U.S. Department of Transportation
Federal Highway Administration

The Role of Transportation Investment in Private Firm Site Selection Decisions:

A Primer for Transportation Planners and Decision-makers

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16. Abstract

This publication is a primer designed to provide information to transportation planners and decision-makers about how transportation system investments affect site selection decisions of businesses and private land developers. It includes information obtained from experts in the site selection field as well as case studies of site selection processes in locations around the country.

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TABLE OF CONTENTS

1. INTRODUCTION AND OVERVIEW

Across the country, it is almost universally acknowledged that transportation investment is integrally linked with economic development. Cities, metropolitan areas, and States regularly plan and develop transportation projects – across multiple modes – intended to attract new businesses to specific sites and/or support the growth of existing businesses in or near their current sites. Understanding the nature and amount of economic benefits accruing from these transportation investments in a credible and defensible manner, however, is challenging.

This primer provides transportation planners and decision-makers with insights, guidance, and information on how transportation system investments affect site selection decisions of businesses and private land developers. It includes information obtained from experts in the site selection field as well as case studies of site selection processes in locations around the country.

Transportation planners and decision-makers, including transportation and planning agency executives, policy and technical board members, and inter-agency communications officials, may find this primer helpful in better understanding the key steps in a private firm's site selection decision-making process. Of interest may be understanding when and how non-transportation agencies and organizations are part of the process, and how the transportation agency can more effectively engage with them to facilitate a process aligned with adopted plans and priorities.

The information provided in this primer is meant to increase awareness of site selection factors, help communities design approaches and strategies that are applicable to their unique needs, and encourage engagement of the transportation planning community in economic development strategies. This document may also facilitate improved communication among transportation and economic development planners, inform the transportation project selection process in planning, and improve accountability in the environmental review phase (under the National Environmental Policy Act (NEPA)) of project development.

Acknowledgments

The Federal Highway Administration would like to express appreciation to the professional site selection industry practitioners, researchers, and public officials for providing information used in developing this primer.

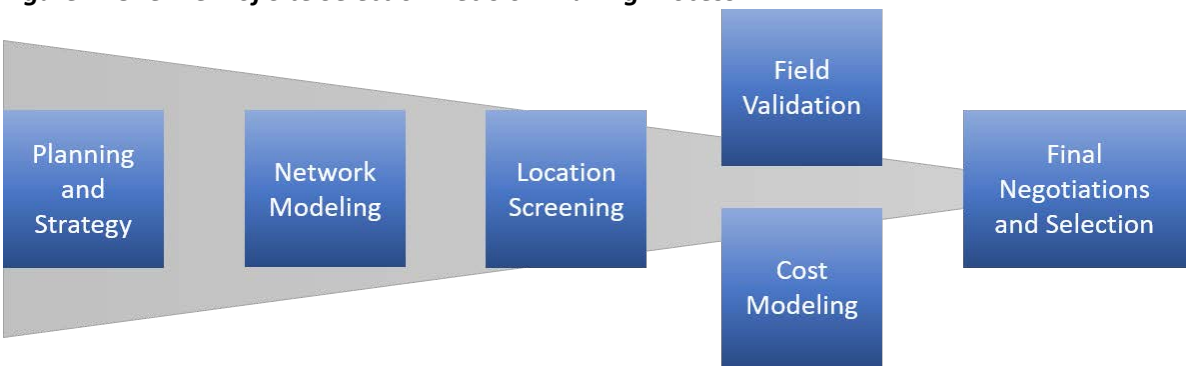
2. HOW FIRMS MAKE LOCATION DECISIONS

2.1. Introduction

The site selection process typically begins with an examination of the overall business needs for the distribution network and the new facility, and then often follows the process depicted in Figure 1. This diagram is representative, and tasks may be augmented, deleted, or overlap, or may follow a different order.

Every evaluation is an examination of the balance between opportunity and risk – options that best meet location requirements while minimizing risk will tend to consistently rank towards the top of the peer set in these analyses. While some small or regional companies will make location decisions based upon the idiosyncratic market and supply chain knowledge of specific individuals, most larger companies construct a robust site selection process that applies analytic discipline to business goals.

Figure 1. Overview of Site Selection Decision-making Process



2.2. Planning and Strategy

The site selection process begins with a **business need**. This need may arise from the desire to serve a new market, to merge facilities acquired from another company, or to respond to a change in market conditions. Firms will usually take some time at the beginning of site selection process to revisit the goals and business context for its location need. This will include asking and answering a variety of business questions, which may include the following:

- How far into the future can we plan?
- How might our business change over the coming years in terms of customer base, product mix, and service delivery?
- How are our customers' needs changing? Does this present us with new opportunities?
- Is our goal to optimize cost or reduce time to market? How best can the company balance its customer service goals?
- How capital and labor intensive are our preferred operating strategies?

- What is our overall workforce strategy? How do we want our staff to interact with and manage the supply chain?
- How do our total material and operating costs compare to those of our competitors?
- What are our overall sources (and costs) of capital to invest in this facility or network?
- What other outside events (e.g. fuel costs, global sourcing of goods, network congestion, political changes) might impact our decision making?
- How will we evaluate and adjust our decisions as time goes by? How often will this be accomplished?

The answers to these questions provide the general planning framework for the organization, form the basis for the facility plan, and illuminate any changes needed to a supply chain and/or distribution system. The planning timeframe will also highlight other strategic considerations. This establishes the overall need requirement to be satisfied by the new facility. This framework allows the project team to set overall parameters for the following:

- Proximity or access to key markets
- Transportation network requirements
- Labor and workforce needs and costs
- Tax and regulatory requirements
- Utility requirements, including information technology considerations
- Real estate and facility requirements (including specific building design and engineering requirements)
- Overall costs to establish and operate the facility or network
- Incentives or other public-sector assistance

Any of the above can be either a gateway or a screening criterion. **Gateway criteria** are those factors which must be in place for a location or community to be considered for the candidate list. **Screening criteria** are factors which are important to the overall success of the facility, but which may be considered against other operational requirements.

2.3. Network Modeling

Time to market and **overall logistics costs** drive many, if not most, facility location decisions, particularly for those facilities with significant freight movement. As a result, the first stage for locating a freight facility of almost any form examines the interplay between location and freight costs.

The network modeling phase is designed to determine:

- Origins and destinations
- The preferred mode or modes by which freight is to enter and leave the facility or facilities
- Tradeoffs between centralized or dispersed operations
- Needs for flexibility and resiliency

These models are run through a variety of scenarios, examining the sensitivity of the optimal network to issues such as freight volume, population growth, customer change, sourcing, operations costs, and fuel costs. This idealized network is then compared against the company's current network to both benchmark the accuracy of the model and to identify gaps in the network.

This analysis of linkages and infrastructure must be compared against real-world data regarding actual conditions. Network models are typically limited in their ability to incorporate such issues as congestion in transportation channels or changes to the transportation network itself, except in the cases where these changes are incorporated into transit time costs passed onto the customer.

2.4. Location Screening

The site selection team also gathers data that relates to **non-transportation factors** such as workforce, regulatory environment, utilities, and the cost of real estate. These factors affect overall business success but must be evaluated using different methods from those of network analysis. The main challenges for the site selector are threefold:

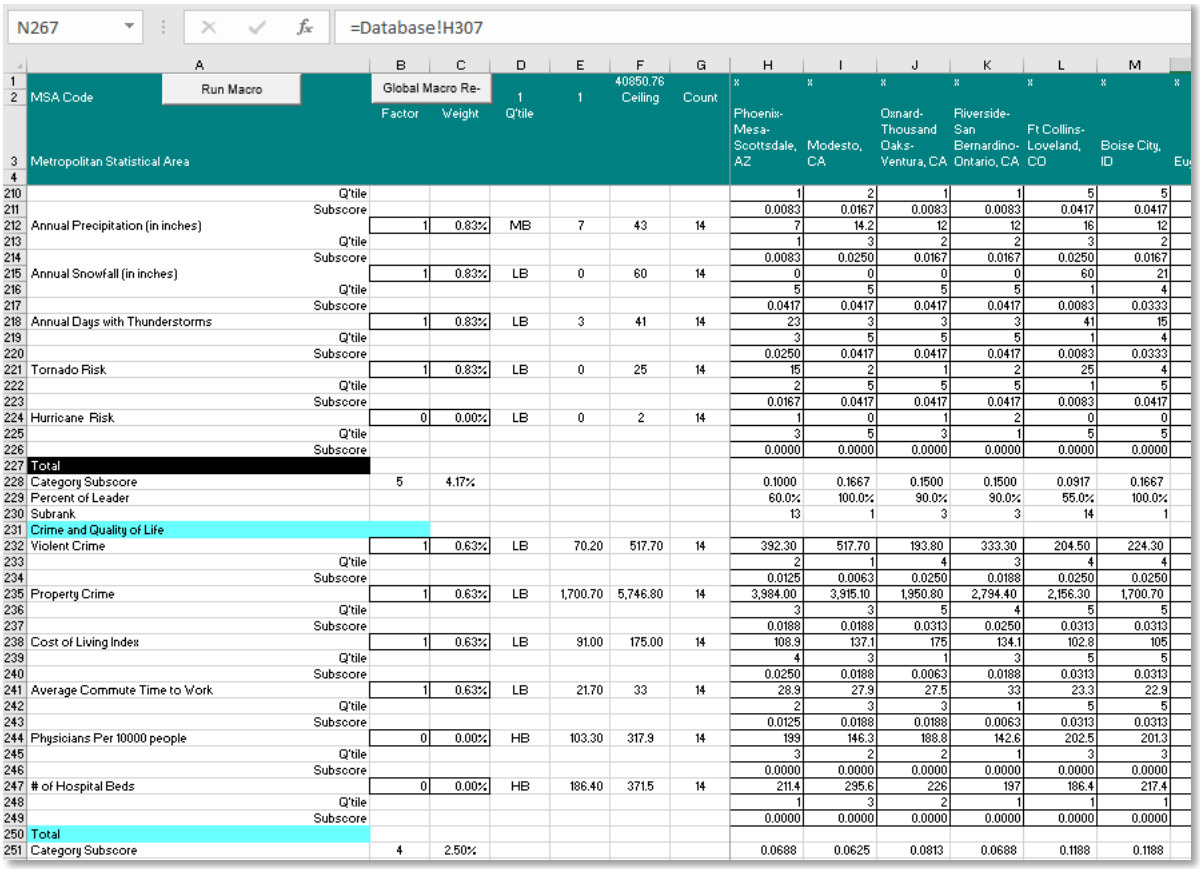
1. Finding data that appropriately measures each major business driver
2. Developing a method for reconciling the relative importance of each data item
3. Following a process to gain acceptance of the above among corporate executives

The firm (or its site selection consultant) will typically construct a weighting and ranking model that uses various data to determine how each candidate community matches the company's goals relative to the others in consideration. This data can include:

- Availability, cost, and quality of the workforce
- Unionization and union activity
- Electric, water, sewer, and gas utility availability, capacity, and cost
- Availability of adequate sites or facilities
- Rent, occupancy, and construction costs by acre or square foot
- Income, inventory, sales, property, and other taxes as well as regulatory issues
- General information on credits, grants, incentives, or other public-sector assistance
- Climate and natural hazard information
- Quality of life (often referred to as "recruitability" and salient when considering relocating existing management or attracting staff with critical skills)

Figure 2 below provides an excerpt from a spreadsheet-based weighting and ranking model.

