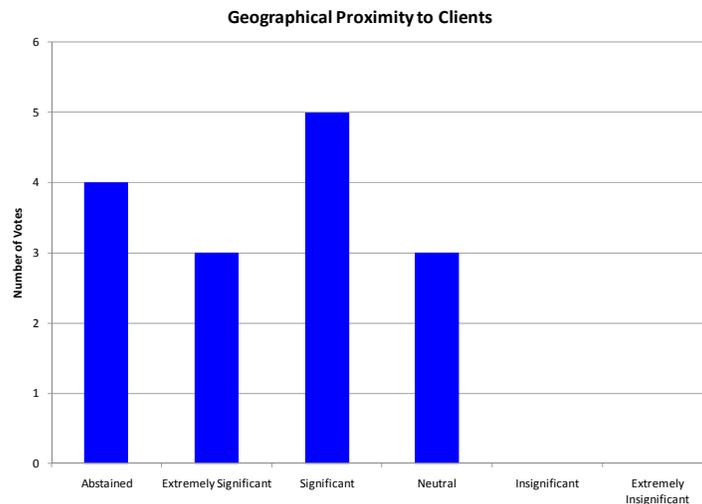


Comments

While proximity to suppliers is a factor, it is not as important as some of the other factors and does not impact mode choice.

1.3 Geographical Proximity to Clients

How does **geographical proximity to your clients** impact shipments shipped by your company?



Comments

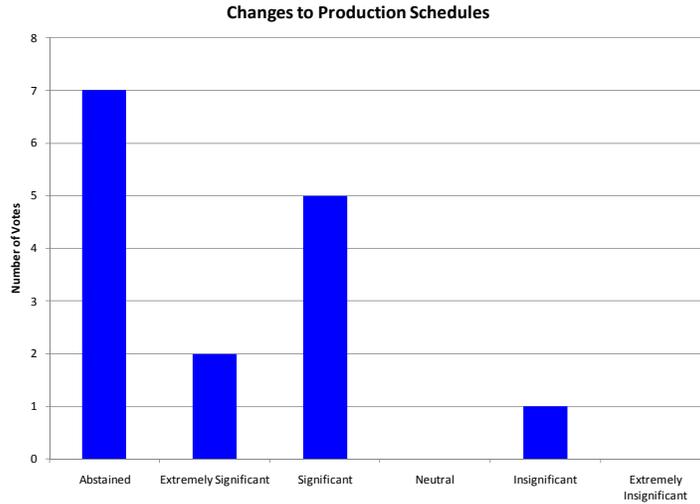
Shippers tend to locate near rail sidings, ports (e.g., Houston), and intermodal facilities (e.g., Alliance) to allow multi-modal shipping options. In other instances, their location is tied to a specific place for a resource reason.

Location decisions consider supply and need—but not where shipments are coming from and going to. Rather, the focus is on when the product gets there, when the client needs it, and when the client thinks he needs it. Distance is not a reason for a product not being shipped. Distance

may be a factor why a product cannot be shipped by a specific type of mode, but distance is not a factor in the decision to ship a product.

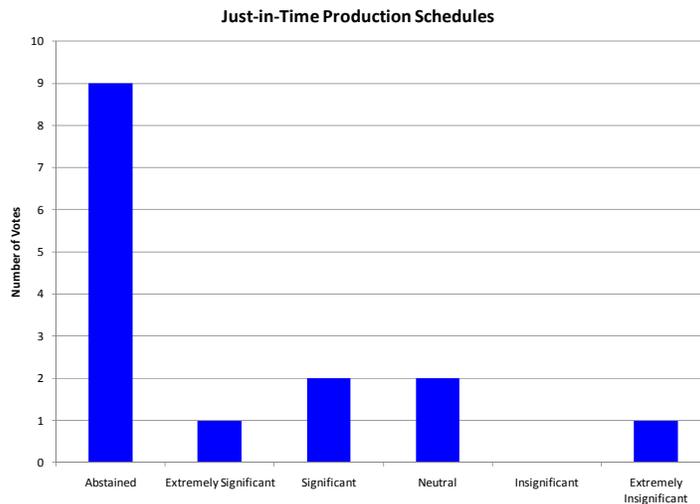
1.4 Changes to Production Schedules

How would **changes to your production schedules** impact shipments received/shipped by your company?



1.5 Just-in-Time Production Schedules

How did/would **just-in-time production schedules** impact shipments received/shipped by your company?



Comments

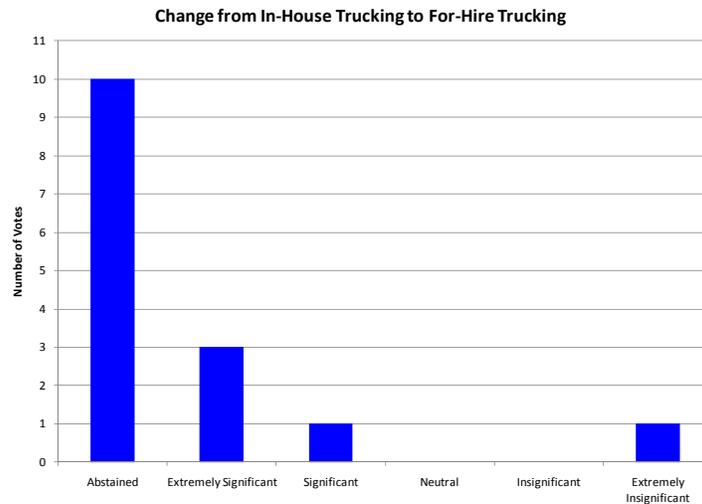
One participant mentioned that the chemical industry does not engage in just-in-time production schedules, but that they specify a window for getting a shipment. For example, shipments delivered to Houston may have a window of 3 days or more. In the case of rail, the window for

ISO containers is typically 2 days. This is partially due to the fact that the rail yards have space constraints and these containers cannot be stacked—i.e., they are big and heavy.

Another participant “builds to install.” This company has 53 vehicles in their fleet and uses 7 trucking companies when having to ship longer distance. Their company drivers go only to Louisiana, Oklahoma, and Arkansas. Longer distance shipments are outsourced to, among other companies, JB Hunt. They found that if a product does not meet the specifications of the client and needs to be re-manufactured, then the delivery window becomes very narrow. This participant has never used rail. Some product that is heavy could potentially move by rail, but the company ships it in four different pieces on their trucks rather than in one bulk shipment by rail.

1.6 Change from In-House Trucking to For-Hire Trucking

How did/would a **change from in-house trucking to for-hire trucking** impact shipments shipped by your company?

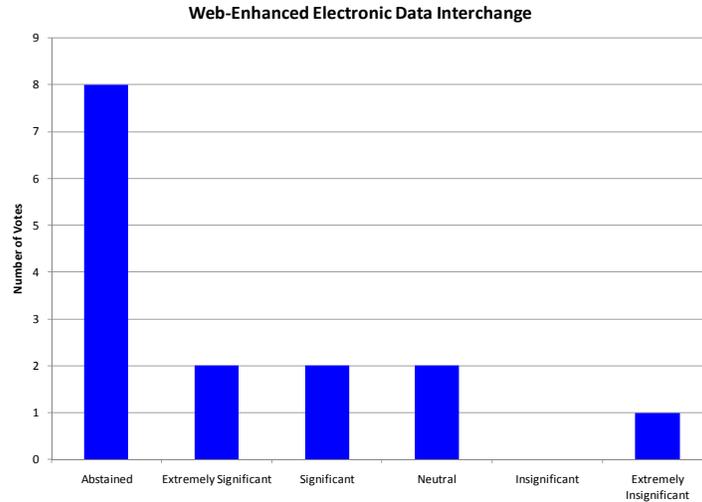


Comments

One of the participants mentioned that there is a risk when outsourcing the shipment if the freight carrier does not have the equipment to offload the product. The company’s in-house fleet is equipped with forklifts to offload their product. Another participant has outsourced most of the trucking services. Only a few people remain in Houston. This company uses about 21 U.S. carriers and 17 Canadian carriers to move their product.

1.7 Web-Enhanced Electronic Data Interchange

How did/would **web-enhanced Electronic Data Interchange (EDI)** impact shipments to/by your company?

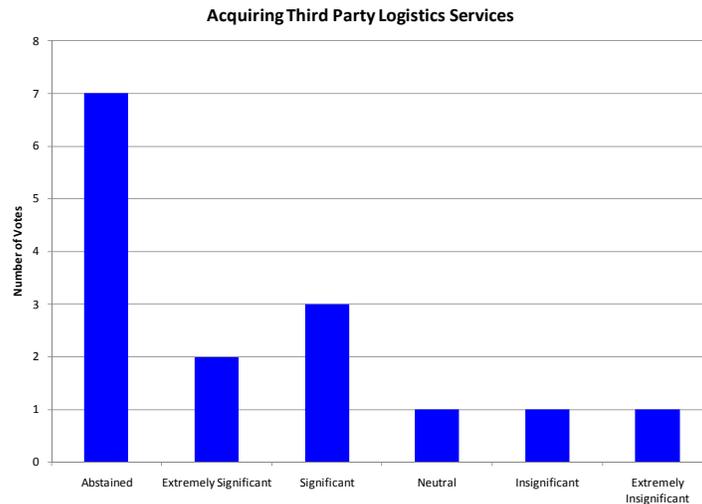


Comments

EDI was defined as the transmission of data electronically, allowing the faster transfer of data with minimal support staff. In other words, there is no physical transmission of paper. All documents are accepted electronically and delivery is confirmed electronically without ever having to talk to someone. Payments or authorizations are also conducted electronically. There is thus no human involvement besides the monitoring of the system. For example, some participants pointed out that when a container is released to the Port of Houston or from the Port of Houston, the company receives an email. The company then subsequently e-mails and bills their client electronically. In the case of some of the larger “big box stores,” the use of EDI is considered a competitive advantage. Some participants, for example, mentioned that anyone that can drive a truck can start their own business, but if a trucking company provides EDI services, the trucking company would be at a competitive advantage.

1.8 Acquiring Third Party Logistics Services

How did/would **acquiring third party logistics services** influence shipments by your company?

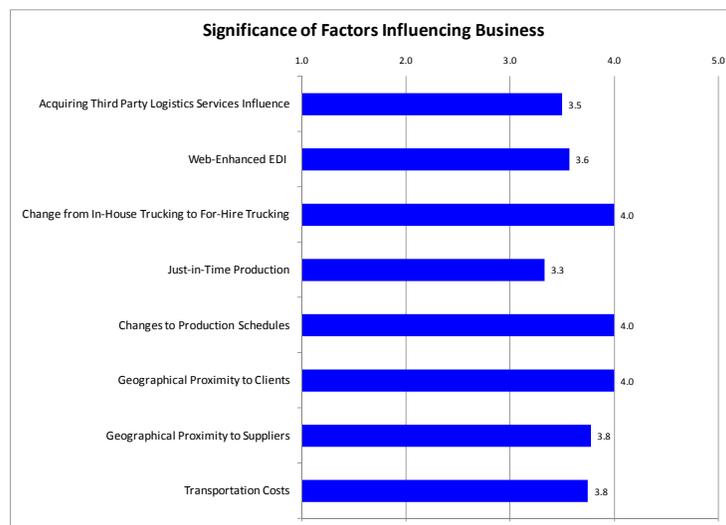


Comments

The reasons for acquiring third party logistics services are to accomplish cost savings and to fulfill supply chain requirements more efficiently. The acquisition of third party logistics services allows the shipper to focus on its core business, while the third party logistics service provider focuses on what they know best—i.e., warehousing, record keeping, and transportation. For example, one participant works with an international third party logistics service provider and therefore has a contact at all times.

1.9 Concluding Remarks

The following figure illustrates the perceived importance of various business factors in shipping decisions—i.e., the shipment size, shipment frequency, and mode of transportation used by shippers.



Scale: 1 – Extremely Insignificant; 2 – Insignificant; 3 – Neutral; 4 – Significant; 5 – Extremely Significant

As is evident from the figure, a change from in-house trucking to for-hire trucking (4.0), changes to production schedules (4.0), and geographical proximity to clients (4.0) were considered significant factors in the participants’ shipping decisions.

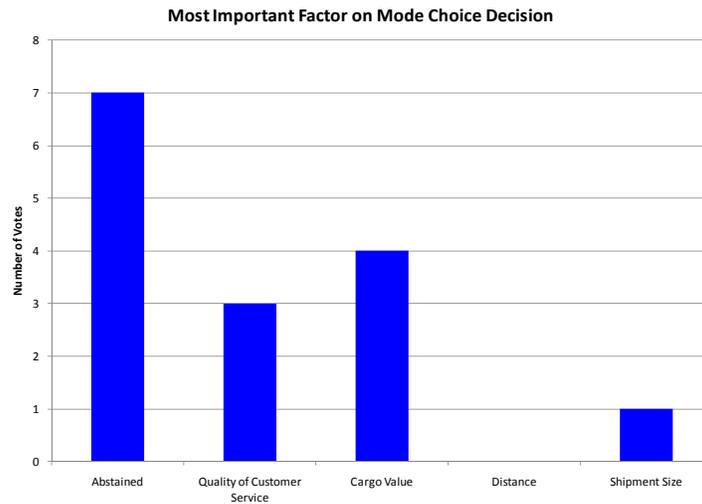
2. Factors that Impact Modal Competitiveness²

2.1 Quality of Customer Service

² Please note that participants were not given the opportunity to rank/comment on the following mode choice factors because of time constraints:

- on-time reliability,
- minimal loss and damage,
- prompt pick-up and delivery,
- availability of cargo tracking,
- partnership with the carrier, and
- flexible service to many markets.

What factor is the most important to your mode choice decision?