Figure 2: Sample Site Selection Weighting and Ranking Model (Source: Investment Consulting Associates)



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	A	B	C	D	E	F	G	H	I	J	K	L	M
1						40850.76		x	x	x	x	x	x
2	MSA Code Run Macro	Global Macro Re-		1	1	Ceiling	Count						
3	Metropolitan Statistical Area	Factor	Weight	Q'tile				Phoenix-Mesa-Scottsdale, AZ	Modesto, CA	Oxnard-Thousand Oaks-Ventura, CA	Riverside-San Bernardino-Ontario, CA	Ft Collins-Loveland, CO	Boise City, ID
4													
210	Q'tile							1	2	1	1	5	5
211	Subscore							0.0083	0.0167	0.0083	0.0083	0.0417	0.0417
212	Annual Precipitation (in inches)	1	0.83%	MB	7	43	14	7	14.2	12	12	16	12
213	Q'tile							1	3	2	2	3	2
214	Subscore							0.0083	0.0250	0.0167	0.0167	0.0250	0.0167
215	Annual Snowfall (in inches)	1	0.83%	LB	0	60	14	0	0	0	0	60	21
216	Q'tile							5	5	5	5	1	4
217	Subscore							0.0417	0.0417	0.0417	0.0417	0.0083	0.0333
218	Annual Days with Thunderstorms	1	0.83%	LB	3	41	14	23	3	3	3	41	15
219	Q'tile							3	5	5	5	1	4
220	Subscore							0.0250	0.0417	0.0417	0.0417	0.0083	0.0333
221	Tornado Risk	1	0.83%	LB	0	25	14	15	2	1	2	25	4
222	Q'tile							2	5	5	5	1	5
223	Subscore							0.0167	0.0417	0.0417	0.0417	0.0083	0.0417
224	Hurricane Risk	0	0.00%	LB	0	2	14	1	0	1	2	0	0
225	Q'tile							3	5	3	1	5	5
226	Subscore							0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
227	Total												
228	Category Subscore	5	4.17%					0.1000	0.1667	0.1500	0.1500	0.0917	0.1667
229	Percent of Leader							60.0%	100.0%	90.0%	90.0%	55.0%	100.0%
230	Subrank							13	1	3	3	14	1
231	Crime and Quality of Life												
232	Violent Crime	1	0.63%	LB	70.20	517.70	14	392.30	517.70	193.80	333.30	204.50	224.30
233	Q'tile							2	1	4	3	4	4
234	Subscore							0.0125	0.0063	0.0250	0.0188	0.0250	0.0250
235	Property Crime	1	0.63%	LB	1,700.70	5,746.80	14	3,984.00	3,915.10	1,950.80	2,794.40	2,156.30	1,700.70
236	Q'tile							3	3	5	4	5	5
237	Subscore							0.0188	0.0188	0.0313	0.0250	0.0313	0.0313
238	Cost of Living Index	1	0.63%	LB	91.00	175.00	14	108.9	137.1	175	134.1	102.8	105
239	Q'tile							4	3	1	3	5	5
240	Subscore							0.0250	0.0188	0.0063	0.0188	0.0313	0.0313
241	Average Commute Time to Work	1	0.63%	LB	21.70	33	14	28.9	27.9	27.5	33	23.3	22.9
242	Q'tile							2	3	3	1	5	5
243	Subscore							0.0125	0.0188	0.0188	0.0063	0.0313	0.0313
244	Physicians Per 10000 people	0	0.00%	HB	103.30	317.9	14	199	146.3	188.8	142.6	202.5	201.3
245	Q'tile							3	2	2	1	3	3
246	Subscore							0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
247	# of Hospital Beds	0	0.00%	HB	186.40	371.5	14	211.4	295.6	226	197	186.4	217.4
248	Q'tile							1	3	2	1	1	1
249	Subscore							0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
250	Total												
251	Category Subscore	4	2.50%					0.0688	0.0625	0.0813	0.0688	0.1188	0.1188

A **weighting system** is used to objectively test how each of the candidate communities or sites matches the company's needs. The team can evaluate a variety of alternative scenarios to reflect changing priorities. The team also examines how the community or site's location impacts operating and cost considerations as compared to the network model's ideal location. Communities that score well against the team's identified priorities and that can also adapt to alternative outcomes are retained for field analysis.

2.5. Field and Site Analysis

The firm's site selection team next **visits the finalist communities** and further evaluates specific sites or facilities within the community. This process also assists in interpreting the objective data on workforce and other areas from earlier screening stages. The location team may **seek the assistance of local government or economic development officials** in various areas, including:

- Meeting with companies who have similar operating profiles
- Discussing permitting and regulatory assistance
- Leveraging incentives, grants, credits, and other public assistance
- Identifying any appropriate sites which may not have been uncovered in earlier due diligence

- Working with local utility officials to discuss load requirements and other considerations
- Other meetings and connections as appropriate

These items allow for a better understanding of the actual operating environment in the community and launches the negotiation process for land, facilities, and public assistance, where appropriate.

Incentives often receive considerable attention for the influence that these programs appear to have on location decisions. Such incentive programs may include but are not limited to:

- Income tax credits
- Property tax credits, deferrals, or forgiveness
- Utility cost reduction
- Infrastructure grants or low-cost loans
- Workforce training grants

In truth, incentives cannot make up for other more directly business relevant factors, and cannot make an otherwise poor location into a good one. Nonetheless, incentive programs can affect decisions when a short list of viable options are on the table.

Discussions then begin with land or facility owners on selected properties to evaluate each property against some or all the following factors:

- Match to company requirements for size, configuration, flexibility, and permitting ability
- Ease of access to and distance from key transportation points
- Utility feeds and redundancy to the facility
- Environmental and engineering considerations
- Rent, purchase, and operating costs
- Employee commuting patterns

2.6. Cost Modeling

A **full financial analysis** of the various location and network scenarios may be used to evaluate the feasibility and the relative financial merits of each option. Each scenario may be compared to the current state, a defined base case, alternative scenarios, or all of these. The cost model may include any or all of the following:

- Startup costs (land, construction, relocation, recruiting, equipment, etc.)
- Recurring costs (salaries and benefits, rent or operations costs, utilities, etc.)
- Exit costs

Cost models provide critical information on how each scenario and/or location provides an economic payback for the proposed investment and allows it to be compared against other operational investments the company might consider.

2.7. Negotiations and Final Selection

Site selection teams may also work to identify, negotiate, and secure incentives from local or regional governments to address any perceived deficiencies of the location or to help offset costs and improve feasibility. Other programs or incentives may be devised to solve a hurdle expected by the company.

At the completion of the cost model, site analysis and negotiations, and the negotiations for public incentives, the site selection team re-assembles the corporate stakeholders to present their findings and recommendations. The firm then decides on a course of action, instructing their partners to complete negotiations and implement the new location strategy.

3. SECTOR-SPECIFIC SITE SELECTION FACTORS

The importance of transportation infrastructure and functionality in the site selection process varies across different types of firms and facilities. It is important to understand these differences to determine when and how a transportation agency can provide information and support to a community process for economic development and firm attraction. This chapter provides an overview of transportation-related factors common to most firms' site decisions, followed by detailed insights on the perspectives of four different types of firms regarding the relationship of transportation investment to their site selection decisions: high-tech firm headquarters, commercial and office buildings, distribution and logistics hubs, and assembly plants.

3.1. Factors Common to Most Facility Types

Access to Workers. Access to qualified workers is essential for many firms. The increasing need for advanced skills as well as competition for labor in the current low-unemployment environment means companies must consider employee access when selecting a new site. This factor affects both service-providing and goods-producing companies alike as well as firms located in urban, suburban, and rural settings. Many of today's workers desire relatively short commute times and multiple commuting options. In urban settings, this may mean access to transit and/or the ability to walk or bike to work. In suburban and rural settings, this often means access to uncongested and reliable highways.

Access to Airports. Highways are critical for companies that require airport access. Companies that operate nationally or globally seek locations that offer access to a major airport via the Interstate System or other highways. In addition, companies that ship high-value or time-sensitive goods often must be proximate to or have easy access to airports with scheduled and adequate air cargo service.

3.2. Factors Specific to Different Types of Firms

To more clearly illustrate the various transportation-related factors affecting where and why firms build or expand facilities, the following pages provides insights and information specific to the site selection decisions of four firm types:

- High-tech Firm Headquarters
- Commercial Office Development
- Distribution and Logistics Hubs
- Assembly Plants

High-tech Firm Headquarters

Access to workers is of paramount importance for tech companies, and the presence of talented workers increasingly dictates where they locate. In some regions, workers rely on both highways and transit to reach work. When making re-location decisions, some companies will look at every employee's current commute and analyze the expected changes on their average travel time and complexity for various sites. Many of these companies believe that the duration of employees' commutes is more important than the types of roads they use for their commutes.

Highways are important for corporate travel insofar as they provide ready access to regional airports. For certain tech companies, access to a major airport is the most important site selection criterion, even more important than unfettered access to highways.

"Sense of place" and the built environment also play roles in site selection, especially for tech firms. Many high-skilled workers want to work in settings that are vibrant and full of culture—known as "placemaking." Some companies still wish to locate in office parks and corporate campuses served by highways, but there is a trend toward locating or relocating in dense, urban environments with multiple transportation options. This is not only because of worker demands, but also because some firms achieve significant productivity benefits from locating in "clusters" with similar firms.

Tech companies with research and development (R&D) functions are more likely to cluster than those with sales or production functions because R&D is more removed from final demand and therefore less subject to competition. These companies also see more benefits from agglomeration. Headquarters and R&D functions may also be less sensitive to costs and more sensitive to the availability of key requirements such as a qualified workforce.

Commercial Office Development

As with tech firm headquarters, the commercial office (e.g., back office, call center, processing center and the like) all succeed or fail based on their access to workers. However, instead of being limited to tech or executive talent, the commercial office houses a wider variety of activities, and often a much larger headcount, therefore it has a more expansive need for worker transportation.

When making location decisions, companies will look at the demographics and talent profile of their current locations and/or of the profile that they believe will be needed in the future. This can include looking at demographic cohorts, industry employment dynamics, occupational census, or all the above.

As with headquarters and tech facilities, workers may choose to use either highways and/or transit to reach work depending on the more available and advantageous mode in that region. When making re-location decisions, some companies will look at the commute of key employees or employees in critical functions and analyze the expected changes on their average travel time and complexity for various sites. Again, it is the length and complexity of the commute rather than the types of roads that impact decisions.

There is a tendency for commercial offices to cluster at key transportation linkages (Interstate highway interchanges, public transit nodes, etc.), as such points tend to provide enhanced access to the broader labor market, in effect stretching out and increasing the pool of talent from which the company may hire.

When making location decisions, companies will look at the demographics and talent profile of their current locations and/or of the profile that they believe will be needed in the future. This can include looking at demographic cohorts, industry employment dynamics, occupational census, or all the above.

Distribution & Logistics Hubs

Distribution and logistics facilities consider the possibility of supply chain disruptions when choosing where to locate. Certain companies with advanced site selection processes measure and monetize disruption risks. Early in the site selection process, logistics are more important than workforce access.

As much as two-thirds of distribution costs are transportation-related. Interstate access is a commonly-used site selection factor for companies engaged in distribution and logistics. Their reliance on Interstates is a function of volume, frequency, and zoning. When considering available sites, bulk distributors generally have more selection than manufacturers because zoning and other land use controls are more favorable.

The emerging satellite distribution center concept involves locating smaller distribution facilities near the urban core instead of on the periphery. E-commerce is driving this trend with its expectations of faster and more flexible delivery.

Air service supports business travel to maintain connections with customers, other company personnel, and suppliers. Air freight is usually a choice of last resort because of cost, but in certain situations is the preferred or required mode, namely for perishable goods, high-value products, just-in-time parts and supplies, and other time-sensitive deliveries.

Cost and time sensitivities can vary by commodity type based on factors such as value, perishability, and the need for reliability in the supply chain. Businesses differentiate their supply chains by commodity value, i.e., high, medium, and low. This has implications for the competitive positioning of ports and port regions. There are also differences in the cost of congestion across commodities that represent opportunity costs of freight value that is “locked up” while in transit, and reliability/logistics costs from freight perishability, loss of retail value, disruptions in just-in-time manufacturing, and missed intermodal connections.