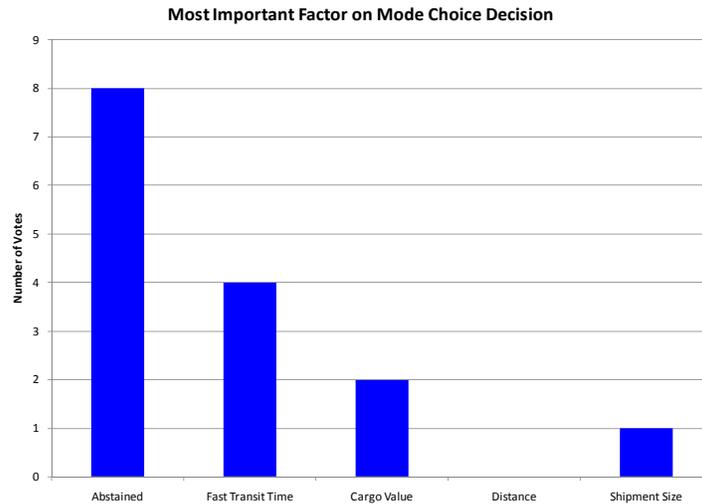
Comments

Some participants felt that there is no tradeoff between quality of customer service and cargo value. They argued that you can insure a shipment financially, but they cannot insure against poor quality of service. It was noted that you can quickly lose a customer when a shipment arrives at the final destination late. The latter affects your relationship with the customer. One participant that mostly ships by truck mentioned that if it were at all feasible he would have preferred to send all shipments by air, because in his perception shipments arrive in better condition and on time when shipped by air compared to truck and rail.

Several participants agreed that the damage incurred is greater when using rail than with other modes, possibly because two to three additional people handle rail shipments. One participant mentioned that they sign their shipping contracts 4 to 6 months in advance of the shipment date. This procedure allows them to plan the best port of entry, conduct a route survey, and go step-by-step through the entire route. Compared to truck, rail is considered too rough for the delicate equipment shipped by the company. This company will not take the risk of having the equipment damaged when it arrives on site. Another issue mentioned was the time needed to ship by rail. The participant noted that the tradeoff is 10 truckloads of a product next week or 1 railcar load 2 weeks from now.

2.2 Fast Transit Time

What factor is the most important to your mode choice decision?



Comments

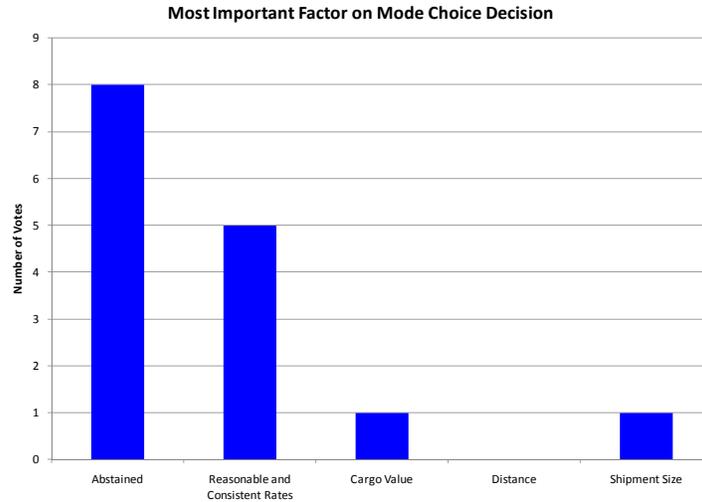
For one participant, fast transit time is not always a factor in the mode choice decision. In this case, the shipment size and cargo value might be the determining factor. For example, a shipment of several tons of material may not be delivered fast anywhere, because it will have to move by barge or rail. If the shipment could, however, be shipped by truck or rail, then often the most important factor in the mode choice decision would be marginal cost.

One participant stated that the first question is always “what is the shipping cost” followed by “how fast it can be delivered.”

In general, however, it was felt that the trucking mode is more likely to be on time and more reliable. Also, some shippers are willing to pay more for delivery if it can be delivered sooner.

2.3 Reasonable and Consistent Rates

What factor is the most important to your mode choice decision?



Comments

For some participants, shipment size is an important factor in the mode choice decision. For example, if the shipment is larger than 13 feet it cannot be shipped by rail. Also, if a shipper has an in-house trucking fleet, the only reason for using/considering another mode would be if the size of the shipment does not allow the company to move it with its own trucking fleet.

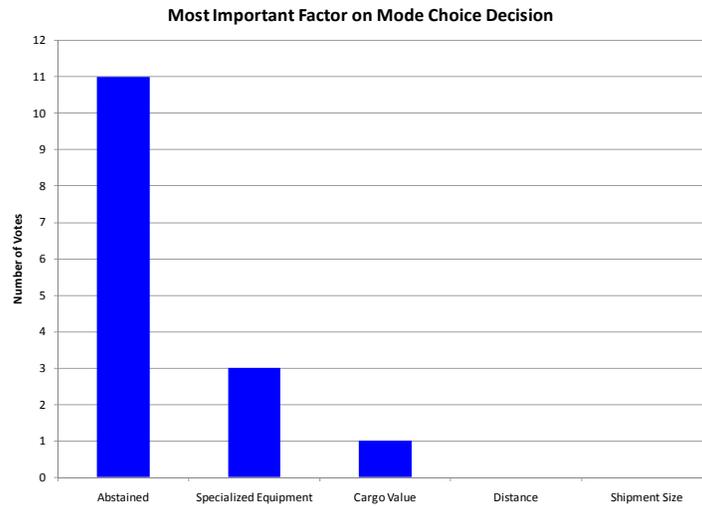
For other participants, the most important mode choice factor is always cost. Furthermore, one participant argued that even if rail and truck travel times were similar, shipping less than 600 miles is more feasible by truck. One participant, however, mentioned that they move specialized equipment and are not looking for any transportation discounts. For this company, it is very important to move equipment without any damage.

For another participant, customer service was severely impacted by delays at the rail yard or port.

Finally, some participants argued that the focus should not be on individual modes, but rather on the combination of modes that will meet customer expectations. For example, companies like UPS use multiple modes without the customer being aware of the different modal combinations. The specific modal choice is less relevant than ensuring customer service and getting the shipment delivered on time. The key issues are the customer’s expectation of the delivery and how the company responds to the customer.

2.4 Specialized Equipment

What factor is the most important to your mode choice decision?



Comments

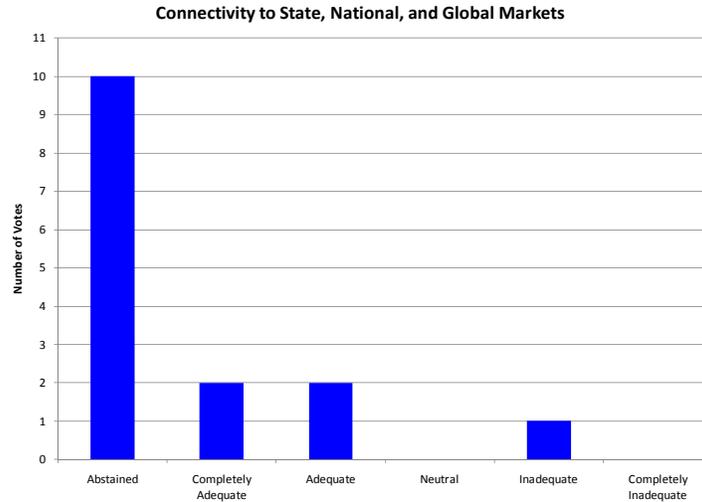
One participant argued that for the commodity that his company transports—i.e., specialized equipment—barge has proven to be the best option. The company looked at a number of other options, including overweight tri-axle trucks moving heavy containers that require a permit and rail. In the case of the rail option, the company had problems with reliability and customer service. On the other hand, updated information is available for where barge shipments are and when the shipments were moved from and to a different mode. Barges were also felt to be a better mode for the transportation of hazardous materials, such as ethanol. The only issues that were raised in terms of barges were the need for the Coast Guard to get involved in the case of a leak and security concerns that have resulted in stricter regulations and the need for credentials to get into ports.

Some participants mentioned that the “loss and damage” incurred with rail shipments is substantially higher than on any other mode. Cargo gets jarred on rail, resulting in substantial loss and damage to shipments. Finally, a number of participants agreed that it was easier to develop a relationship with a trucking company than with the rail.

3. South Texas’s Transportation System

3.1 Connectivity of South Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Connectivity to state, national, and global markets?**



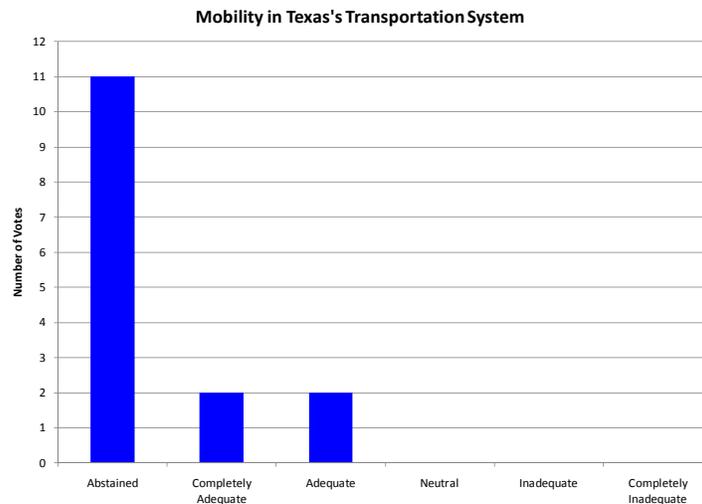
Comments

The perception was that Texas’s transportation system will not be able to keep up with market demand over the next 1 to 3 years, which will impact many shippers negatively. These issues cannot wait for a decade from now to be resolved.

One participant argued that TxDOT should provide more options to shippers for moving overweight freight. It was argued that Georgia and Florida have similar types of economies as Texas, but provide better systems for moving overweight freight. It was also proposed that TxDOT explore the models that have been adopted in the northeast. Specifically, it was cited that Michigan and New York are generating substantial revenues from overweight trucking permits.

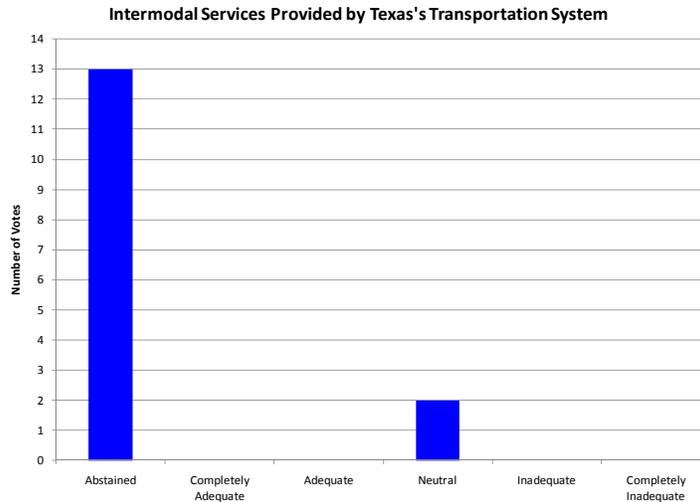
3.2 Mobility in Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **mobility** (e.g., ensuring reasonable travel times)?



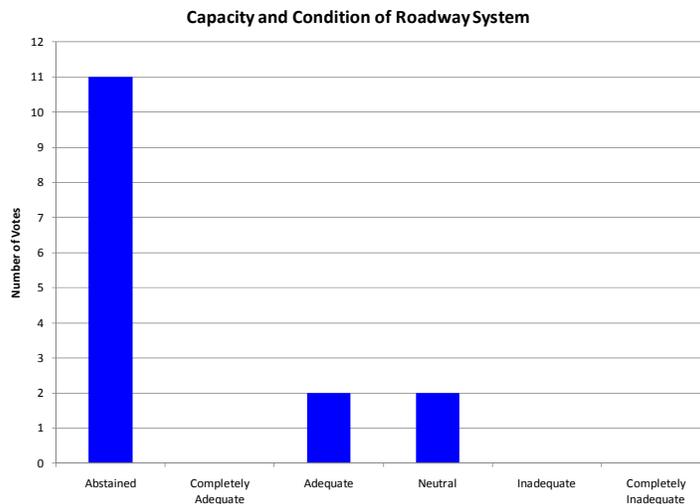
3.3 Intermodal Services Provided by Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Intermodal Services** (air, sea, rail, and/or road)?



3.4 Capacity and Condition of Texas’s Roadway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of Texas roads and highways**?

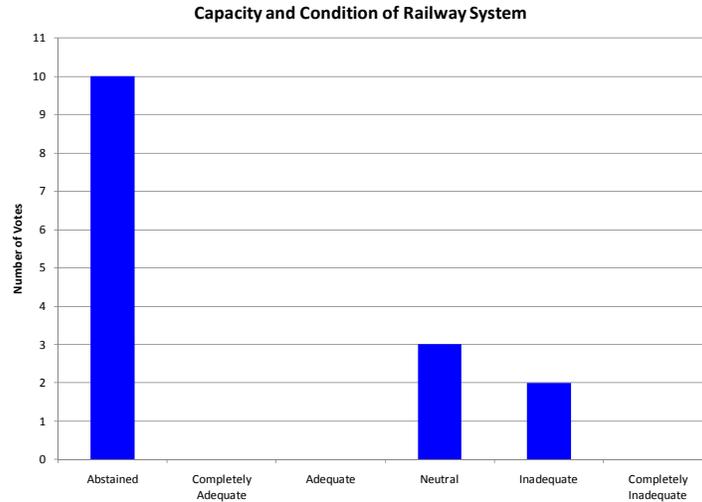


Comments

A number of participants argued the need for overweight corridors to move freight between the ports and the warehousing areas and to divert truck traffic around the city.