Assembly Plants

Highway proximity and quality are almost always factors involved in the site selection process for companies that ship or receive products. Many companies have a “five to 55” requirement; that is, the ability to reach a highway that has a speed limit of 55 miles per hour or higher within five minutes. This is because travel time to a highway affects the size of a company’s same-day or next-day delivery market. For non-limited access highways, companies require safe left turns in and out of their locations.

The key for manufacturers is to shorten the distance their products travel, making transportation infrastructure access relevant to their site selection decisions. Food manufacturers depend on highways because their products are perishable. Next-day truck delivery is a common requirement for food manufacturers that usually translates to a 500-mile radius from their assembly plant.

Labor costs and availability are critical factors for manufacturers, sometimes ranking second or even first on their list of site selection criteria. Labor and transportation access often dictate site selection decisions because their associated costs are higher than the cost of land in many regions. In some situations, labor access is so important that a company would rather locate 15 minutes further from an airport to be closer to its workforce.

Companies that manufacture high-value or time-sensitive products (e.g., semiconductors or pharmaceuticals) consider the freight capacity of regional airports when making site location decisions. This is because air travel provides a quick way to transport goods to market.

Congestion around cities is especially problematic for manufacturers, who tend to focus more on network-level transportation constraints and total distance to/from customers and suppliers than first/last-mile issues. Many manufacturers still seek to locate in cities but near highway interchanges. For manufacturers whose supply chains and product shipments rely on reliable ocean port access, the condition of the bridges connecting them to those ports may be an important site selection consideration.

Manufacturers typically locate near raw materials and suppliers that are expensive to transport relative to their value. A location’s accessibility can also reflect segmentation of supplier and buyer markets. For example, a car manufacturer might search for accessible parts suppliers when choosing a site rather than analyzing the total accessible population as a proxy for potential customers.

4. ROLE OF THE PUBLIC SECTOR IN PRIVATE SECTOR SITE SELECTION

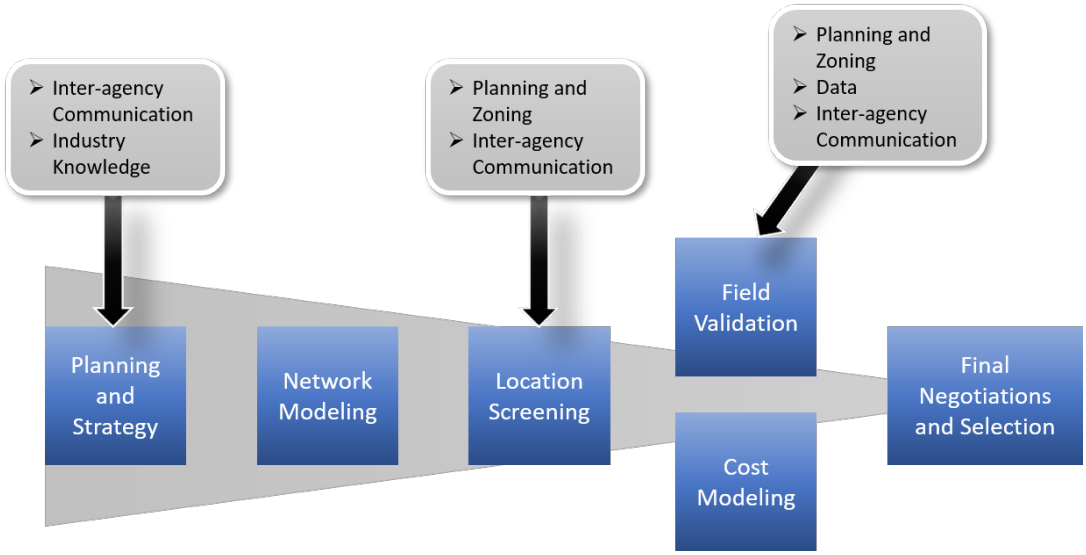
4.1. Introduction

There is a role for transportation planning officials and agencies to provide input and/or engagement in several key aspects of the typical private site selection process. While site selectors typically wait until the final stages of the site selection process before interacting with the public sector, there are several ways for public agencies to engage the private sector earlier. This type of proactive engagement can benefit both parties.

4.2. Leverage Points for Transportation Agencies

The following graphic indicates several points within the typical site selection process where there may be opportunities for transportation planning agencies and officials to facilitate an effective and robust process by engaging with public and private officials.

Figure 3. Possible Leverage Points for Transportation Agencies in Site Selection Process



Planning and Strategy

Transportation planners can be particularly helpful during site selectors' planning and strategy phase. This phase involves site selectors working with their clients to identify their strategic goals and plans for expansion. Even if site selectors and their clients have not identified specific sites or even regions yet, planners can provide valuable information to prospective companies.

Location decisions require a large amount of both quantitative and qualitative information. Some of this information may be time consuming or labor intensive to collect. Additionally, companies are frequently interested in speaking to others in their industry when narrowing down location options. These aspects of the process offer opportunities for a public-sector facilitation role. Communities prepared with the right information or the means to quickly provide requested information are better positioned to compete for new facilities.

Individual government agencies can be important sources of information for site selectors and their clients. Agencies often field site-specific requests related to curb cuts, road improvements, and transit access. Transit agencies also provide information related to routes and service frequency and take requests for new service. Environmental agencies can provide information on local air quality regulations and permitting needs for industrial companies.

Network Modeling

Transportation planners understand how to evaluate current and expected future conditions as a basis for future planning and investment strategy. To address site selection dynamics, there are opportunities to extend this current practice to assessments specifically undertaken through the lens of private sector needs and wants. These types of assessments can vary from relatively broad evaluations to advanced analyses of specific target industries and their supply chains. Communities can conduct this type of basic self-assessment within the context of an economic development strategy or long-range plan.

Planners can assist site selectors as they conduct in-depth evaluations of regional transportation facilities that affect the competitive position of various industries. Some industries are especially sensitive to road network congestion, especially when requiring access to a port or intermodal facility. For such firms, a Metropolitan Planning Organization (MPO) or State DOT may be able to facilitate site selector access to additional information on transportation network reliability from sources such as the FHWA Freight Performance Measures information or the American Transportation Research Institute (ATRI) Top Truck Bottleneck List.[1]

Public sector terminal owner/operators (seaports, airports, inland ports) represent an interesting hybrid of public and private sector behavior in the sense that they have broad economic and social mandates but also depend directly on the businesses they serve for revenue. Large owner/operators may therefore expend considerable effort analyzing the attractiveness of their own services combined with the attractiveness of their catchment regions for business activity. Regardless of the level of complexity or detail, the results of a self-assessment can provide the basis for marketing to businesses or can help identify gaps that may merit new investment or policy action.

Location Screening

Site selectors want to know if future land use and/or transportation trends will affect potential sites. For example, a site selector might consult an MPO's long-range transportation plan to ensure there are no planned projects that will adversely affect a potential site or ask an MPO or State DOT about plans for a new highway that could benefit their clients.

Planning agencies can be proactive by anticipating questions or issues a site selector might identify. For example, planning agencies can identify site access issues ahead of time and develop solutions tailored to suit a variety of companies. Planning agencies can also publicize regulatory information related to things like zoning, parking, and traffic flow. In some cases, an MPO could share results of scenario planning processes that inform the site selector's assessment of likely local development patterns.

[1] ATRI is a non-profit national research organization.

5. POSSIBLE PUBLIC TRANSPORTATION AGENCY ACTIONS TO ENHANCE SITE SELECTION PROCESSES

5.1. Introduction

There are a variety of actions public transportation agencies can take to become involved in the previously described phases of the private site selection process. Through policy choices, planning decisions, and communications strategies, these agencies can expand their role in facilitating new business attraction and expansion and/or helping better align the site selection decisions with community goals and priorities.

5.2. Policy-level Approaches and Actions

Some site selection practitioners believe that different types of civic and public sector organizations (e.g., economic development organizations (EDO), metropolitan planning organizations (MPO), departments of transportation (DOT), and planning bodies for jurisdictions that have regulatory authority over land use controls) often do not interact with one another, and instead network with economic development, transportation, and county or municipal organizations like their own. This makes it difficult for planning agencies, especially, to fully understand the site selection process or even understand how to coordinate efforts among these disparate parties. For example, most MPOs do not conduct planning or analyses related directly to workforce development. Chambers of Commerce, by contrast, focus on this issue because their business members require it. Because EDOs and chambers of commerce have strong relationships with companies, one site selector believes they can promote a greater understanding of site selection by acting as a conduit between the public and private sectors.

The effectiveness of coordination between transportation and county/municipal planning agencies and regional marketing and economic development agencies varies from community to community and State to State. Regarding site selection activities, the most effective state, metropolitan, and local transportation agencies have active relationships with their EDOs. One site selector believes there is a dichotomy of agency philosophies that makes coordination challenging, and said that the mindset of planning agencies, State highway departments, permitting officials, and even utility providers is, “We can’t do that but if you really need us to, we’ll look into it and this is what it will take.” By contrast, the perspective in the economic development community is, “We will make that happen.” This expert referred to this dichotomy as an “engineering philosophy” versus a “sales philosophy.”

In the site selection arena, the most effective transportation agencies have an active relationship with their economic development organizations (EDO).

There is also fragmentation among planning agencies and transit agencies in some regions. For example, a site selection practitioner noted that a certain metropolitan area is served by multiple transit agencies, making it difficult to coordinate efforts. Further, this practitioner noted that the area’s MPO does not have a strong and ongoing working relationship with these agencies. While they may come together on

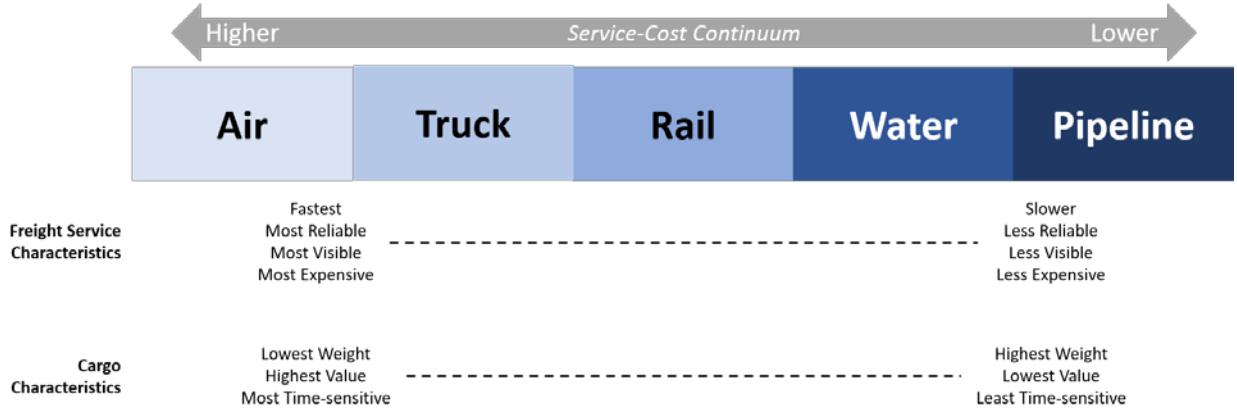
an “ad hoc” basis to pursue major economic development opportunities such as Amazon’s “HQ2,” they typically revert to their relatively uncoordinated roles once the effort is complete. It was also noted that elected officials sometimes have visions for where growth should occur but fail to communicate those visions with regional planning organizations.

5.3. Planning-level Approaches and Actions

In addition to the policy-level challenges, several experts said that planning agencies and departments of transportation need to “know who the players [in site selection] are, who does what, and who knows what.” Corporate site selection decisions “move at a blistering pace,” and public agencies cannot compete successfully for businesses by taking a “nine-to-five approach.” The most competitive regions prepare for corporate locations in advance by assessing the viability of specific sites and making them attractive.

According to one site selector, if there is one thing the public sector must understand about site selection, particularly for manufacturers and distribution and logistics firms, it is the importance of speed-to-market. The number one consideration for companies that ship and receive products is whether the transportation system will reliably allow on-time deliveries and shipments. Figure 4 below illustrates the “continuum” of service and cost levels across the various modes of freight transportation. Generally, the higher the value and time-sensitivity of cargo, the more likely a firm will seek locations that can provide fast and reliable transportation services to move those cargos (both inbound and outbound).

Figure 4: Freight Service and Cost Continuum across Modes



Source: Adapted from National Highway Institute Course FHWA-NHI-139006, “Integrating Freight in the Transportation Planning Process.”

The fragmentation of transportation, land use, planning, and economic development processes and decision-making at the regional level is a real concern for site selection experts. While local governments control land use, counties and States typically drive transportation investment planning and asset management. However, the various jurisdictions and agencies do not always coordinate well on regional economic development goals and the needs of individual industries. Fragmentation affects the site selection process because jurisdictions compete for companies using incentives instead of collaborating to ensure that companies make strategic location decisions.

It is more common for site selectors to interact with economic development organizations (EDOs) than transportation planning agencies. EDOs are more likely to engage in site selection than transportation planning agencies, and generally understand the process better (although that is not always the case). The most effective EDOs host corporate executives on tours of their region, and either host or attend conferences related to site selection. Site selectors sometimes work with EDOs to educate community members about site selection.

Several of the site selectors interviewed noted that land use planning agencies often do not fully understand the functional needs of the industries they are trying to attract, and therefore have not written local codes that accommodate such requirements.

5.4. Communication and Collaboration Strategies and Actions

Public agencies generally understand requests made by site selectors and can provide valuable information, but the process for finding information can be complicated and time consuming. One site selector recommends that municipalities hire "generalists" or "ombudsmen" who can connect the site selection community to the correct government contacts when questions arise. To this end, learning to "speak the same language" and understand the process and constraints faced by businesses in their decisions can contribute to the effectiveness of transportation planners in supporting economic development.

According to one site selector, there are several things planning agencies can do to support the site selection process:

- Talk to economic development partners at the State and local level about "how things work, what clients want, how projects unfold, and what drives location decisions"
- Talk to existing businesses in the region to better understand how their businesses operate and both the strengths and liabilities they encounter in this location
- Read the industry publications Area Development and Site Selection Magazine
- Talk to real estate brokers and meet with site selection professionals in their region
- Invite site selection experts to their office to speak about the process

Given the level of sophistication, analysis, and business-specific requirements often involved in private sector location decisions, it can be difficult for the public sector and particularly transportation planners to understand where they fit into the process, and at what points they have an opportunity to influence outcomes.

6. CASE STUDIES

6.1. Introduction/Overview

This chapter provides detailed case studies of three site selection processes and results at different locations across the U.S. Each represents a different industry, business sector, and State. Of note is the role transportation facility access, functionality, and investment played in each site decision. It is noteworthy that proximity to "high-quality highways," especially Interstate Highways, was a deliberate consideration for firms in each case study. More than one site selection practitioner noted that firms often consider the "Interstate brand" essentially to be a "guarantee" of system reliability and quality.

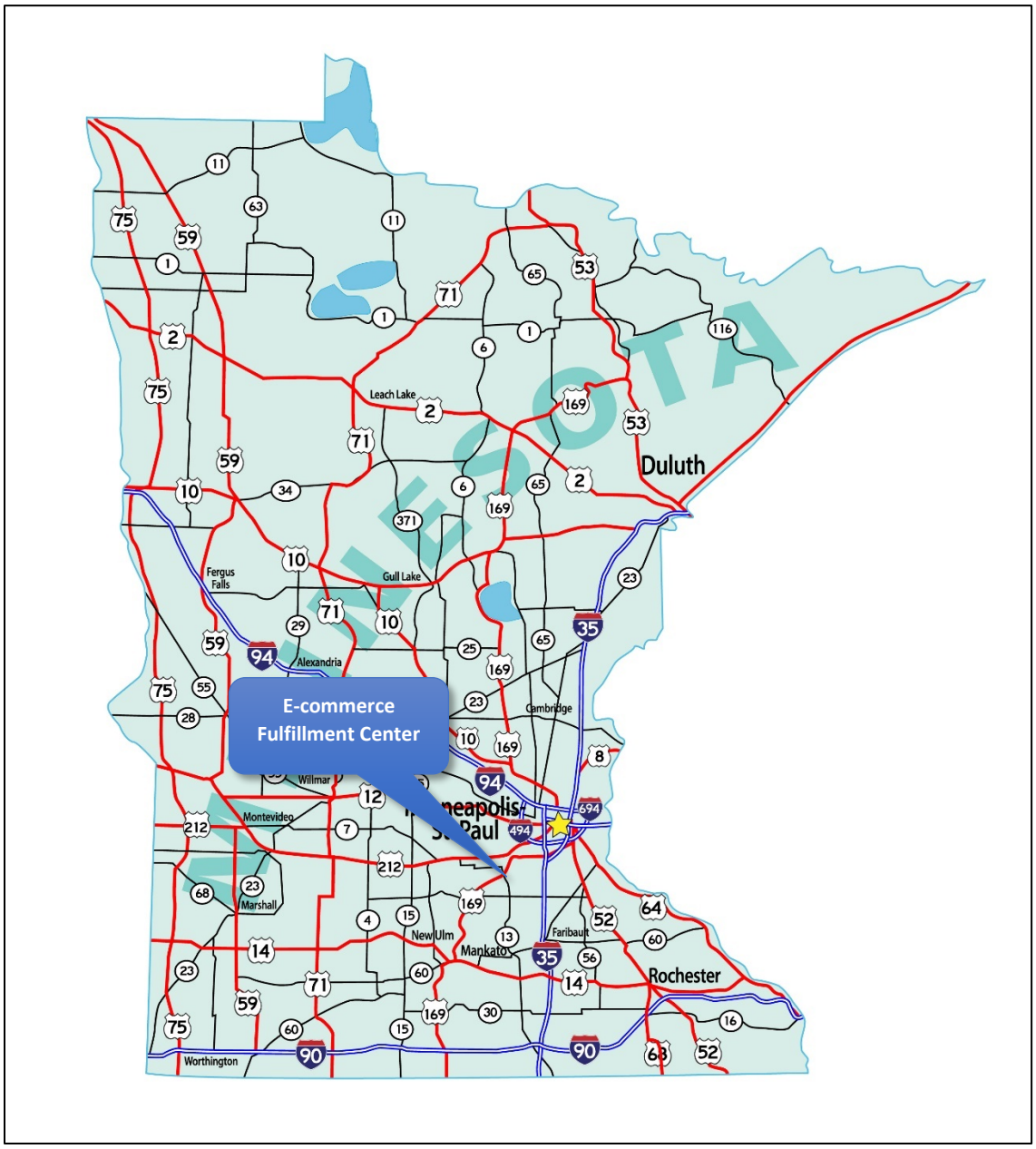
6.2. Case Studies

The following three case studies each offer insights and "lessons learned" on the private sector site selection process and the role of transportation investment in that process:

- **Case Study 1:** E-Commerce Fulfillment Center, Shakopee, Minnesota
- **Case Study 2:** Semiconductor Chip Fabrication Plant, Malta, New York
- **Case Study 3:** Interstate 69 in Southwestern Indiana

CASE STUDY 1: E-Commerce Fulfillment Center in Shakopee, Minnesota

Figure 5. Case Study 1 Orientation Map



Source: Shutterstock.

Introduction & Context

In 2016, Amazon opened an 850,000-square-foot fulfillment center in Shakopee, Minnesota, 25 miles away from downtown Minneapolis (Figure 3).[2] The fulfillment center, known as "MSP1," was the first of its kind in Minnesota when it opened. Robots inside MSP1 lift shelving units called "pods" off the ground and transport them to "picking stations" where human workers take the ordered product and package it for shipment (Figure 7).[3]

Figure 6. Inside the MSP1 Amazon Fulfillment Center

Source: *http://m.startribune.com//peek-inside-amazon-855-000-square-foot-fulfillment-center-in-shakopee/483727161/* ***- Star Tribune***

[2] Jennifer Mayerle, "Inside Amazon's 850K Square Foot, Robot-Staffed Fulfillment Center," *CBS Minnesota,* August 18, 2017, https://minnesota.cbslocal.com/2017/08/18/amazon-fulfillment-center/.

[3] Kavita Kumar, *Star Tribune,* "Amazon has rapidly built up an infrastructure around the Twin Cities – and around the U.S.," May 26, 2018, http://www.startribune.com/amazon-has-rapidly-built-up-an-infrastructure-around-twin-cities/483580211/.

Figure 7. Robot Lifting a Pod in the MSP 1 Amazon Fulfillment Center

Source: *http://m.startribune.com//peek-inside-amazon-855-000-square-foot-fulfillment-center-in-shakopee/483727161/* ***- Star Tribune***

As of summer 2017, MSP1 employed roughly 2,000 workers. Amazon had already built a 150,000-square-foot Amazon sorting facility (MSP5) in 2015, which remains in operation 2.5 miles from the MSP1 site. At MSP5, Amazon separates packages from the fulfillment center by ZIP code and post office to help speed up deliveries.[4] In addition, there is an Amazon transportation delivery station 22.5 miles east of Shakopee in Eagan, Minnesota, and a Prime Now hub 31 miles away in Minneapolis.[5] The delivery station handles packages meant for same-day delivery and the Prime Now hub handles packages delivered within two hours.

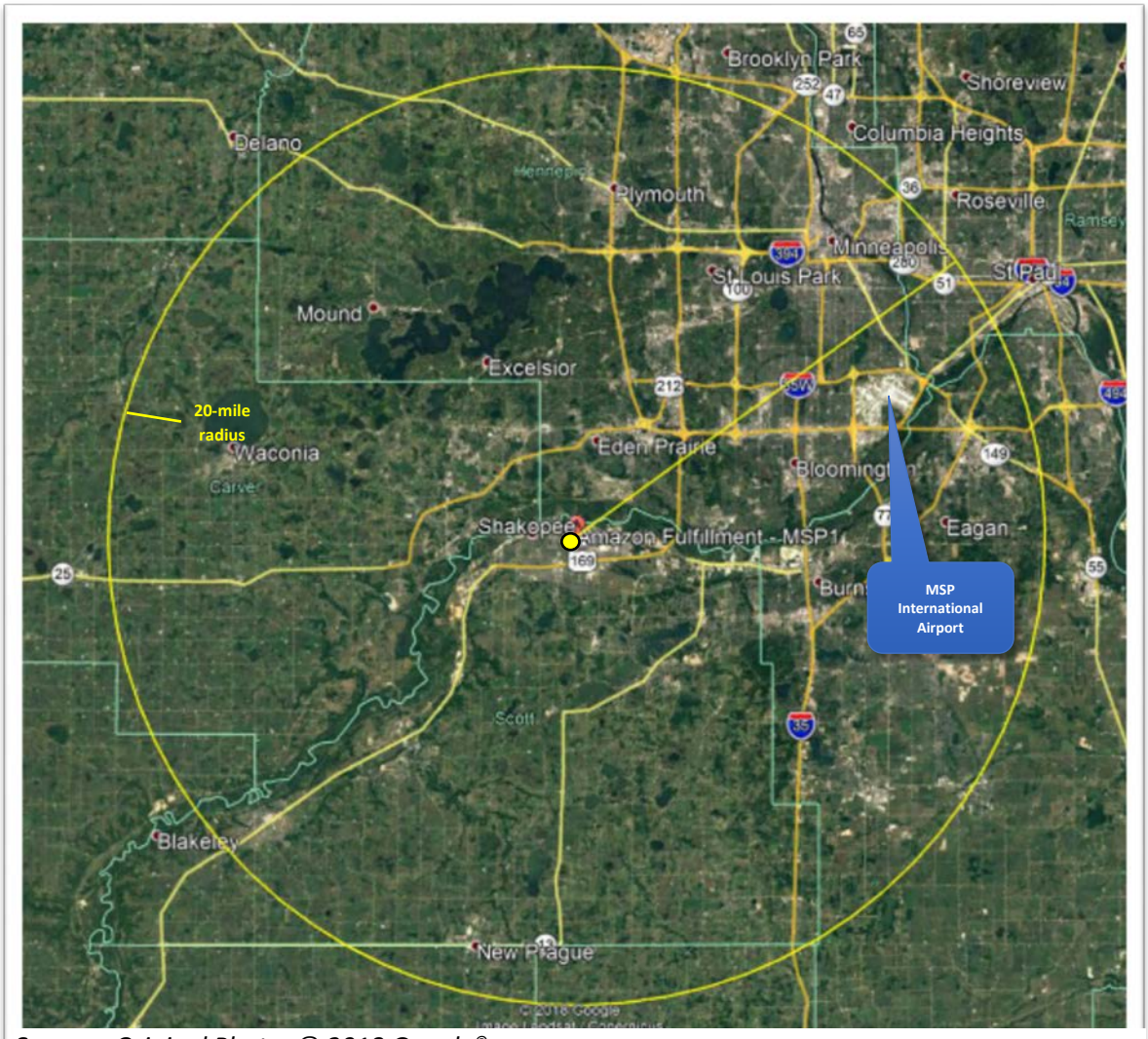
[4] Kavita Kumar, "Amazon has rapidly built up an infrastructure around the Twin Cities – and around the U.S.," *Star Tribune,* May 26, 2018, http://www.startribune.com/amazon-has-rapidly-built-up-an-infrastructure-around-twin-cities/483580211/.