3.5 Capacity and Condition of Texas’s Railway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of rail infrastructure**?

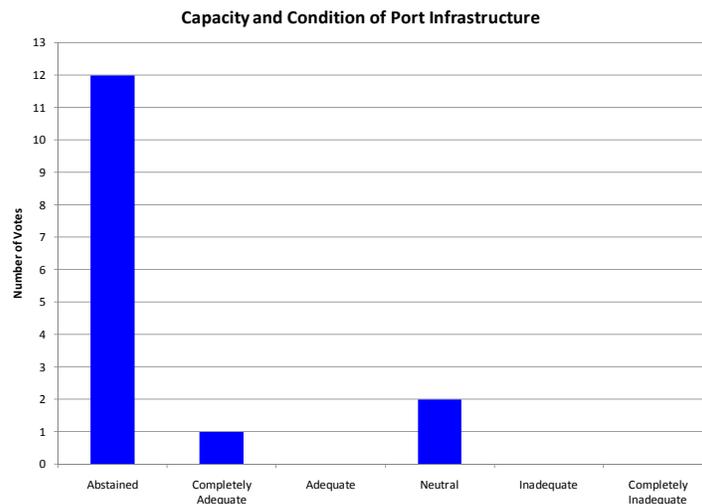


Comments

There was consensus that the railroads needed to be more flexible and improve their customer service: “it is their way or no way.” One participant mentioned that a container can often sit in the rail yard for 3 days before processing starts. Another argued that more equipment is needed if the company wants to use rail instead of truck. For example, for the shipper to use rail, it has to build its own rail spur to the warehouse and pick-up is driven by the rail company. On the other hand, a trucking company will bring a trailer to the warehouse to be loaded at the shipper’s convenience. The participant argued that the railroads should invest in the purchasing of more rail equipment and the building of rail spurs. Finally, some concern was expressed regarding grade crossings.

3.6 Capacity and Condition of Port Infrastructure

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of port infrastructure?**

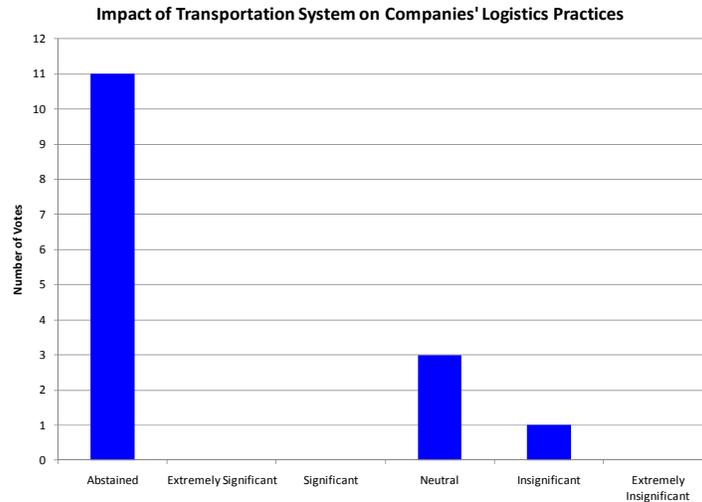


Comments

It was felt that port capacity concerns have been alleviated due to the economic situation in recent years. Also, it was stated that the Barbers Cut Container Terminal could learn from the Port of Savannah in Georgia. It was mentioned that the Port of Savannah stays open late night or over the weekend to handle cargo at no additional cost.

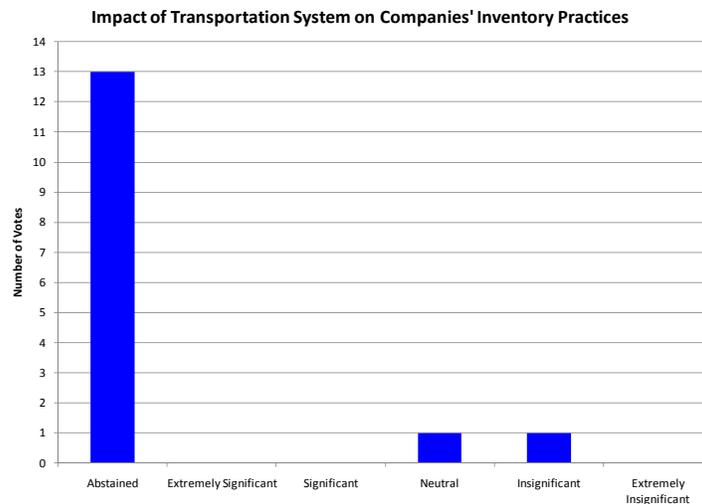
3.7 Impact of Texas’s Transportation System on Companies’ Logistics Practices

How has Texas's transportation system impacted your companies' logistics practices?



3.8 Impact of Texas's Transportation System on Companies' Inventory Practices

How has Texas's transportation system impacted your companies' inventory practices?

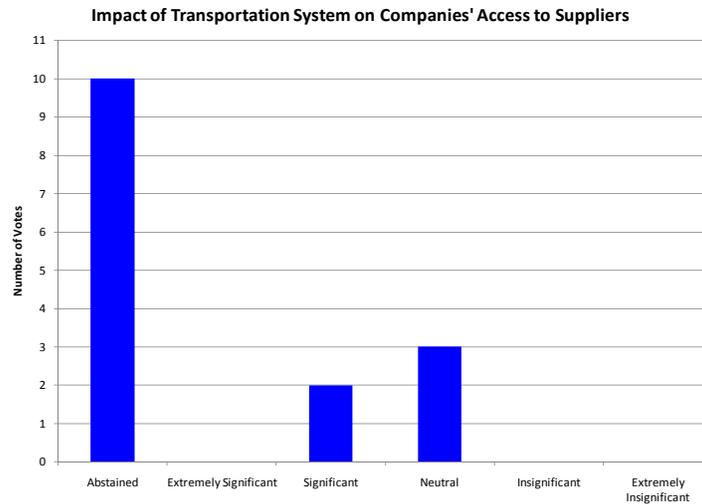


Comments

For one participant, inventory tax is a big issue; to avoid paying this tax, their product is shipped to Los Angeles or New Mexico.

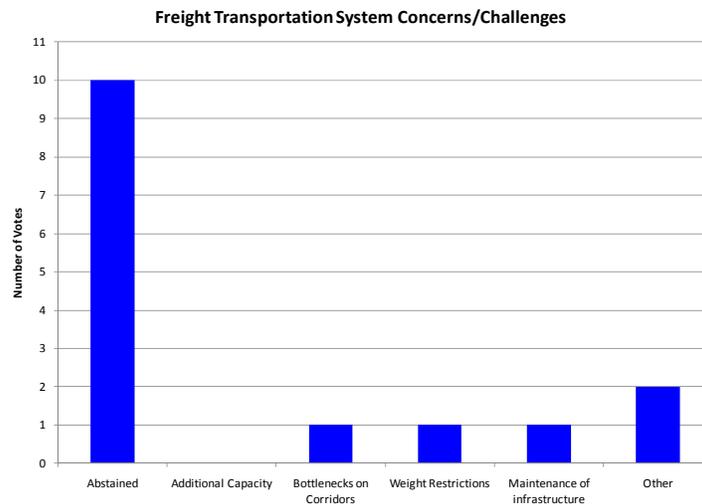
3.9 Impact of Texas's Transportation System on Companies' Access to Suppliers

How has Texas's transportation system impacted your companies' access to suppliers?



3.10 Freight Transportation System Concerns/Challenges

What are your **major concerns/challenges** concerning Texas's freight transportation system as it pertains to your business?

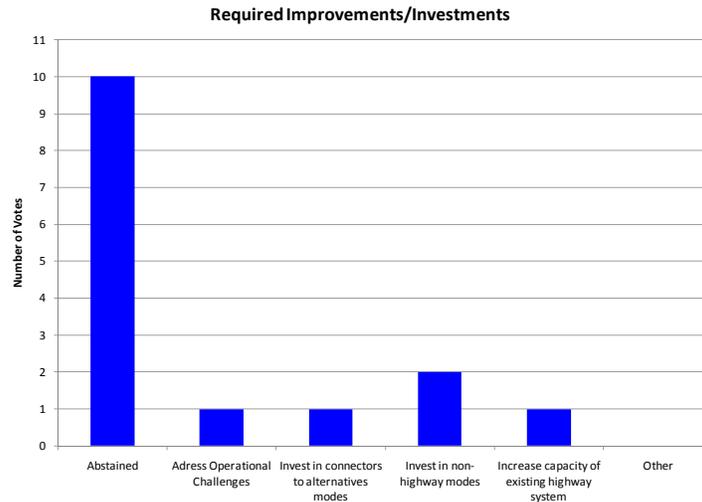


Comments

The most important concern/challenge is securing the necessary funding for Texas's freight transportation system. Other concerns/challenges included (a) a need for dedicated truck lanes, (b) a need to address highway bottlenecks, and (c) reducing driver distraction on major highways, such as US 290, IH 10, and IH 45.

3.11 Required Improvements/Investments

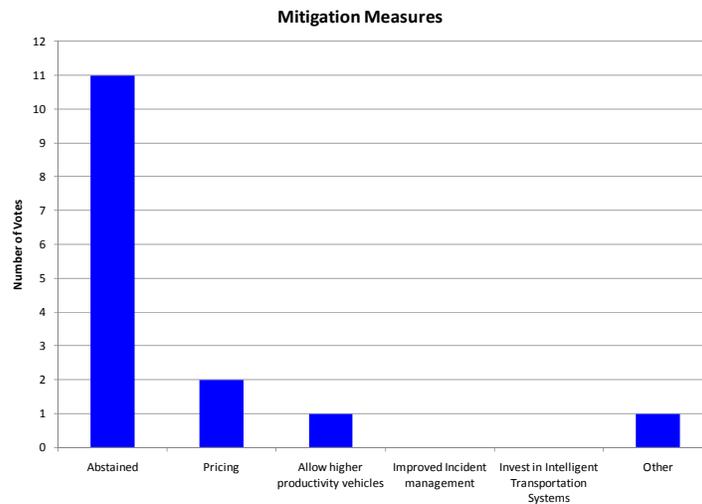
What **investments** are required to remedy infrastructure concerns/challenges?



One participant argued for investing in a rail corridor—similar to the Alameda Corridor that serves Los Angeles/Long Beach—to move cargo from the port of Houston to a distribution center to the west of the city, from where cargo can then be distributed to the rest of the state.

3.12 Required Mitigation Measures

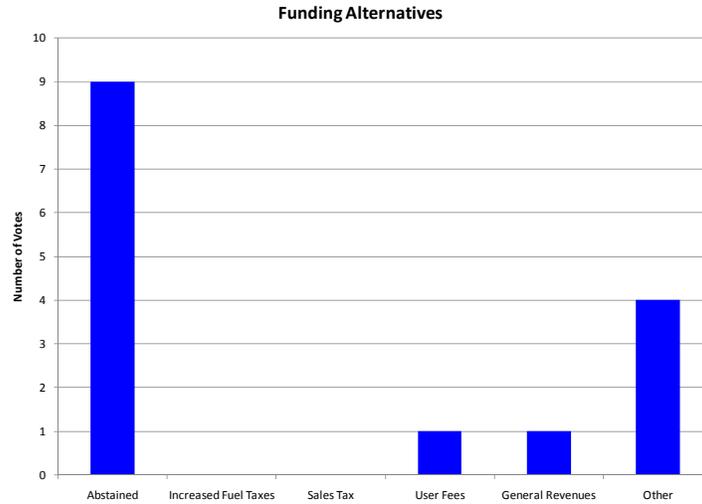
What **measures** are required to remedy operational concerns/challenges?



One participant recommended that the number of permitting personnel be increased as currently it takes on average 6 weeks to obtain a permit.

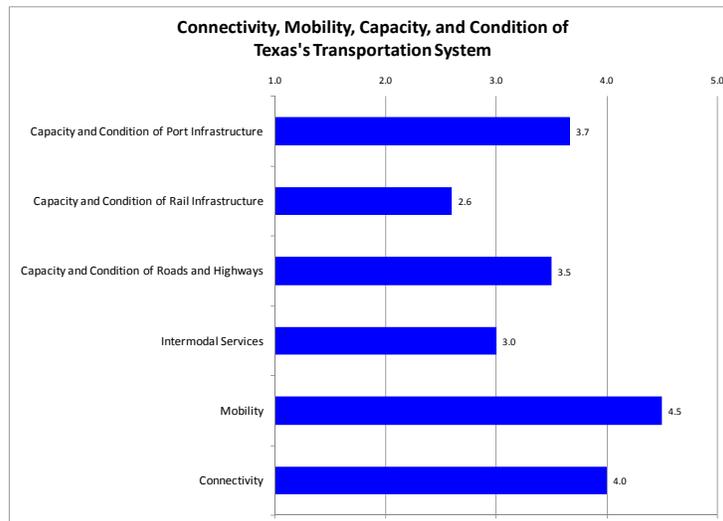
3.13 Funding Alternatives

How should improvements to Texas's transportation system be funded?



3.11 Concluding Remarks

The following figure illustrates the participants’ perceptions of the adequacy of Texas’s transportation infrastructure. As can be seen mobility (4.5) and connectivity (4.0) were rated adequate to extremely adequate. The capacity and condition of roads and highways (3.5) and ports (3.7) were rated neutral to adequate. The capacity and condition of rail infrastructure (2.6) were, however, rated neutral to inadequate.