[5] Kavita Kumar, "Amazon to hire additional 200 people for Minneapolis tech office," *Star Tribune,* April 30, 2018, http://www.startribune.com/amazon-to-hire-additional-200-people-for-minneapolis-tech-office/481197671/.

Site Selection

As shown in Figure 8, MSP1 is in an industrial park adjacent to Minnesota State Highway 101 and two miles from Highway 169. Highway 169 is functionally classified as a Principal Arterial.[6] Both highways provide connections to I-494 and I-35. I-494 forms a partial loop around the Twin Cities (Minneapolis and St. Paul). I-35 begins in Duluth, Minnesota, splits in two to serve Minneapolis and St. Paul, and then continues south to Laredo, Texas. According to a former employee of the City of Shakopee, being close to major highways was critical for Amazon because of the amount of product moving in and out of the fulfillment center.[7] Shakopee was able to secure MSP1 because it could offer a site large enough for a

Figure 8: Map of Key Transportation Facilities and Communities within 20-mile Radius of Amazon Fulfillment MSP1 Facility



Source: *Original Photo: © 2018 Google®*

[6] Metropolitan Council Functional Roadway Classification Resources, https://metrocouncil.org/Transportation/Planning-2/Transit-Plans,-Studies-Reports/Highways-Roads/Functional-Roadway-Classification/Functional-Roadway-Classification-Resources.aspx?source=child.

[7] Interview with Samantha DiMaggio on May 14, 2018.

fulfillment center with highway access and other necessary infrastructure. No improvements were made to nearby highways to attract Amazon.

Factors Influencing Site Selection

Because of available land, already-established neighboring operations, and the accessibility of necessary transportation facilities, Amazon decided to locate in suburban Scott County within the City of Shakopee. In 2015, the City of Shakopee expressed concern that the area within a few miles of the MSP1 facility did not have enough workers to meet Amazon's hiring needs, but the company indicated that it was comfortable with the workforce availability in the region.[8]

Financial support from the City of Shakopee also likely played a role in Amazon's decision. The company was required to purchase 186 Sewer Availability Charge (SAC) Credits. Shakopee has a program that helps companies pay for some of their credits. Amazon was awarded 62 credits valued at $183,520 and they were required to pay the remaining balance of 124 credits at a cost of $2,960 per credit.

The cost of housing in Shakopee is about 25 percent higher on average than for the entire State of Minnesota,[9] meaning that there is a lack of affordable housing for people employed in relatively low-paying service industry positions such as those at the Amazon MSP1 facility. Despite its earlier perspective, Amazon found it difficult to fill positions at MSP1 with workers from the immediate Shakopee area. However, a worker pool was identified within the ethnic Somali community in the City of Minneapolis, about 20 miles northeast of MSP1. Amazon partnered with a local nonprofit representing the Somali community and arranged to pay for daily coach bus service for workers between Minneapolis's Cedar-Riverside neighborhood and MSP1 seven days a week.[10] Metro Transit, the Twin Cities' public transportation agency, also provides bus service from Minneapolis to Shakopee, with one line stopping at the entrance to MSP1.

Parties Involved

The City of Shakopee, Scott County, and the Scott County Community Development Agency worked with Amazon to locate MSP1. The Minnesota Department of Employment and Economic Development (DEED) and the Minneapolis Saint Paul Regional Economic Development Partnership (Greater MSP) also played a role. They assisted Amazon with their site selection efforts and provided information on available incentives. In addition, Amazon partnered with the Confederation of Somali Community in Minnesota to identify workers and establish the bus service to and from MSP1.

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[8] Sam Black, "Amazon plans $220M investment in Shakopee," *Minneapolis/St. Paul Business Journal,* April 30, 2015, https://www.bizjournals.com/twincities/blog/real_estate/2015/04/amazon-plans-220m-investment-in-shakopee.html.

[9] Sperling's Best Places, https://www.bestplaces.net/cost_of_living/city/minnesota/shakopee.

[10] Ibrahim Hirsi, "A newly familiar sight in Minneapolis' Cedar-Riverside neighborhood: the Amazon bus," *MinnPost,* May 30, 2017, https://www.minnpost.com/good-jobs/2017/05/newly-familiar-sight-minneapolis-cedar-riverside-neighborhood-amazon-bus.

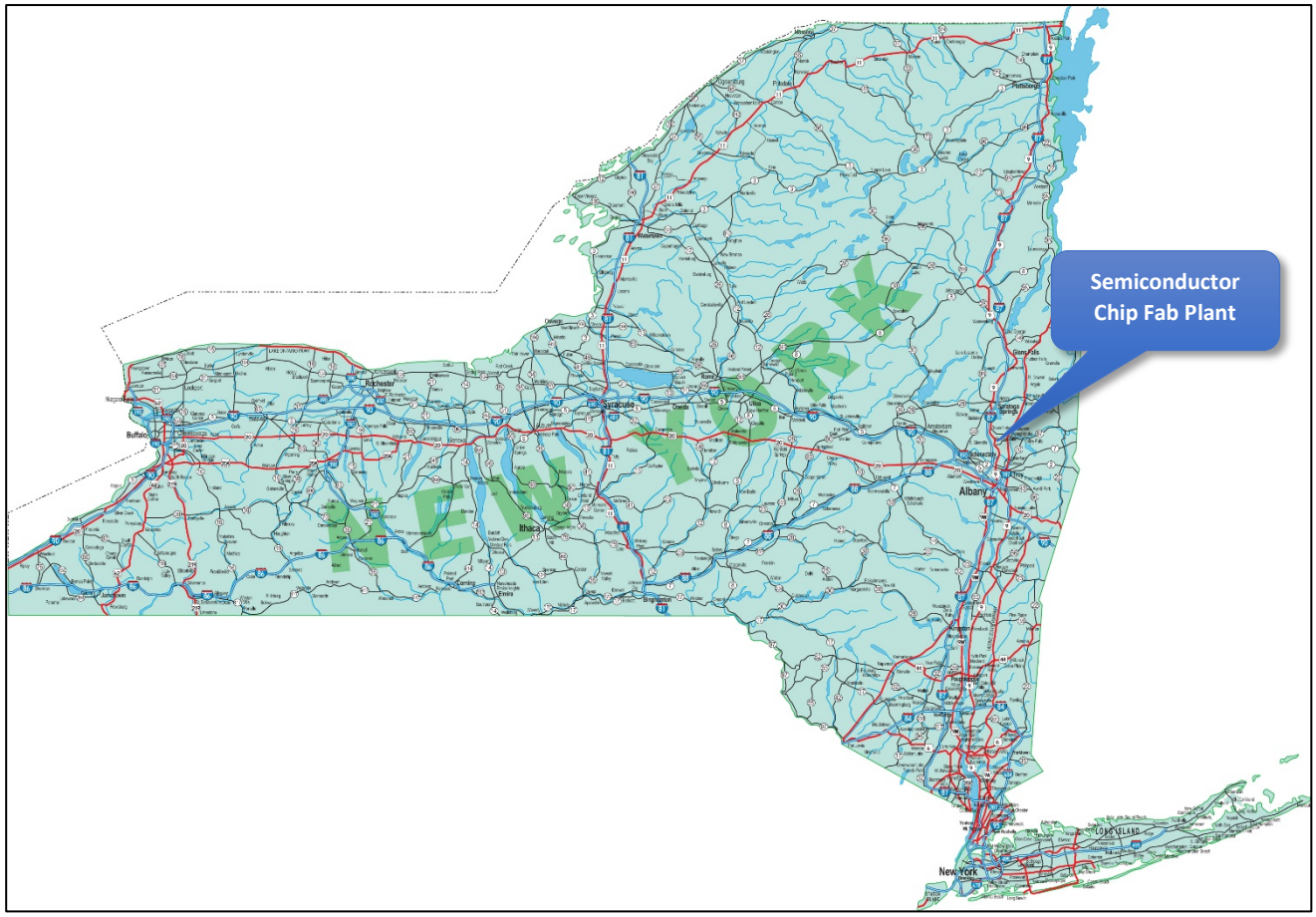
Outcomes & Lessons Learned

Several key lessons may be distilled from this case study:

- There are real tradeoffs involved when choosing where to locate a large facility. Suburban locations often offer more space and lower land costs than urban areas but could make accessing workers difficult; this is especially true if a company's workforce is transit-dependent.
- Reliable highway connections are essential for fulfillment centers and sorting facilities that must transport products to customers throughout a metropolitan region within a matter of hours.
- Locations along major Interstate Highway corridors that connect multiple states and/or major metropolitan areas facilitate efficient and reliable supply chain operations.
- Local government can support site selection decisions by ensuring the necessary workforce is there for companies and providing reliable public transportation for employees.

CASE STUDY 2: Semiconductor Chip Fabrication Plant, Malta, NY

Figure 9. Case Study 2 Orientation Map



Source: Shutterstock.

Introduction & Context

GlobalFoundries (GF) is a semiconductor company with 18,000 employees and locations around the world.[11] In 2012, the firm opened Fab 8, a manufacturing facility in Malta, New York, about 20 miles north of Albany (Figure 9). Since 2009, when construction began, GF has invested over $15 billion in the facility.[12] As of 2018, Fab 8 employs about 4,000 full-time workers plus hundreds of contract workers.[13]

Figure 10: GlobalFoundries Fab 8 Plant, Malta, NY

Source: Shutterstock

Site Selection

The site that GF's Fab 8 facility now occupies has been under consideration for a range of technology manufacturing-related investments for at least two decades. In the early 2000s, Advanced Micro Devices Inc. (AMD), the world's second largest semiconductor manufacturer, began to evaluate this site and others across New York State and Germany. In 2006, AMD announced plans to build a new $3.2 billion chip plant in Malta. This multi-billion dollar deal would locate the most advanced semiconductor manufacturing facility in the world at this site and also comprise the largest private sector industrial investment in New York State history. In 2009, GlobalFoundries (GF) was created by the divestiture of the manufacturing arm of AMD, expanded through the acquisition of Chartered Semiconductor in 2010, and further expanded through the acquisition of IBM Microelectronics in 2015. The Malta Fab 8 facility opened for production in 2012 and has henceforth been considered a GF site.