Scale: 1 – Completely Inadequate; 2 – Inadequate; 3 – Neutral; 4 – Adequate; 5 – Extremely Adequate

**West Texas Region
El Paso**

El Paso TxDOT District Office

13301 Gateway West Blvd.

El Paso, TX 79928

Thursday, November 12, 2010

Introduction: West Texas Region

The West Texas Region workshop began with a presentation to provide the context in which states have been conducting statewide freight planning. The presentation highlighted the federal laws that require statewide freight planning, the approaches taken by other State Departments of Transportation, and some of the challenges in conducting statewide freight planning. Against this background, the CTR research team subsequently presented the objectives of the current TxDOT research study 0-6297. The presentations were followed by a demonstration on the usage of the Iclicker. Participants were then presented with a number of questions/statements in three categories: (1) business factors that influence the size, frequency, and mode of transportation used by shippers, (2) mode choice factors impacting freight transportation, and (3) the identified transportation needs in the West Texas Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the West Texas Region workshop:

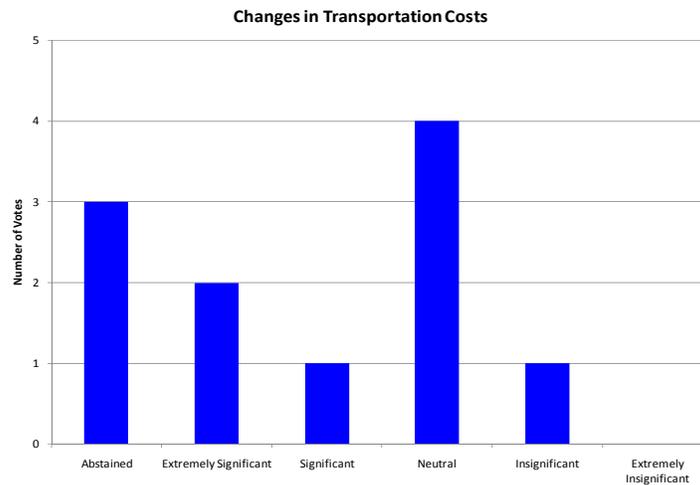
- Borderland Mobility Coalition (1)
- TxDOT El Paso (4)
- W. Silver, Inc. (1)
- El Paso MPO (1)
- International Bridges City of El Paso (1)
- MSD Ignition (1)
- City of El Paso (1)
- J.H. Ross Logistics (1)
- Stagecoach Cartage & Distribution, LP. (1)

Workshop Discussions

1. Business Factors Considered in Shipping Decisions

1.1 Changes in Transportation Costs

How have **changes in transportation costs** impact shipments delivered to/shipped by your company?

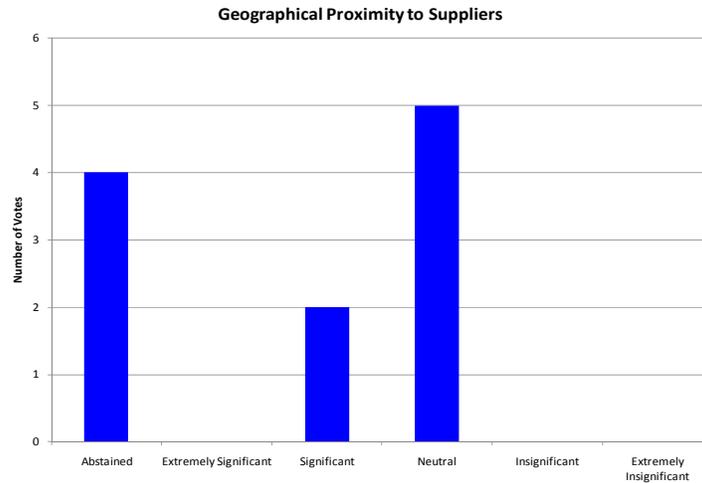


Comments

One participant argued that transportation cost is the primary variable in decision-making because the lead times of different transportation companies tend to be similar. This participant shipped nationwide and received inputs from France, as well as national suppliers. Another participant mentioned that recently implemented fuel surcharges have reduced the company's shipments of less-than-truckload and partial shipments by UPS and FedEx.

1.2 Geographical Proximity to Suppliers

How does **geographical proximity to your suppliers** impact the shipments delivered to your company?

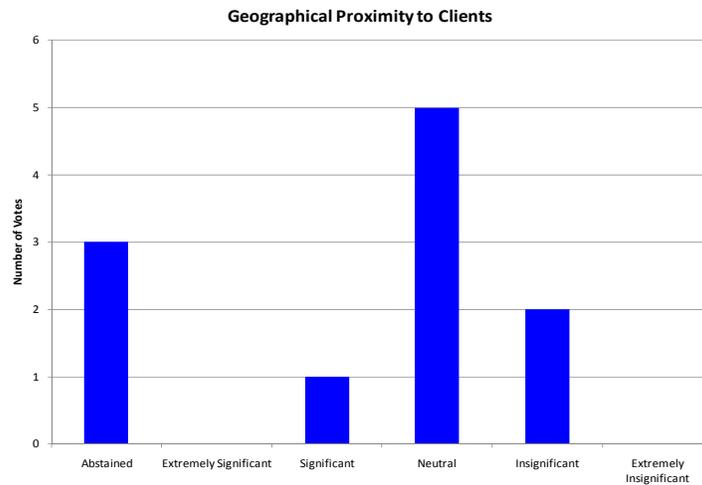


Comments

This factor was not considered significant. No concerns were expressed about geographic proximity to suppliers, because El Paso shippers were captured in a “freight island.” Most El Paso shippers use trucks exclusively. Finally, 80% of truck traffic in the area was claimed to originate in the area.

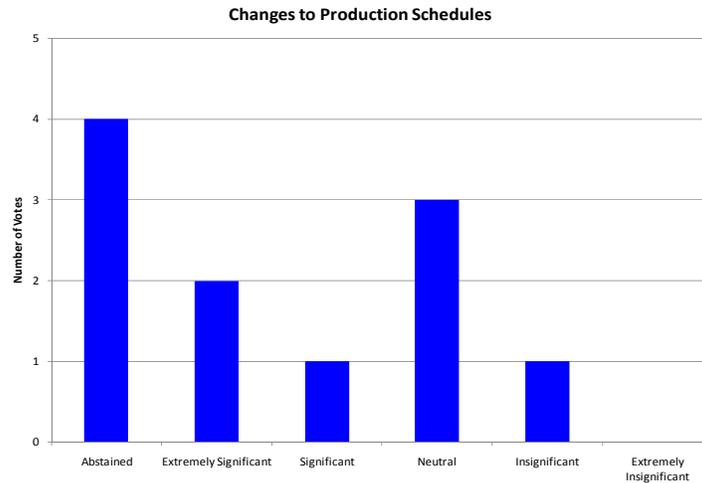
1.3 Geographical Proximity to Clients

How does **geographical proximity to your clients** impact shipments shipped by your company?



1.4 Changes to Production Schedules

How would **changes to your production schedules** impact shipments received/shipped by your company?



Comments

One participant reported that sales go up in March and April, but that December is a very slow month. Temporary workers are hired during the peak season and terminated during the off-peak season.

Another participant mentioned that certain times of the year cargo is diverted to rail because of production schedules.

In El Paso, the recession has impacted the construction (i.e., housing) and shipping industries. Also, high fuel prices have resulted in many carriers going out of business. Some logistics companies have attempted to diversify their services. It is, however, difficult in the current climate because everyone is watching their bottom line.

1.5 Change from In-House Trucking to For-Hire Trucking

How did/would a **change from in-house trucking to for-hire trucking** impact shipments shipped by your company?

No voting was conducted on topic, but participants provided their comments.

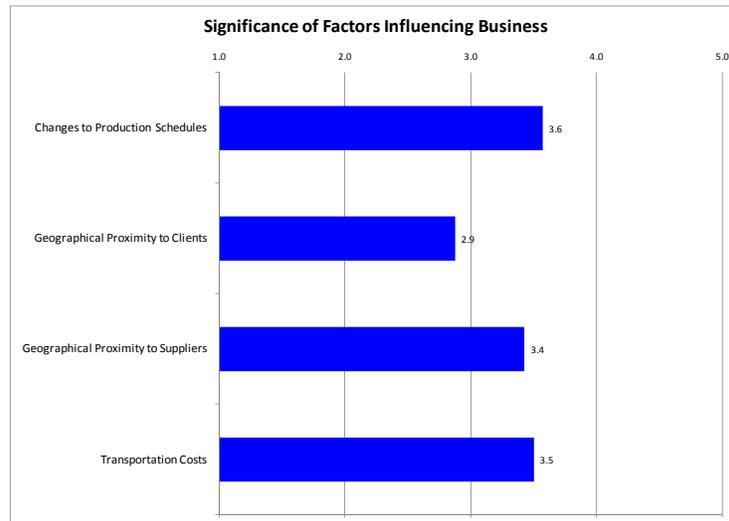
In the case of one participant who shipped less-than-truckload shipments, an in-house trucking fleet did not make sense because of varied destinations and small volumes. This company works with approximately 100 trucking companies in El Paso and 600 carriers nationwide.

On the other hand, another participant mentioned that one of the benefits of an in-house trucking fleet is that the truck is available whenever it is needed. For-hire trucking services, although reliable, are not always as instant. The disadvantages are having to secure a return load and insurance requirements (i.e., Federal Insurance Contributions Act).

Another participant used both in-house and for-hire trucking services. The latter is used for shipments with destinations in excess of 300 miles.

1.6 Concluding Remarks

The following figure illustrates the perceived importance of various business factors in terms of influencing the shipment size, shipment frequency, and mode of transportation used by shippers. As can be seen, changes to production schedules (3.6), transportation costs (3.5), and geographical proximity to suppliers (3.4) are considered neutral to significant. Of slightly less significance was the geographical proximity to clients (2.9). Participants argued that the transportation system allows for shipments to be delivered to virtually any destination.



Scale: 1 – Extremely Insignificant; 2 – Insignificant; 3 – Neutral; 4 – Significant; 5 – Extremely Significant

2. Factors that Impact Modal Competitiveness

2.1 Transportation Costs

For international shipments, equipment availability is a significant factor in mode choice decisions; for domestic shipments, however, *price/cost* is the major factor. Also, one participant mentioned that demurrage costs on ocean containers are an important consideration in intermodal operations. For example, demurrage on an ocean container is imposed after 3 days, but it can take 4 to 6 days to unload a container. This results in an additional \$100 being billed to the transportation service provider. Some of the principal ports, i.e., Los Angeles and Long Beach, have started to implement clean truck initiatives and Pier-pass fees for picking up containers during the day time, which have resulted in additional costs.

When asked whether recent high fuel prices resulted in a diversion of truck traffic to rail, most respondents responded that the railroads did not have the capacity to handle more shipments. Furthermore, rail does not have the flexibility to ramp up and ramp down as trucking companies can.

2.2 Commodity Characteristics

Mode choice decisions are also often driven by the value of the commodity. For example, a lower value commodity, such as cardboard, is a good candidate for intermodal movements. Also, the preferred mode of transportation for beer is rail, because revenue margins are small. Some car parts from China are also shipped by rail to El Paso and then trucked to the final destination.

Other commodities, such as appliances (i.e., Electrolux) are shipped by both truck and rail. For example, if delays cannot be afforded the shipment are moved by truck. However, Electrolux also ships by rail if longer distances are involved. Televisions are also moved by rail, but computers are moved by truck. For example, Dell pays a premium for trucking its commodity. This is largely because of theft concerns—i.e., not damage. Rail is perceived to be less secure than truck from a theft perspective. LCD projectors are also mostly moved by truck. Finally, floor tile is typically not moved by rail, because of lost and damage. More jostling occurs in the case of rail, which can result in damage to commodities.

2.3 Travel Time

Although truck or rail vehicles are often considered by shippers as “*a warehouse on wheels*,” speed is considered important in today’s economy. For example, a participant remarked that when Union Pacific experiences delay, it may require 2 additional days for a customer to recover a container. On the other hand, in the case of trucking, a team driver arrangement can deliver a container anywhere in the U.S. in 48 hours.

Some participants argued that wait times at the international bridges are an important factor for shippers considering how and when the product is going to be shipped. These participants claimed that both northbound and southbound trucks are being increasingly scrutinized, resulting in a significant decrease in the number of trucks crossing city-owned bridges. Inspections (i.e., for guns and cash) that were not accounted for in the design of the border are resulting in traffic lines backing up dangerously on IH 10 and Loop 375. On the Mexico side, although it is anticipated that southbound vehicles can be inspected in line in 17 seconds per vehicle, there are concerns that these inspections will exaggerate the current problems experienced on the U.S. side of the border. These participants claimed that trucks are crossing to the east and south of El Paso. The effects on the region are currently being studied by Cambridge Systematics. Participants also argued that excessive wait times impact surrounding neighborhoods by creating a health hazard and called for a study to quantify the air quality and health impacts of excessive queuing at the border crossings.

On the other hand, some of the other participants argued that a company cannot participate in any significant international trade if they do not belong to the CTPAT program. Also, these participants felt that the additional restrictions have not significantly impacted the El Paso crossings and that all crossings to the east and west of El Paso experience similar problems.

Finally, there was some agreement that the violence in Juarez has impacted cross border movements significantly. Although the situation has resulted in a decrease in the number of northbound passenger vehicle crossings, one participant pointed out that many people moved to El Paso, which has benefited the El Paso economy.

2.4 Reliability/Customer Service

In general, it was agreed that east–west rail shipments are very reliable. Some participants mentioned that although the rail service is good, rail shipments can take a long time to clear customs.