Critical Role of Interstate Highway Access

As shown in Figure 11, the GF facility is within three miles of two access points to I-87 (Adirondack Northway). GF officials said that direct access to an Interstate Highway was an essential element of the

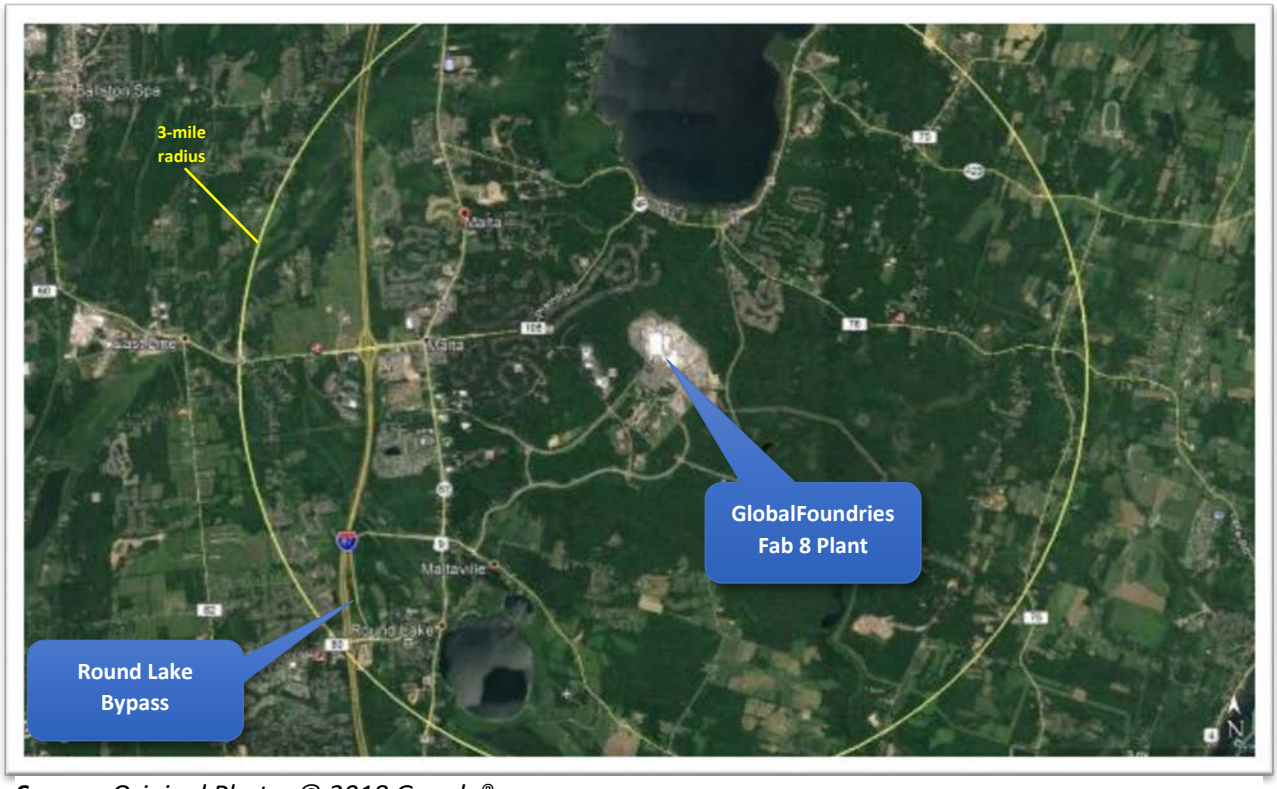
[11] Global Foundries "About Us" page, accessed June 17, 2018, https://www.globalfoundries.com/about-us.
[12] Chelsea Diana, "GlobalFoundries names new CEO, general manager," March 9, 2018, https://www.bizjournals.com/albany/news/2018/03/09/globalfoundries-names-new-ceo-general-manager.html.
[13] Interview with Greg Connors and Jason Van Buren on March 22, 2018.

site selection process. In fact, as part of the enabling land use legislation for the site, the company lobbied to embed a new dedicated I-87 exit (known as "Exit 11A") for the facility that was intended to proactively mitigate any issues related to increased passenger and freight vehicle traffic. In 2016, however, a regional transportation study recommended implementing a set of less costly local road improvements that would address anticipate traffic issues at least as effectively as a new exit.[14] The new "Exit 11A" has since been removed from the updated enabling legislation.

Roughly 70 percent of GF's 4,000 employees live in Saratoga County, where the plant is located, and the majority use I-87 for their commutes. As Fab 8 operates 24 hours a day, GF views its proximity to an Interstate Highway as essential, especially with the difficult winter weather northeastern New York State can experience. GF officials said that Interstate Highways represent a "dependable brand" of roadway that they know will generally be operated and maintained to the highest level, in comparison to non-Interstate Highways.

When the final Fab 8 facility site decision was made in 2007, the site planning and environmental review processes identified potential traffic concerns due to access from I-87 to the plant only being available on NY Route 67 through the center of the small village of Round Lake. To mitigate this issue, the State of New York required the development of an additional route to provide direct access to the site via a new Round Lake Bypass (route, roadway, and informational signage shown in Figure 12). According to the

Figure 11. Access to I-87 for GlobalFoundries Fab 8



Source: *Original Photo: © 2018 Google®*

[14] The SCRTS Study Advisory Committee, "Saratoga Regional Traffic Study," January 2016. http://www.cdtcmpo.org/images/othercdtcproducts/SCRTS_Final_Report_allreduced.pdf.

company, a site more distant from I-87 would have been nearly impossible to use because it would have been too difficult for employees to get to work.

Figure 12. Roundabout at Intersection of Round Lake Bypass with NY 67 and I-87 Access Point (left) and Information Sign Directing GlobalFoundries Traffic Away from Residential Area

Source: *https://www.timesunion.com/local/article/Round-Lake-fears-toxic-risks-1346143.php* ***- Albany Times Union***

Importance of Timely Access to International Transportation Facilities

The GF site selection criteria also required an international airport within 45 minutes' drive by truck or car. GF primarily uses air to ship high-value products, making airports with scheduled freight service necessary. The company uses FedEx cargo services at Albany International Airport for some shipments but generally ships finished products and receives large tools and equipment by truck through JFK International Airport in New York City, which is 3-4 hours away. If GF has an equipment failure within the plant, the resulting production delay can be very costly. Generally, shipping by air is the only way GF believes it can reliably obtain needed replacement parts in a timely and cost-effective manner.

In addition to airport access, Fab 8 must also be within 3-4 hours of an ocean port for importing chemicals that cannot travel via air because of flight restrictions. The company currently uses the Port of New York and New Jersey for these needs and has also considered using the Port of Montreal, which is also within 3-4 hours via I-87 (not including any border wait and customs inspection time).

Proximity to customer markets was relatively less important to GF when choosing its location for Fab 8. This is because the company has over 250 customers around the world who do not necessarily care where GF is located; they care more that the products shipped from the GF plant can be transported to

them quickly. Semiconductors sold by GF are found in computers, cell phones, and many other products worldwide.

Alternative Locations Considered

GF considered the distance to both JFK International Airport and O'Hare International Airport in Chicago when deciding where to locate Fab 8. Ultimately, the firm chose to locate closer to JFK. The company also eliminated Utica, New York, from its list of contenders because of its longer distance to airports in Albany and Syracuse.

Parties Involved

Empire State Development, the umbrella organization for New York State's two principal economic development financing entities (New York State Urban Development Corporation and the Department of Economic Development) took the lead on coordinating government investments and tax incentives that made the Malta site attractive to GF. Local governments, including Saratoga County and the Town of Malta, also provided assistance and made information and resources available throughout the site selection process. The Saratoga Economic Development Corporation (SEDC), a private sector, non-profit organization that works to retain existing businesses while creating new jobs in Saratoga County, was the driving force behind preparing the site for a groundbreaking in 2008-2009. According to GF officials, the site's readiness and the availability of transportation, electric, and water/sewer infrastructure at the current site was critical. The firm would not choose a location that required them to wait for local government to build the infrastructure they needed.

In addition, GF believes the Capital District Transportation Committee (CDTC), the four-county Albany region's metropolitan planning organization (MPO), has done a good job of forecasting traffic and infrastructure needs associated with the key intersections within Saratoga County that affect GF access and egress. New York State Department of Transportation (NYSDOT) was principally engaged in the planning, design, engineering, and construction of roadway facilities on state-owned facilities.

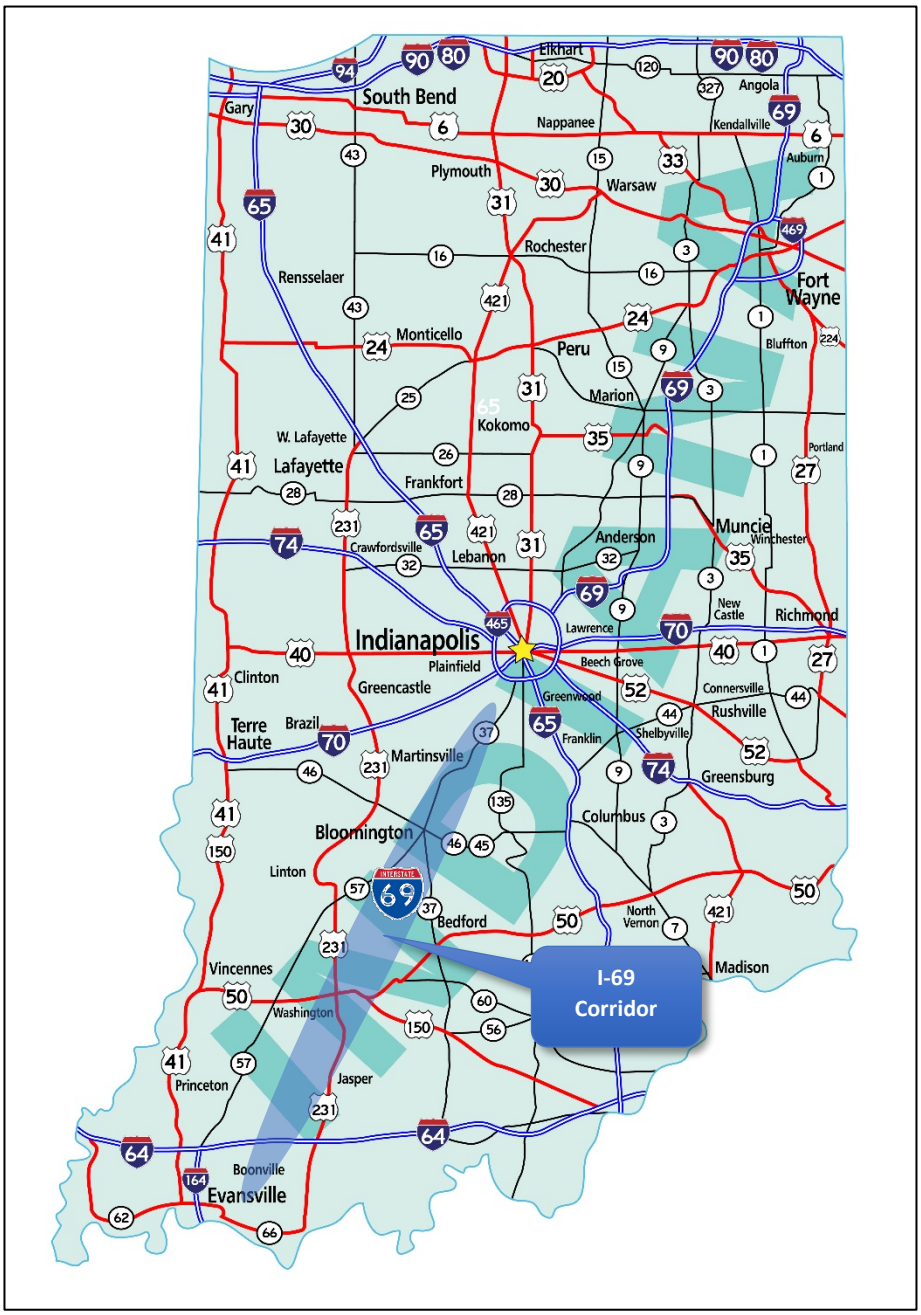
Outcomes & Lessons Learned

Several key lessons may be distilled from this case study:

- Reliable and proximate access to an Interstate Highway is critical for certain firms, particularly those that depend on 24/7 access for employees and supply chain movements.
- Proactive collaboration and communication between public, private, and non-profit agencies and organizations regarding transportation, land use, and infrastructure needs, plans, and actions can help facilitate a firm's selection of a locally-favored site.
- A clear strategy for transportation and other infrastructure investment and development that matches the needs of the types of firms or industries that a region or state seeks to attract can facilitate successful economic development initiatives.