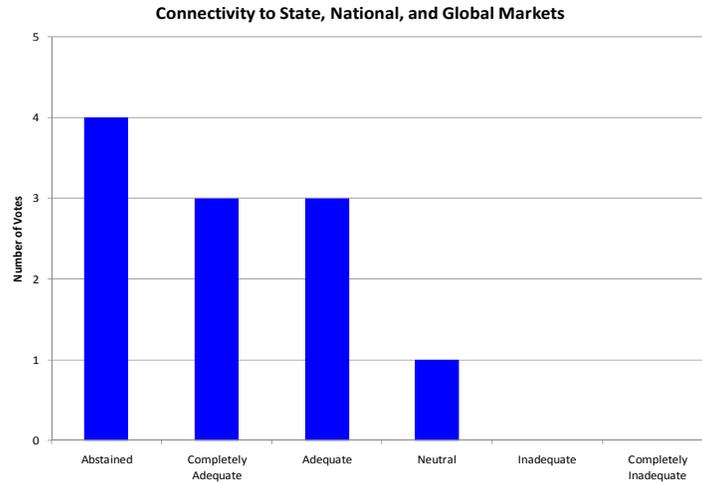
Some participants, however, felt that UP’s customer service can be improved. It was pointed out that UP interacts far less with shippers than the trucking companies. Also, it was argued that UP does not book any cargo directly. Unless it is a high volume shipment, UP uses third parties to

book the cargo. For example, one participant mentioned that JB Hunt helps shippers decide the best mode given shipper needs and service pricing.

3. South Texas’s Transportation System

3.1 Connectivity of South Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Connectivity to state, national, and global markets?**

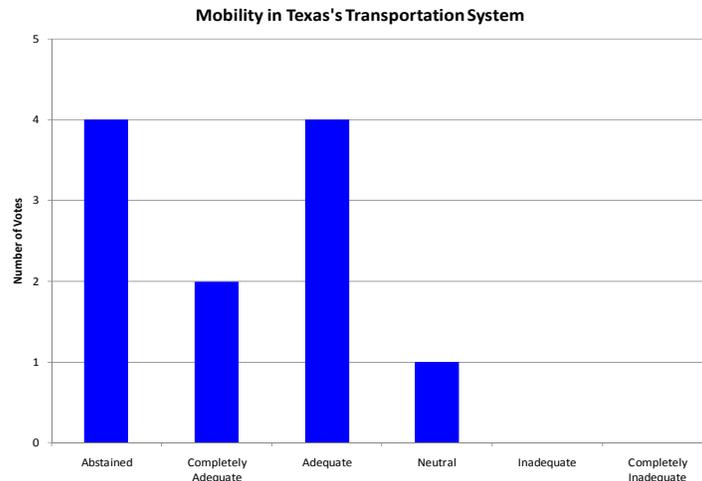


Comments

Most participants agreed that connectivity is not a major issue in the El Paso region. Traffic in the region is rather negligible compared to a number of other Texas cities. One potential issue—i.e., a relief route for IH 10—is currently being planned by the city of El Paso.

3.2 Mobility in Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **mobility** (e.g., ensuring reasonable travel times)?

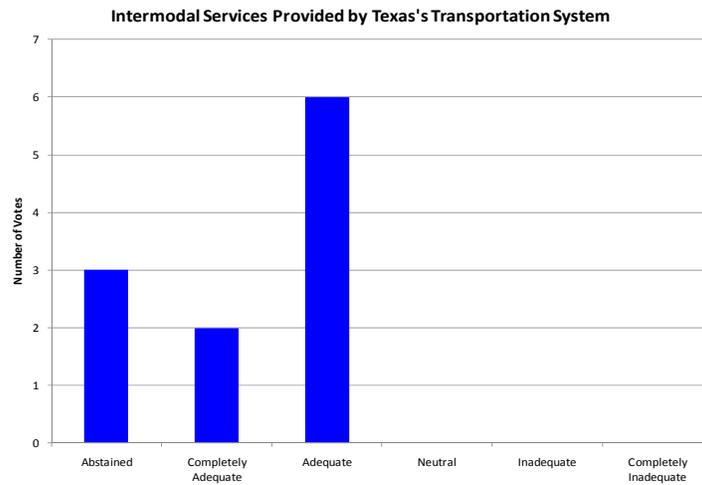


Comments

Peak travel times are 7:30 a.m. to 9:00 a.m. Delays are experienced crossing northbound at Zaragoza during the lunch hour, mainly because people are picking up kids from school. Southbound delays at Zaragoza are minimal until about 1:00 p.m. as a result of production schedules and delivery schedules from the Ports of Los Angeles and Long Beach.

3.3 Intermodal Services Provided by Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Intermodal Services** (air, sea, rail, and/or road)?

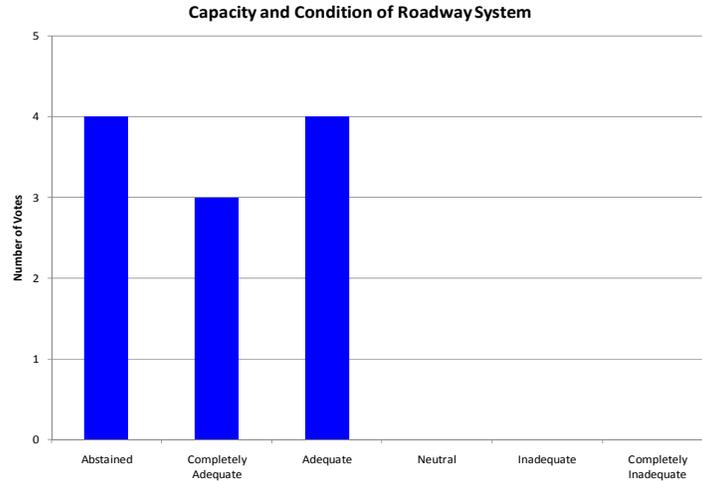


Comments

It was felt that trucking capacity in the region exceeds demand, resulting in substantial flexibility when ordering trucking services in El Paso.

3.4 Capacity and Condition of Texas’s Roadway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of Texas roads and highways?**

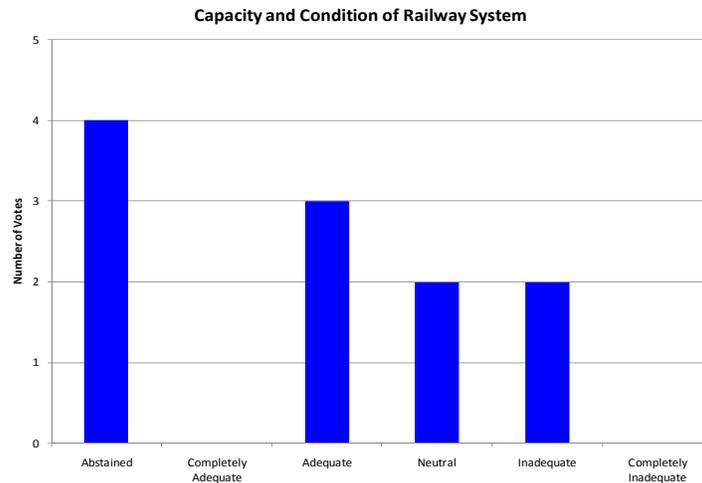


Comments

The major Texas roads and highways in the region were found to be in good condition by a study performed by the University of Texas at El Paso.

3.5 Capacity and Condition of Texas’s Railway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of rail infrastructure?**



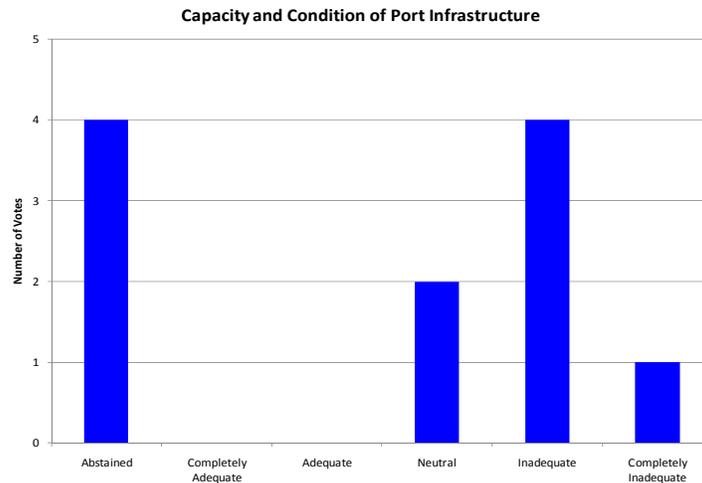
Comments

Significant rail delays are experienced in the city of El Paso, because the location of the yards is antiquated. Also, the yards and the track are in poor condition, with insufficient lanes for trucks to access the downtown rail yards. One participant mentioned that BNSF’s single track line impacts the area. The BNSF siding length is one mile. It was claimed that BNSF was trying to sell their track from Belen to El Paso for \$91 million, because BNSF serves only five customers on that line.

Finally, it was mentioned that there is no funding for rail relocation in El Paso and UP has postponed their planned intermodal project—also because of a lack of funding. One participant mentioned that although there is some rail business in the area, no substantial rail car volumes originate in the city. There is also evidence that rail freight is being diverted to trucks.

3.6 Capacity and Condition of Port Infrastructure

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of port infrastructure?**



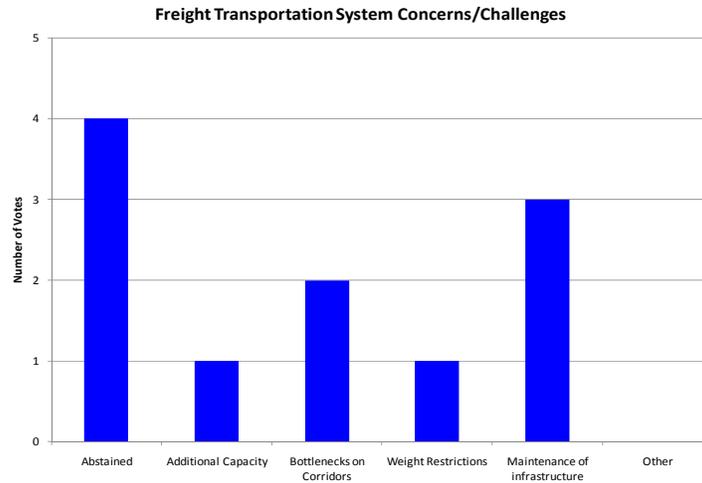
Comments

The border port of entry concerns related to both operational and infrastructure problems. For some crossings, the infrastructure existed, but the crossings were not fully operational. Also, the requirements for southbound inspections have resulted in vehicles being backed up on Loop 375, because the ports were never designed to accommodate these inspections. This is an infrastructure problem that had to be addressed in some instances with local dollars. Other participants pointed out that even if the infrastructure was fully utilized, another bridge is still needed because of the anticipated growth of Juarez and where the growth is occurring. It was pointed out that when Zaragoza was built in 1990, it reached capacity in about 10 years. This is partly attributable to the fact that the presidential permitting of a new bridge can be a very lengthy process.

Some participants felt that the Panama Canal expansion is a development that needs to be monitored. Currently, about 48 west–east trains traverse El Paso and this number is projected to increase to 60 trains. However, the Gulf Coast ports (e.g., Port of Houston and Galveston) are hoping to divert some traffic from Los Angeles/Long Beach via the expanded Panama Canal. This will result in a decrease in West-East rail movements, which could potentially change the distribution patterns in El Paso.

3.7 Freight Transportation System Concerns/Challenges

What are your **major concerns/challenges** concerning Texas's freight transportation system as it pertains to your business?



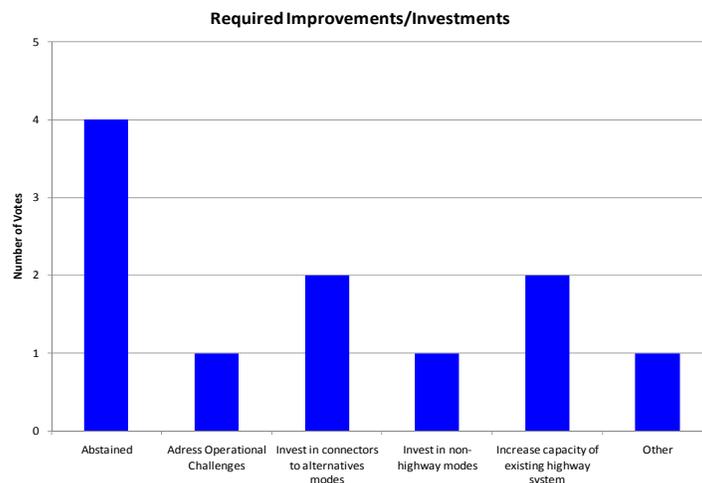
Comments

Bottlenecks are mostly experienced at the border. The Bridge of the Americas (BOTA) had to be rebuilt due to overweight trucks crossing the bridge. A scale was installed during the re-build and currently any truck over 80,000 pounds is routed through Santa Teresa.

One participant mentioned the need to increase the hours of operations of the ports of entry. Another participant mentioned that a pilot study to increase the port of entry hours of operation to 24 hours failed. The Metropolitan Planning Organization has established a sub-committee on trade between the two cities of El Paso and Juarez to explore this issue, among others.

3.8 Required Improvements/Investments

What **investments** are required to remedy infrastructure concerns/challenges?