CASE STUDY 3: Interstate 69 in Southwestern Indiana

Figure 13. Case Study 3 Orientation Map

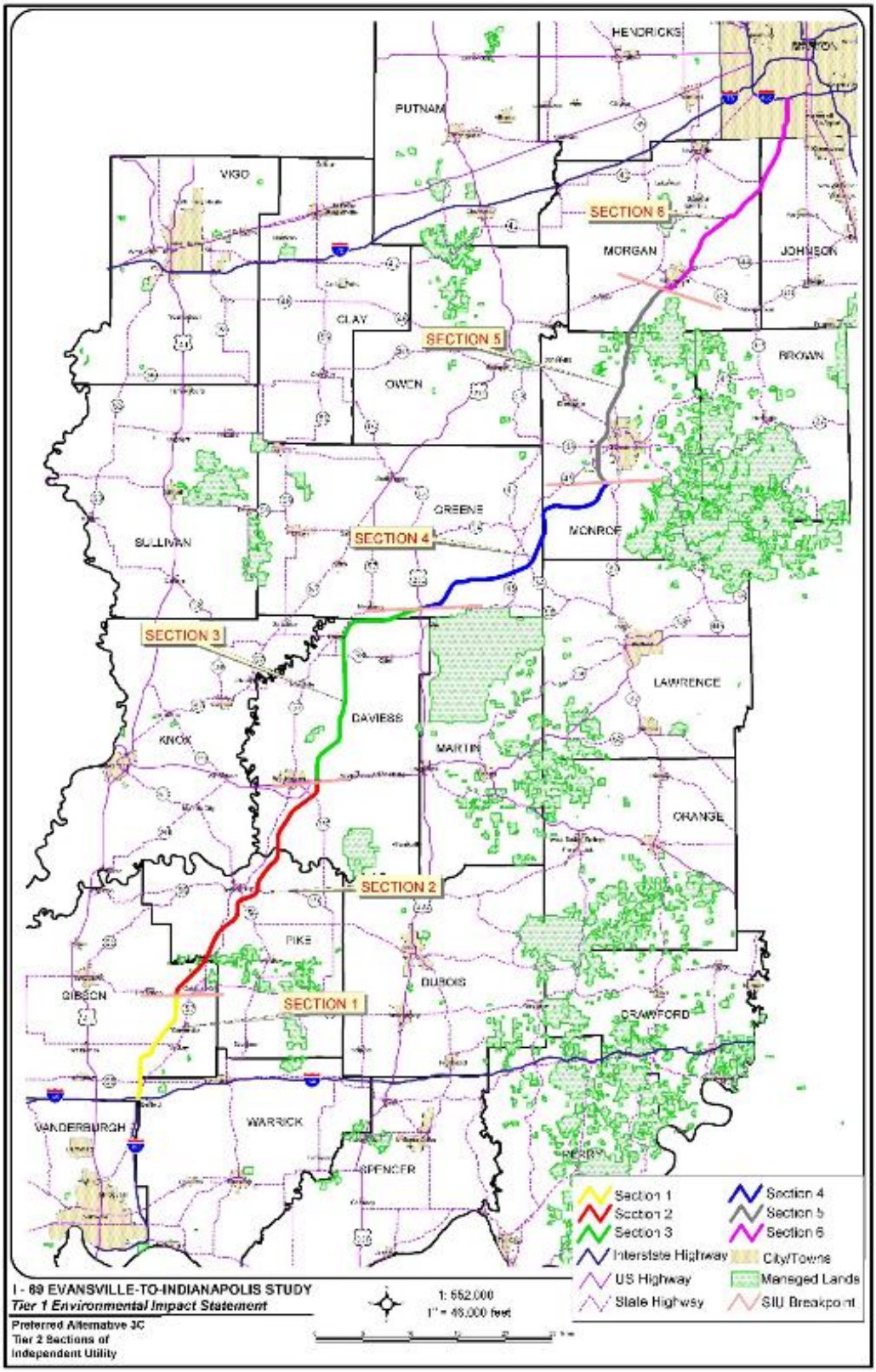


Source: Shutterstock.

Introduction & Context

Indiana is traversed by several Interstate Highways, most of which converge in Indianapolis forming a radial pattern. Interstate 69 (I-69) is one exception to this. As of September 2018, I-69's path through Indiana is interrupted by an approximately 30-mile gap (where the highway is not limited-access) between Indianapolis and Martinsville (Figure 13). However, the other segments of the new highway (sections 1-5) between Martinsville and Interstate 64 near Evansville have been completed. Sections 1-4 are new alignments and Section 5 is an upgraded facility (Figure 14). The uncompleted section 6 will connect Martinsville with Indianapolis. Indiana Department of Transportation (INDOT) expects to start construction of section 6 in 2020. Figure 15 shows a completed section of I-69 in Southwestern Indiana.

Figure 14. Map of I-69 Sections



Source: *I-69 Evansville-to-Indianapolis Study Tier 1 Environmental Impact Statement*

Figure 15. Interstate 69 in Southwestern Indiana

Source: *https://www.in.gov/indot/projects/i69/index.htm* ***- Indiana Department of Transportation***

According to INDOT, "The new I-69 between Evansville and Indianapolis is a key component to the future economic vitality of southwestern Indiana and will connect an entire region with improved access to jobs, education and healthcare."[15] Much of southwestern Indiana and the I-69 corridor is rural, with the exception of Evansville (pop. 120,000), Bloomington (83,000), Washington (12,000), and Martinsville (12,000). Since sections 1-5 opened, several companies have located facilities along the corridor. Further, with the pending opening of section 6, more firms have already located within the corridor or expressed their intention to do so once these last sections are complete.

Firm Site Selections

Daviess County (I-69 Sections 2 and 3)

Several companies have located within the I-69 corridor in southwestern Indiana since sections 1-4 were completed (section 4 opened in 2015). In 2016, a $10 million cross-docking warehouse opened in Washington, Indiana, near the intersection of I-69 and US-50.[16] The facility is 18,000 square feet and

[15] "I-69 - Evansville to Indianapolis," accessed June 14, 2018, https://www.in.gov/indot/projects/i69/index.htm.

[16] Cross-docking involves transferring goods from an incoming truck or railcar directly onto an outbound truck or railcar. This is different from warehousing, which involves storing goods between inbound and outbound shipments. Dan McGowan, "County Leaders Show They 'Get Things Done,'" *Inside Indiana Business,* November 14,

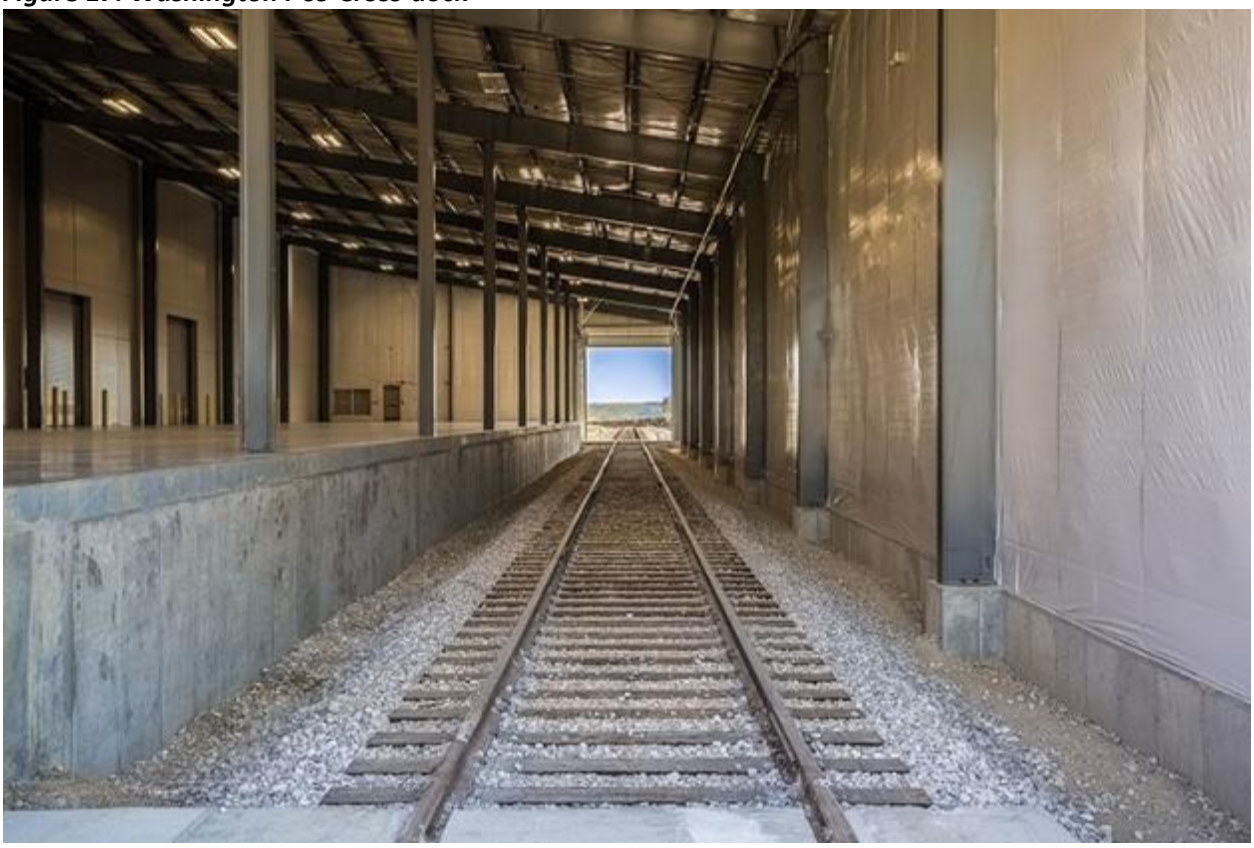
connects semi-trailers or rail cars to a CSX line (Figure 15). Companies using the facility include Grain Processing Corp., Graber Post Building Inc., K&K Industries Inc., Daviess County Metal Sales, Olon Industries, Inc., and Alliance Barrier Films. Grain Processing Corp. will benefit from the ability to load shipments onto rail at the new facility instead of having to haul them by truck to Evansville for rail service.

Figure 16. Location of Daviess County

Source: https://www.worldatlas.com/na/us/in/c-daviess-county-indiana.html - World Atlas

2016, http://www.insideindianabusiness.com/story/33706885/county-leaders-showcase-they-can-get-things-done.

Figure 17. Washington I-69 Cross-dock



Source: ***http://garmong.net/garmong-development/available-properties/washington-69-crossdock-warehouse/*** - ***Garmong Construction Services***

Daviess County also built a 40,000-square-foot adjoining facility to attract additional companies and expansions (Figure 16).[17] The director of the Daviess County Economic Development Corporation believes Washington is especially well-positioned to benefit from I-69's completion because the county is at the junction of the Interstate and US-150, which travels east-west.

[17] The Daviess County Economic Development Corp., "Manufacturer Opens $25M Operation," *Inside Indiana Business,* August 18, 2015, http://www.insideindianabusiness.com/story/29820057/manufacturer-opens-25m-operation.

Figure 18. Washington I-69 Cross-dock Warehouse

Source: *http://garmong.net/garmong-development/available-properties/washington-69-crossdock-warehouse/* - ***Garmong Construction Services***

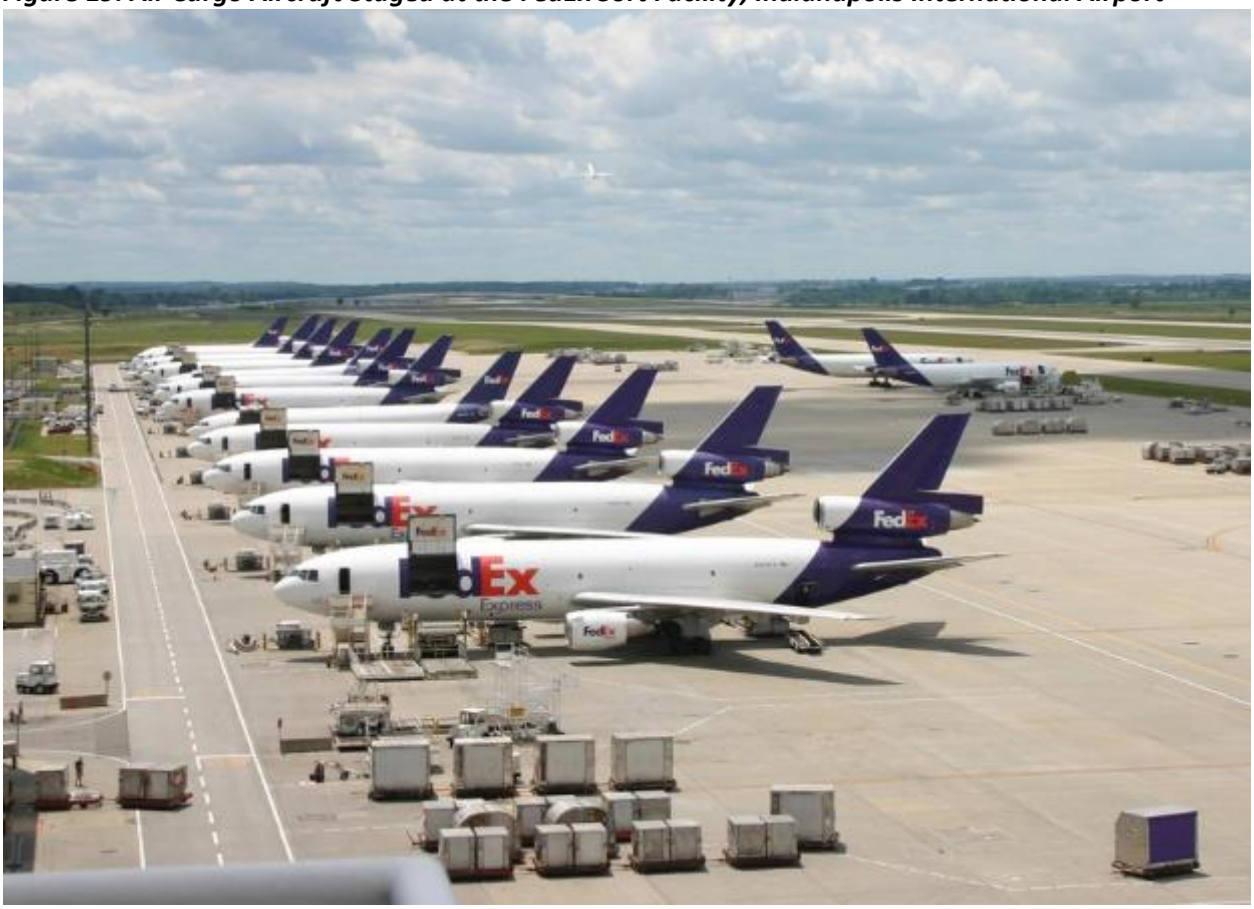
Bloomington to Indianapolis (I-69 Sections 4, 5, and 6)

Cook Group is a medical device manufacturer in Bloomington, Indiana. The company ships a steady stream of medical devices and supplies, most of which travel through Indianapolis International Airport, which has the second largest FedEx facility in the country (Figure 19). INDOT routed Section 6 of I-69 to connect with the airport via I-465.[18] The expansion of I-69 to Indianapolis will allow the company to streamline its distribution and increase reliability. According to a Cook Group executive, "when you have product going over road that has stoplights and turnoffs, statistically, there's just a higher chance for wrecks, slowdowns and other issues versus the Interstate Highway System. The critical nature of the products we make that are used almost exclusively in hospital settings—they have to be delivered reliably."[19]

[18] Interview with Tim Feemster, March 5, 2018.

[19] Kylie Veleta, "Large Logistics Operations Applaud I-69 Route South of Indy," *Inside Indiana Business,* June 9, 2016, http://www.insideindianabusiness.com/story/32182718/large-logistics-operations-applaud-i-69-route-south-of-indy.

Figure 19. Air Cargo Aircraft Staged at the FedEx Sort Facility, Indianapolis International Airport



Source: *https://www.chacompanies.com/projects/ind-fedex-apron-expansion/* ***- CHA Consulting***

The president of Venture Logistics in Indianapolis expects the I-69 extension to reduce the travel time to Evansville by 25 minutes as well as increase safety.[20] The company also planned to build a truck-rail facility near its Indianapolis headquarters at the time. While the plans were not dependent on the completion of I-69, the company did expect the Interstate Highway to make the facility more viable.

Parties Involved

In Daviess County, the Daviess County Economic Development Corporation funded the construction of the Washington cross-dock facility using a tax increment financing (TIF) district.[21] Municipalities along the corridor were involved in routing each section of I-69, especially Section 6 and its connection with Indianapolis International Airport via I-465.

[20] Kylie Veleta, "Large Logistics Operations Applaud I-69 Route South of Indy," *Inside Indiana Business,* June 9, 2016, http://www.insideindianabusiness.com/story/32182718/large-logistics-operations-applaud-i-69-route-south-of-indy.

[21] Mike Grant, "Ground broken on new $10 million Daviess County economic development building," *Indiana Economic Digest,* July 18, 2015, http://indianaeconomicdigest.com/main.asp?SectionID=31&SubSectionID=123&ArticleID=80463.

Outcomes & Lessons Learned

Several key lessons may be distilled from this case study:

- The conversion of state highways to limited-access Interstate Highways can have a noticeable impact on business attraction by improving travel speed, reliability, and safety.
- Multimodal connections are important for attracting different industries. Cross-dock facilities that allow truck-to-rail transfers can attract companies that ship agricultural commodities and durable goods. Interstate Highways can encourage high-value manufacturing when they provide connections with airports offering air cargo services.
- Companies can locate facilities in anticipation of Interstate Highway section openings, meaning plans for highway routing can stimulate economic development before a project is complete.
- Rural areas can leverage the value added by new Interstate Highway access by using value capture techniques such as TIF districts to fund economic development-supportive infrastructure and facilities.

7. GLOSSARY

Business drivers (or Business need) – The economic factors that influence the success of or risk to a business entity.

Cost model – A spreadsheet-based analysis that examines the costs of baseline operations compared to one or a series of alternate options. Used to examine both the financial feasibility and payback period of a contemplated option.

Distribution network - An interconnected group of storage facilities and transportation systems that receive inventories of goods and then deliver them to customers. It is an intermediate point to get products from the manufacturer to the end customer, either directly or through a retail network.

DOT (Department of Transportation) – Governmental agency devoted to transportation.

Economic development - The process by which a nation improves the economic and social well-being of its people. The definition may vary depending on context but can include the activities of business attraction, business formation and retention, and community development as well.

EDO (Economic Development Organization) - An organization dedicated to the economic development of a region, be it a subnational area such as a town, city, county, province, or state; a whole nation; or transnational regions unified through economic integration.

Exit costs – The costs incurred to stop operations at, decommission, and/or close a facility or location.

Facility – Any given business location including associated production, logistics, administration or other operations at that location.

Field analysis – The practice of conducting investigations at the proposed location option, collecting data there as opposed to "desk analysis."

Flexibility – The ability to adapt to more than one possible outcome.

Gateway criteria – criteria that must be in place as a minimum threshold for consideration in a location study.

Incentives - Cash or near-cash assistance provided on a discretionary basis to attract or retain business operations. Can include tax credits, grants, training assistance, low-cost loans or other similar assistance.

Land use planning – Government activities that seek to manage and regulate the development of land within their jurisdictions and prevent land use conflicts.

Location screening – A weighting and ranking exercise by which a long-list of location options is reduced in size by eliminating the least favorable options as evaluated against a set of business criteria.

Logistics - The efficient and effective integrated management of production and delivery of a product or service.

MPO (Metropolitan Planning Organization) - A federally mandated and federally funded transportation policy-making organization in the United States that is made up of representatives from local government and governmental transportation authorities.

Negotiations – Within the context of a site selection process, those discussions between the company, community representatives, and real estate owners by which the participants arrive at mutually acceptable terms for incentives and real estate lease or ownership.

Network modeling - Representations of possible travel choices across a geographic area, showing possible impacts for travel time, cost, network resiliency, and flexibility.

Recurring costs – Costs that are incurred on a regular basis as the result of ongoing business operations.

Regulatory environment – The set of business and land use laws, rules, and the institutional processes by which these are affected in any given jurisdiction.

Research & development – The work a business conducts toward the innovation, introduction and improvement of its products and procedures. A series of investigative activities to improve existing products and procedures or to lead to the development of new products and procedures.

Resiliency – The ability of a network or business operation to recover from and adapt to a disruptive event or events.

RPO (Regional Planning Organization) - an organization that identifies local transportation, land use, housing, utility, and related needs, conducts planning, assists local governments, and supports the statewide planning process.

Screening criteria – location criteria that are used to determine the relative attractiveness of a set of location options in a site selection.

Site selection - The practice examining locations for a new or expanding facility, both for business and government. Site selection involves measuring the needs of a new project against the merits of potential locations.

Stakeholders – In the context of a site selection project, the term stakeholders involves those individuals within the corporation who will either make or support the location decision. These may include (but are not limited to) executives, operational personnel, legal, HR, and real estate professionals.

Startup costs – Costs that are incurred one-time as a result of purchasing, constructing, outfitting, and commissioning a new facility.

Tax Increment Financing (TIF) - Tax increment financing (TIF) is a financial tool used by local governments to promote economic development and redevelopment. Tax revenue generated from properties within a designated TIF district into two components, base (normal) revenues and incremental revenues, which may be used for development projects.

Transportation planning - The process of defining future policies, goals, investments, and designs to prepare for future needs to move people and goods to destinations.

Utilities – In the context of site selection, critical non-transportation infrastructure including (but not limited to) water, sewer, gas, electric, and telecommunications.

Weighting and ranking model - A spreadsheet- or GIS-based analysis that examines the relative impact of various screening criteria on a location decision. By varying weights, the user can examine tradeoffs between – for example – costs, market access, and workforce availability.

Weighting system – A full weighting scenario within a weighting and ranking model.

Workforce - The people engaged in or available for work, either in a country or area or in a particular company or industry.

8. SITE SELECTION-RELATED ORGANIZATIONS

There are many agencies and organizations across the country that are directly or indirectly engaged in the site selection process. In local communities, these entities are often the chamber of commerce, industrial development agency, and/or economic development agency. At the state level, the statewide economic development agency is frequently the lead entity for engaging with site selectors. There are also multi-jurisdictional authorities with roles in private sector site selection, such as the Appalachian Regional Commission.

Nationally, there are a variety of membership associations and government agencies that conduct research, training, policy, and related support and information on site selection. The following lists a selection of some of the key organizations.

Association of University Research Parks	http://www.aurp.net/
International Economic Development Council	https://www.iedconline.org/
National Business Incubation Association	http://www.nbia.org/
National Rural Economic Developers Association	http://www.nreda.org/
Site Selectors Guild	https://siteselectorsguild.com/
Urban Land Institute	https://uli.org/
U.S. Economic Development Administration	https://www.eda.gov/

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Federal Highway Administration

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