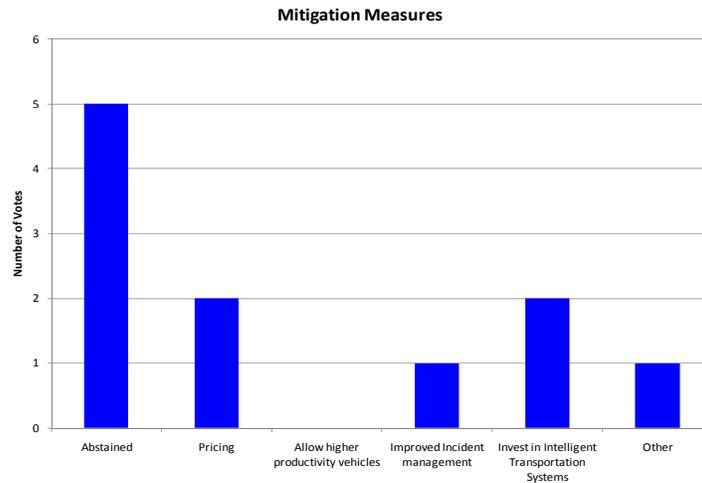
Comments

Some participants felt that there is no sense in discussing required investments until the funding for it has been established. In terms of operational improvements, it was pointed out that 90% of

the signals in El Paso are synchronized. The benefits of additional operational improvements are thus decreasing.

3.9 Required Mitigation Measures

What **measures** are required to remedy operational concerns/challenges?

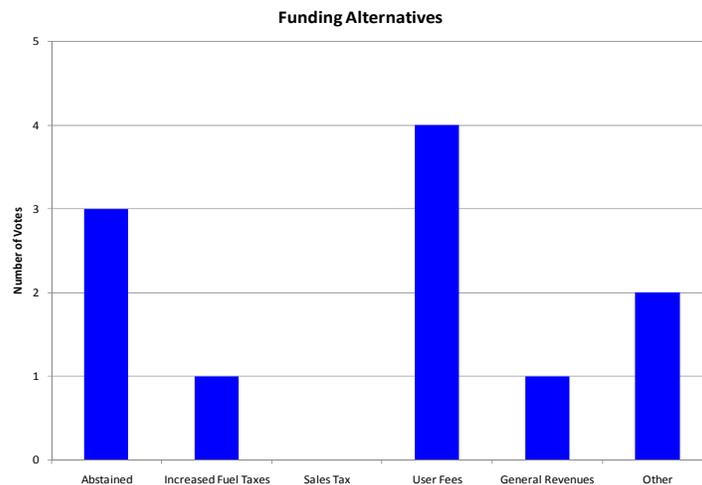


Comments

Some participants felt that there is not much support for tolling in El Paso. Others felt that toll roads will be viable if the users have a choice. Some participants felt that shippers could probably absorb the cost of the toll paid by the trucking company. Others pointed out that the toll from Monterrey to Saltillo is \$15, but that trucking companies do not use the toll road. In general, it was felt that more coordination between agencies is needed in conceptualizing and implementing mitigation options.

3.10 Funding Alternatives

How should improvements to Texas's transportation system be funded?

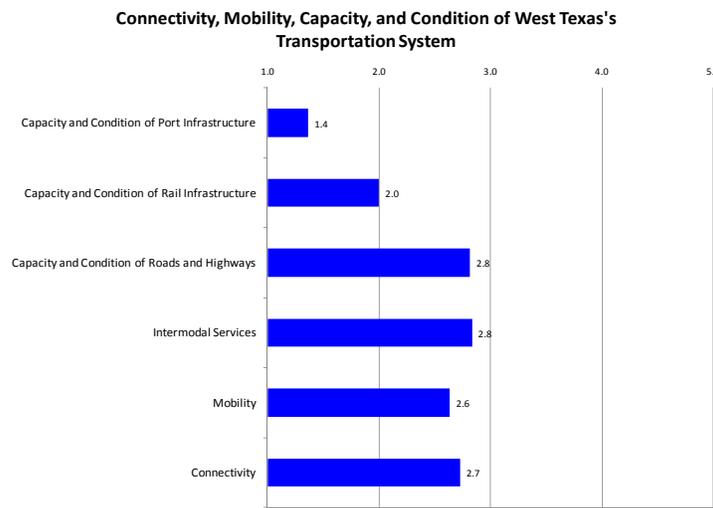


Comments

It was felt that the political will does not exist in Texas to increase fuel taxes. Others pointed out that any fuel tax increase will just be passed on to the consumer.

3.11 Concluding Remarks

The following figure illustrates the participants' perceptions of the adequacy of Texas's transportation infrastructure. As can be seen the capacity and condition of the roads and highways (2.8), intermodal services, and connectivity were perceived inadequate to neutral. However, of more concern were the capacity and the condition of the rail infrastructure (2.0)—which was regarded as inadequate—and the capacity and condition of the port of entry infrastructure (1.4), which was rated between inadequate and completely inadequate.



Scale: 1 – Completely Inadequate; 2 – Inadequate; 3 – Neutral; 4 – Adequate; 5 – Extremely Adequate

**Panhandle Region
Lubbock**

Lubbock TxDOT District Office

135 Slaton Road

Lubbock, TX 79404

Thursday, December 3, 2009

Introduction: Panhandle Region

The Panhandle Region workshop began with a presentation to provide the context in which states have been conducting statewide freight planning. The presentation highlighted the federal laws that require statewide freight planning, the approaches taken by other State Departments of Transportation, and some of the challenges in conducting statewide freight planning. Against this background, the CTR research team subsequently presented the objectives of the current TxDOT research study 0-6297. The presentations were followed by a demonstration on the usage of the Iclicker. Participants were then presented with a number of questions/statements in three categories: (1) business factors that influence the size, frequency, and mode of transportation used by shippers, (2) mode choice factors impacting freight transportation, and (3) the identified transportation needs in the Panhandle Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the Panhandle Region workshop:

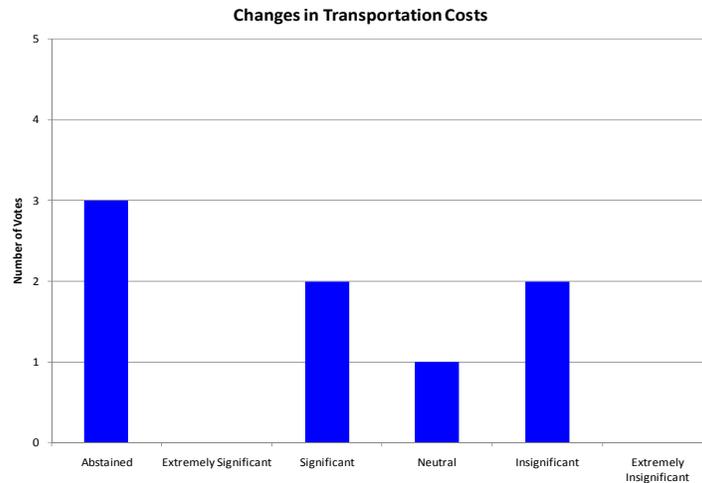
- Ports-to-Plains Alliance (1)
- FHWA (1)
- Plains Cotton Cooperative Association (1)
- Lubbock MPO (1)
- Reese Technology Center (2)
- Texas Tech University (2)
- United Market (1)

Workshop Discussions

1. Business Factors Considered in Shipping Decisions

1.1 Changes in Transportation Costs

How have **changes in transportation costs** impact shipments delivered to/shipped by your company?

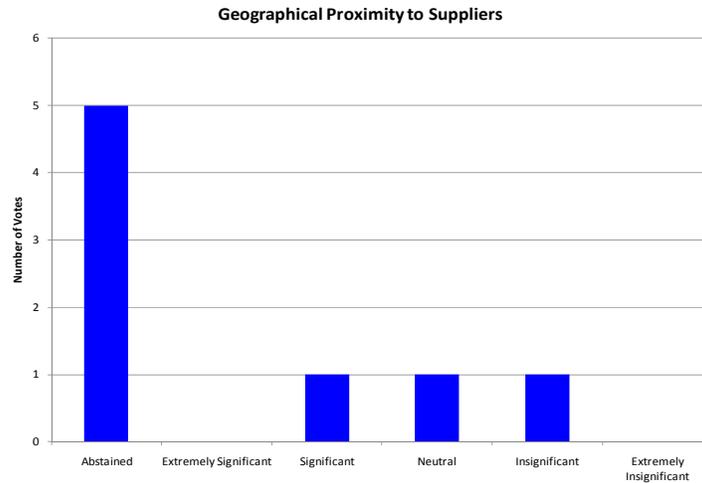


Comments

Changes in transportation costs often result in the procurement of services from a transportation service provider that the company may not be familiar with. In the first quarter of 2010, ocean carriers increased their costs by up to \$300 per container. The Panhandle is exporting raw cotton to Turkey, Mexico (20%), China, and Indonesia. In general, the U.S. is a residual shipper of cotton—i.e., most cotton is sold directly to local merchants. The Panhandle Region accounts for approximately 70% of the cotton produced in Texas. Cotton exports from the Panhandle Region are growing. Most of the export cotton is currently destined for Turkey, because of outstanding relationships with agents in Turkey.

1.2 Geographical Proximity to Suppliers

How does **geographical proximity to your suppliers** impact the shipments delivered to your company?

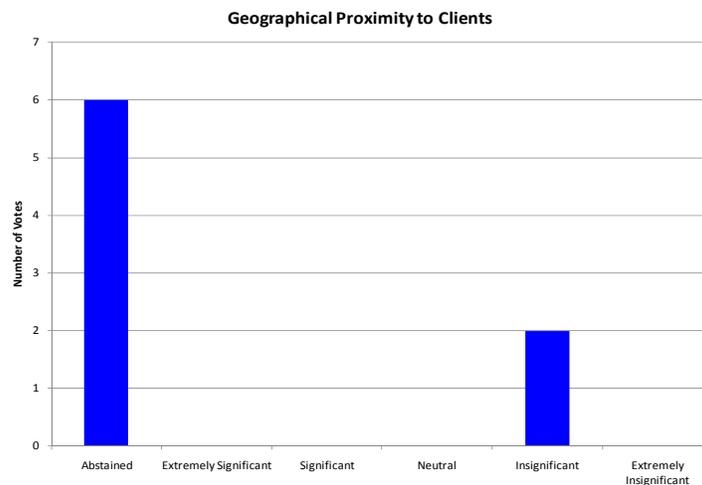


Comments

One participant mentioned that the company’s location considered its suppliers—i.e., it located close to the material source. Another participant mentioned that transportation variables determine the location of its companies, i.e., x miles from an interstate, x miles from a major highway, etc. Lubbock is very centrally located in the U.S.

1.3 Geographical Proximity to Clients

How does **geographical proximity to your clients** impact shipments shipped by your company?

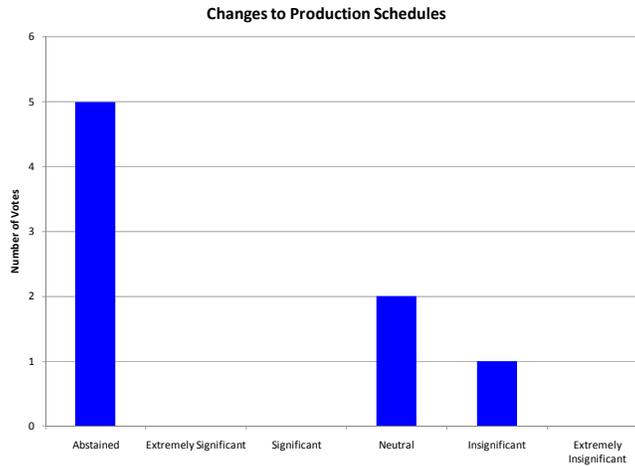


Comments

Only one participant mentioned that the company is located near its customers.

1.4 Changes to Production Schedules

How would **changes to your production schedules** impact shipments received/shipped by your company?



Comments

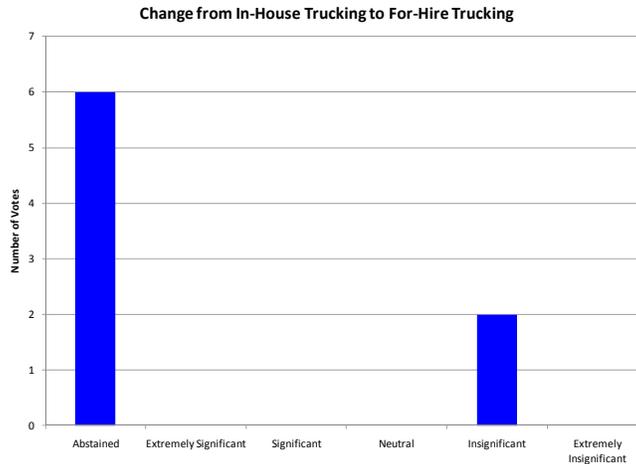
The agriculture industry is seasonal; when it is harvest season, a lot of product is shipped.

Another participant mentioned that there is a 2-year backlog on wind energy component deliveries to the region. Wind components that were ordered 2 years ago are only now delivered to the area. The financial market, however, has changed since 2 years ago and most wind components currently being delivered are stored at a facility in town that has rail access.

Wind components are shipped from Houston and Corpus Christi to the region. Most wind developers want to use rail for the movement of the blades and towers, but the shipments can only go as far as the rail track. Eventually it has to be trucked to the final destination. A number of wind component manufacturers decided not to locate at the Reese Technology Center because rail access is not available at the location.

1.5 Change from In-House Trucking to For-Hire Trucking

How did/would a **change from in-house trucking to for-hire trucking** impact shipments shipped by your company?



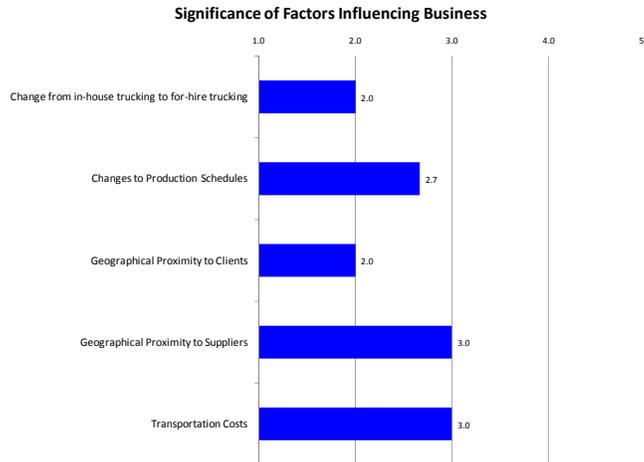
Comments

One participant uses four to five preferred carriers, depending on shipment size. Cotton destined for Turkey is moved by flatbed to the port warehouse in Houston. Cotton destined for the West Coast is trucked to Dallas, containerized, and then shipped by rail to the West Coast ports. In Houston, shippers often have a problem obtaining empty containers. In Dallas, there have never been any problems obtaining empty containers. Cost-wise, it was argued that moving cotton is cheaper by flatbed truck than in a container.

Another participant has an in-house trucking fleet and uses third party carriers. This participant relies on third party carriers during peak months, for example, Thanksgiving and Christmas. The third party carriers usually conduct the out-of-state trips and the company’s own drivers the in-state trips. The availability of backhaul cargo is an important decision criterion when considering the use of third party contractors.

1.6 Concluding Remarks

The following figure illustrates the perceived importance of various business factors in terms of influencing the shipment size, shipment frequency, and mode of transportation used by shippers. As can be seen transportation costs (3.0) and geographical proximity to suppliers (3.0) were considered the most important factors in the shipping decisions of shippers.



Scale: 1 – Extremely Insignificant; 2 – Insignificant; 3 – Neutral; 4 – Significant; 5 – Extremely Significant

2. Factors that Impact Modal Competitiveness³

2.1 Transportation Costs

In the case of the grocery industry, shipping decisions are always driven by time and cost. Some product is also perishable, which is a very specialized business. All equipment used in grocery shipping has tracking devices. At the same time, there are many financial considerations when shipping groceries, because payment is often not on time.

For the cotton industry, shipping by rail only makes sense when shipments are destined for the eastern U.S. or the Far East. When delivering to the West Coast, the product is trucked to Dallas, containerized, and then shipped by rail. The cotton industry has never shipped by rail to the Gulf Coast ports. Costs were cited as the main reason for not sending cotton shipments by rail, i.e., the rail costs would be almost twice the trucking costs. Participants also pointed out that the rail companies want shippers to guarantee a minimum of four unit trains, which can be challenging at times.

2.2 Rail Access

Another issue for shippers in the region is access to rail service. The current container yard provides priority to the yard owner’s shipments. Rail is therefore not a feasible mode for the cotton industry.

Reese Technology Center aspires to have multi-modal transportation options and is working to develop rail infrastructure. However, guaranteeing the usage of rail is a challenge. Although cotton is a big economic generator in the region, Reese Technology Center is working to diversify the economy and attract other businesses to locate in the Foreign Trade Zone.

Participants also argued that the Class I lines are operating near capacity and because the cost of rail capital investments are high, the Class I lines are not considering expanding rail infrastructure in unknown areas.

³ Please note that participants did not use the Iclicker to rank the mode choice factors, but a discussion of the factors ensued and the salient remarks are recorded in this section of the document.

2.3 Reliability

For the cotton industry, travel time reliability is pertinent to ensure the shipment arrives prior to vessel departures. Failure results in steep demurrage charges. Participants felt that rail is reliable dispatching from Dallas.

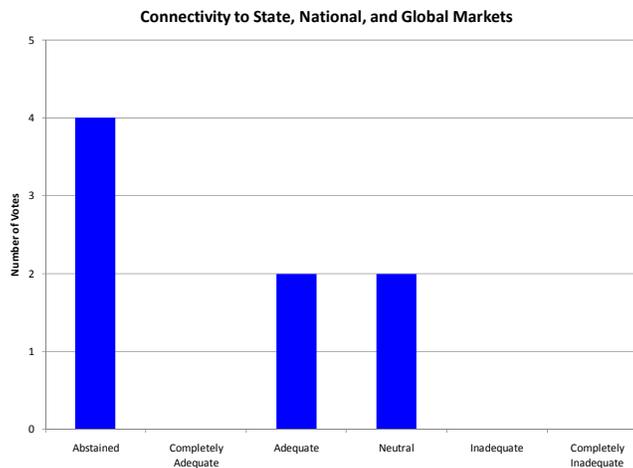
2.4 Customer Service

Some participants mentioned a difference in customer service between the shortline railroads and the Class I lines. Shortlines are perceived as very customer service oriented. The Class I railroads, on the other hand, are viewed as less customer service oriented. For example, the Class I lines do not provide service if guarantees cannot be met.

3. South Texas’s Transportation System

3.1 Connectivity of South Texas’s Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Connectivity to state, national, and global markets?**

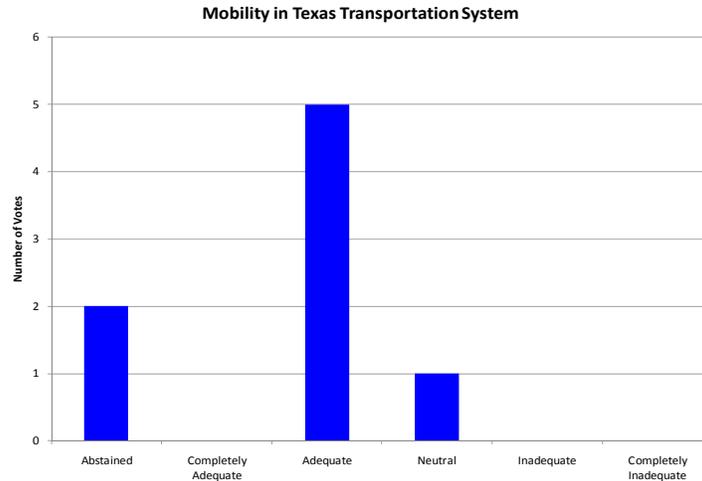


Comments

Connectivity is an issue when shippers ship out of the region. In the Panhandle Region, there are no capacity or connectivity constraints. Planning agencies in the Lubbock region have been very proactive in addressing any congestion concerns.

3.2 Mobility in Texas's Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **mobility** (e.g., ensuring reasonable travel times)?

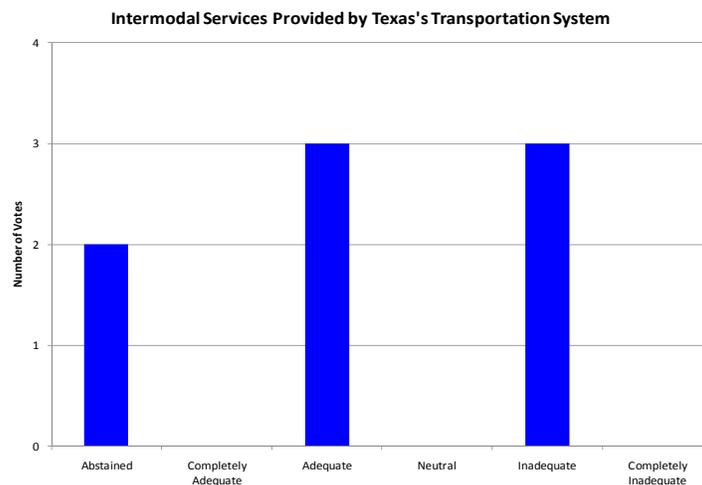


Comments

The region experiences no mobility or congestion concerns. Also, the Ports-to-Plains Corridor facilitates reasonable travel times in the region.

3.3 Intermodal Services Provided by Texas's Transportation System

How would you rate the Texas transportation system in meeting your business needs in terms of **Intermodal Services** (air, sea, rail, and/or road)?



Comments

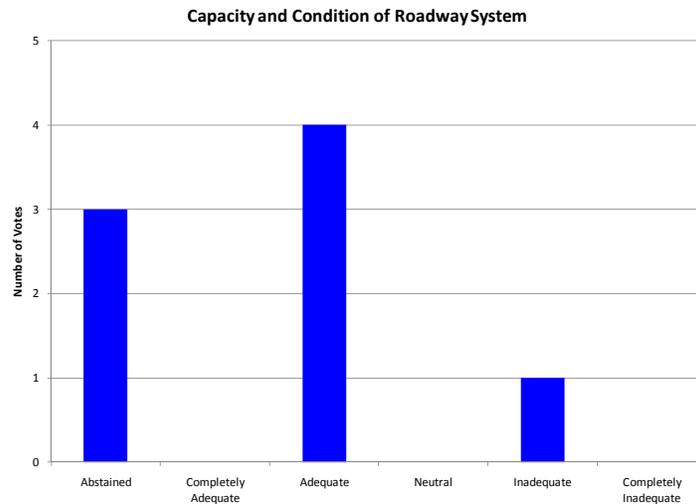
Plans for a rail transload facility in the region are on hold. The region does not have many intermodal options and the Class I railroads are reluctant to pick up a limited number of containers in the region. Participants felt that if a transload facility were developed in Lubbock,

rail shipments to Houston would be more viable. Such a facility is estimated to cost approximately \$5 to 10 million.

Participants also noted that major steamship lines are charging higher demurrage charges for containers that are returned late.

3.4 Capacity and Condition of Texas’s Roadway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of Texas roads and highways?**



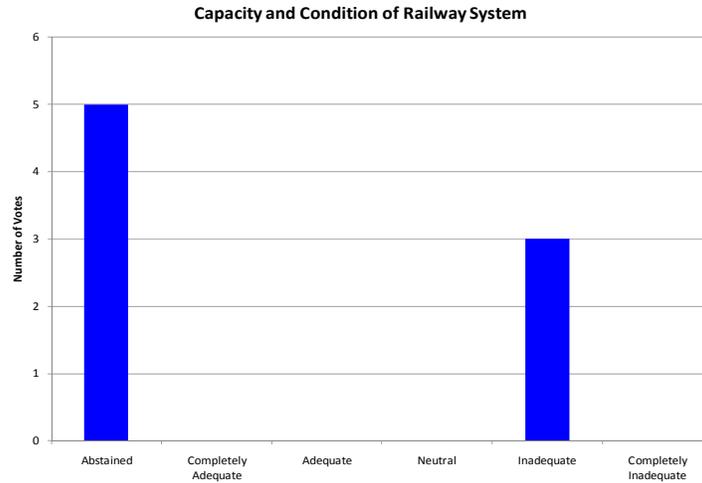
Comments

Although some deterioration in the capacity and condition of Texas roads and highways has been evident in the region, most participants felt that this was more a statewide issue. It was noted that the city has been annexing many county roads and had to increase franchise fees to convert those roads to streets. This was done because the city is growing towards the south and southwest.

Some concern has been expressed about the damage to farm-to-market roads caused by the transportation of wind components. In general, though, most participants felt that Texas’s transportation system is very reliable.

3.5 Capacity and Condition of Texas’s Railway System

How satisfied you are with the freight transportation infrastructure in Texas in terms of **capacity and condition of rail infrastructure**?



Comments

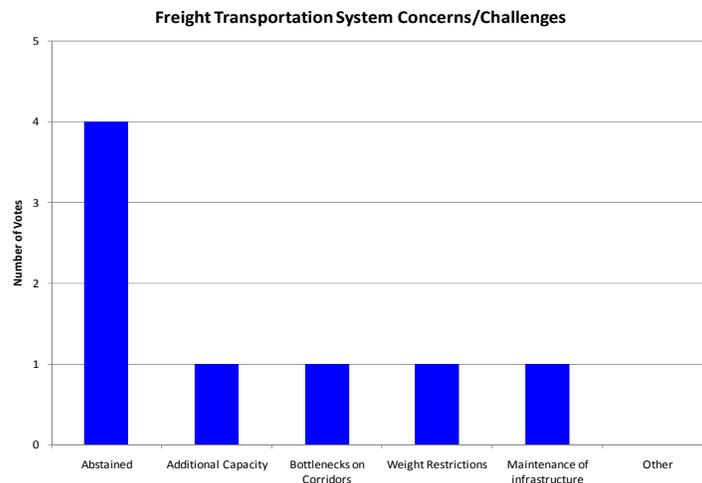
The Permian Basin is the only shortline that serves the region, but much of the line is restricted to speeds as low as 15 mph. UP traverses the region, but does not stop in the region.

3.6 Capacity and Condition of Port Infrastructure

Participants were not given the opportunity to rank their satisfaction with the **capacity and condition of port infrastructure**, but one participant did mention a concern about landside access to Bayport.

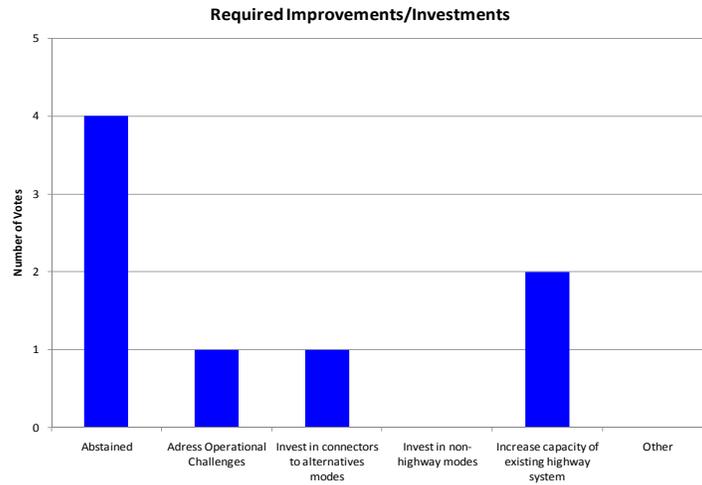
3.7 Freight Transportation System Concerns/Challenges

What are your **major concerns/challenges** concerning Texas's freight transportation system as it pertains to your business?



3.8 Required Improvements/Investments

What **investments** are required to remedy infrastructure concerns/challenges?

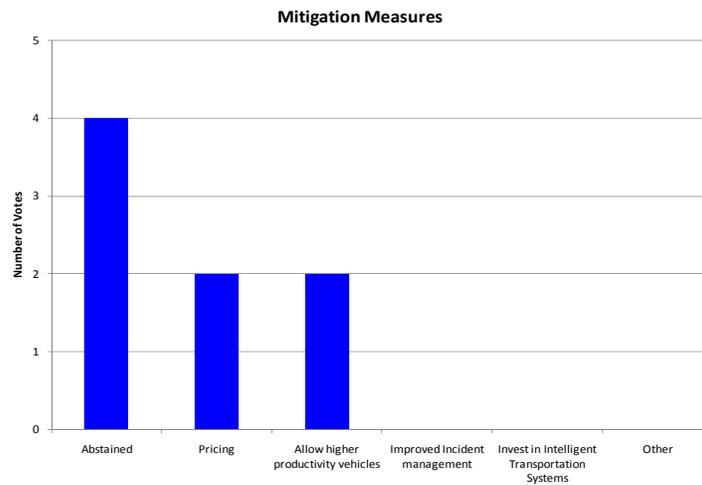


Comments

A rail transload facility in the region was regarded a needed investment, as shippers currently truck cotton to Dallas from where it is railed to the West Coast through the region.

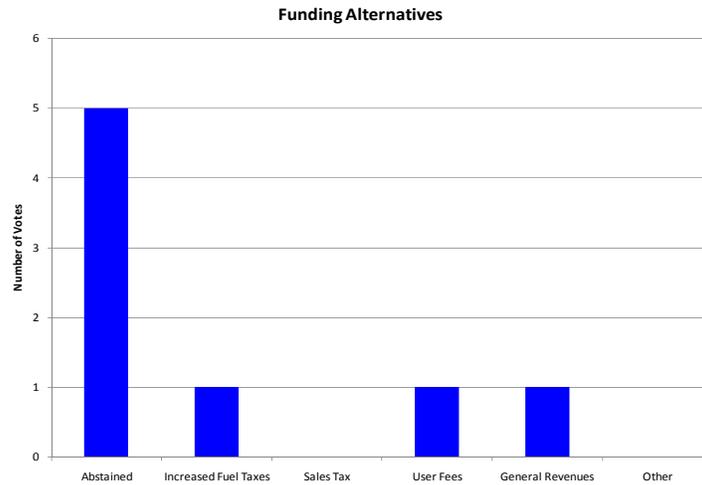
3.9 Required Mitigation Measures

What **measures** are required to remedy operational concerns/challenges?



3.10 Funding Alternatives

How should improvements to Texas's transportation system be funded?

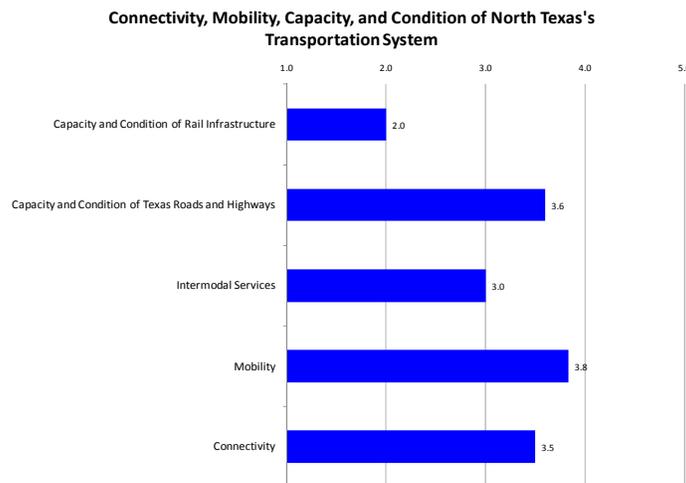


Comments

Most participants felt that general revenues could be prone to political/legislative interference and therefore do not represent a sustainable funding alternative for Texas's transportation system.

3.11 Concluding Remarks

The following figure illustrates the participants' perceptions of the adequacy of Texas's transportation infrastructure. As can be seen, mobility (3.8), the capacity and condition of Texas's roads and highways (3.6), and connectivity (3.5) were rated neutral to adequate. On the other hand, the capacity and condition of rail infrastructure (2.0) in the region was rated inadequate.



Scale: 1 – Completely Inadequate; 2 – Inadequate; 3 – Neutral; 4 – Adequate; 5 – Extremely Adequate

**Piney Woods Region
Tyler**

**Tyler TxDOT District Office
2709 W Front Street
Tyler, TX 75702**

Tuesday, October 27, 2010

Introduction: Piney Woods Region

The Piney Woods Region workshop began with a presentation to provide the context in which states have been conducting statewide freight planning. The presentation highlighted the federal laws that require statewide freight planning, the approaches taken by other State Departments of Transportation, and some of the challenges in conducting statewide freight planning. Against this background, the CTR research team subsequently presented the objectives of the current TxDOT research study 0-6297. Participants were then presented with a number of questions/statements in three categories: (1) business factors that influence the size, frequency, and mode of transportation used by shippers, (2) mode choice factors impacting freight transportation, and (3) the identified transportation needs in the Piney Woods Region. The participant responses and discussion points that ensued are summarized in this section. The following companies (number of representatives is provided in parenthesis) participated in the Piney Woods Region workshop:

- PakSher (1)
- Summit Industrial Products (1)
- JW Manufacturing Co. (1)
- TxDOT-Tyler (1)

Workshop Discussions

1. Business Factors

1.1 Changes in Transportation Costs

Participants noted that more customers order “minimum quantities” as a result of higher transportation costs—i.e., less-than-truckload rather than truckload shipments. In other words, although the number of orders is the same, the quantities are less. The transportation cost per unit has thus increased as average load size decreased.

Lower international transportation costs have resulted in increased imports. One participant mentioned that the cost of resins has dropped from \$0.90 per pound to \$0.50 per pound, resulting in it being cheaper to import than manufacture resins. Some products cannot be off-shored, but the generic products often can. According to one participant, however, manufacturers do not like to lose the control associated with increased reliance on imports even if short-term gains are produced.

1.2 Geographical Proximity to Suppliers

For one participant, it was more critical to have access to a rail facility than to be geographically near suppliers as the rail per mile cost for bulk commodities is very low. This company orders resin supplies by rail and has increased the number of ordered rail cars when the price of resin decreased. The resin originates in the Houston area. In addition, ink is acquired from Shreveport and packaging materials are locally sourced from a manufacturer in Tyler.

Another participant mentioned that 90% of their supplies are sourced from 30 local suppliers. Finally, most supplies for the third participant come from the Houston area. In the latter case, most manufacturers of one of the base elements to this company’s production process are located in Houston, so the further the company is from Houston, the higher the transportation costs associated with moving the specific base element.

1.3 Geographical Proximity to Clients

In terms of proximity to clients, one participant mentioned that concessions need to be made when selling to clients that are further away. In the case of domestic customers, distance is very important. In this case, large shipments can help to reduce the transportation costs per unit. This is a major consideration for less-than-truckload customers. This participant used to deliver orders to Alberta (Canada) by rail, but rail was reported to be more expensive than trucking currently. Also, it takes two weeks to deliver a shipment by rail as opposed to four days with a team trucking arrangement.

Another participant mentioned that their business is not affected by the location of their clients. The industry is driven more by labor force and corridor location than proximity to client. This is partly because the products are custom made by only three manufacturers and it is therefore not easy for clients to move to another shipper.

1.4 Changes to Productions Schedules

In general it was felt that changes to production schedules had an insignificant impact on shipments received or shipped by the participants. In the case of one participant, production schedules are fairly consistent throughout the year with some peaking in both production and shipments around September and October. In the case of another participant, production was largely a function of gas prices. Most production planning thus centered on fuel costs. One participant mentioned that their shipments tend to decrease towards the end of the year.

Finally, it was mentioned that seasonality impacts the food packaging industry to some extent and not necessarily the industrial shippers. It was argued that if natural gas prices decrease, industrial shippers experience an increase in shipments. Models are developed that incorporate assumptions about the price of gas at different levels, i.e., \$4.00 gas, \$8.00 gas, etc. Lubricants are not impacted by seasonality.

1.5 Change from In-House Trucking to for-Hire Trucking

All the participants used third party for-hire trucking services, because it was felt that in-house trucking added complexity. One participant mentioned that they have experimented with GPS as a means to replace reporting requirements to TxDOT, but this was not successful. Instead, the participant uses cell phones.

1.6 Acquiring Third Party Logistics Services

Whether the acquisition of third party logistics services would be beneficial to a company's business model depends largely on the product and the customer. One participant mentioned that some products require more security since there are only a few competitors, while others are mere commodities, which tend to be more sensitive to price fluctuations.

2. Factors that Impact Modal Competitiveness

2.1 Rail Options

Most participants felt that rail is only a viable option for bulk commodities and/or very large shipments. Also, shippers must have rail site access to make it a feasible mode. It was commented that rail companies only seek to maximize profits and for this reason are not interested in moving passengers or smaller shipments—i.e., the rail companies are only interested in moving large, bulk shipments that will ensure the largest profit.

Finally, it was mentioned that rail cannot accommodate frequent shipments as trucks can and that there is a higher probability for damage to goods when moved by rail compared to trucks.

2.1 Maritime Options

In terms of maritime shipments, it was commented that customer service is a concern in Los Angeles. Also, that it can take a long time for a shipment to reach its destination, mainly due to U.S. Customs inspections—particularly if it is a hazardous material shipment.

2.2 Travel Time

Participants agreed that travel time is the most important factor in determining mode choice besides cost. Rail was cited as having long shipment times. Even though rail is more cost

efficient than truck, it was argued that this efficiency is reduced by the additional travel time needed to dray cargo to and from the rail yard. Rail was thus considered too slow for most shipments with the exception of bulk cargo. It was argued that shippers show no interest in using rail and have even rejected approaches from the rail companies.

3. Texas's Transportation System⁴

3.1 Intermodal Services Provided by Texas's Transportation System

Most participants felt that Texas's transportation system was adequate in meeting their business needs in terms of intermodal services (air, sea, rail, and/or road). Texas's road infrastructure was regarded "good," but some concern was expressed about the time it takes to issue trucking permits. Even with minor slowdowns at the ports, it was felt that shipments were predictable.

3.2 Capacity and Condition of Texas's Roadway System

Most participants agreed that the capacity and condition of Texas's roads and highways were not of concern. In cases where traffic delays are expected, companies have modified their work schedules. The only consistent bottleneck in the area is IH 20, especially when it rains. It was felt, however, that effective law enforcement could reduce the number of incidents on IH 20 during inclement weather.

3.3 Capacity and Condition of Texas's Railway System

Only one respondent, who uses rail, commented that rail capacity is not adequate in serving shipper needs in Texas. The other participants did not use rail or did not feel comfortable commenting.

3.4 Capacity and Condition of Texas's Port Infrastructure

In terms of satisfaction with the capacity and condition of Texas's port infrastructure, the participants did not identify any issues or concerns with Texas's marine ports as they seldom use them.

3.5 Impact of Texas's Transportation System on Companies' Logistics Practices

Participants agreed that Texas's transportation system has little, if any, impact on companies' logistics practices.

3.6 Impact of Texas's Transportation System on Companies' Inventory Practices

Participants remarked that most shippers maintain as little inventory as possible. Texas's transportation system allows for fast shipping times, which reduces the need for inventory. It was thus felt that the system is functioning well.

⁴ Please note that participants were not given the opportunity to respond to/comment on the following questions because of time constraints or because the question has been addressed earlier:

- How would you rate the Texas' transportation system in meeting your business needs in terms of **connectivity to state, national, and global markets**?
- How would you rate the Texas transportation system in meeting your business needs in terms of **mobility** (e.g., ensuring reasonable travel times)?

3.7 Impact of Texas's Transportation System on Companies' Access to Suppliers

The participants agreed that Texas's transportation system facilitates access to suppliers positively and that Texas fares well in comparison to other states. Shippers can work around any difficulties that are experienced with on-time shipping.

3.8 Freight Transportation System Concerns/Challenges

In terms of major freight transportation concerns/challenges, it was remarked that the concerns vary depending on the shipper. One participant was concerned about delays imposed by obtaining overweight permits, while others were concerned about the continued maintenance of existing infrastructure over the long-term. Finally, concern was expressed that every state has different standards and shipment dimensions—a concern for out-of-state shipments. This participant called for greater coordination among different states concerning size and weight regulations.

3.9 Required Improvements/Investments

The respondents agreed that investments to increase the capacity of the existing highway system are needed to address the identified infrastructure challenges. In addition, the need for continued maintenance of the existing infrastructure was foreseen.

3.10 Required Mitigation Measures

The respondents agreed that pricing, allowing higher productivity vehicles, improving incident management, and investing in Intelligent Transportation Systems (ITS) are all necessary initiatives to help remedy operational concerns/challenges. However, the participants emphasized the need for the implementation of ITS as a “must-have” to alleviate congestion/accidents on the highway system.

3.11 Funding Alternatives

Participants supported the idea of a combination of increasing fuel taxes, levying a sales tax, implementing user fees, and using general revenues to fund Texas's transportation system. One participant argued that truckers consume more of Texas's roads and highways, but they also move the consumer goods that everyone uses. So increasing fuel taxes or implementing a fee on trucking companies will only result in an increase in the cost of consumer goods. Fuel taxes alone were felt to be insufficient at times when road usage dwindles—for example, during high fuel prices or during a recession. When asked to identify one funding alternative, the participants supported levying a sales tax, because it was argued that every consumer uses Texas roads.

3.12 Concluding Remarks

Finally, all the respondents considered Texas's roads and highways as critical to their business—even the rail shipper.