



Memphis Regional Megasite Site Assessment Study

Tennessee Department of General Services (DGS)
Nashville, TN | June 2021

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Executive Summary

Since the original site certification of the Memphis Regional Megasite (MRM) in 2006, there has been significant research, marketing and capital investment devoted to the 4,100-acre property. Unfortunately, those efforts have not landed a prospect. Gresham Smith has been charged by the State of Tennessee to complete a high-level, objective, third-party assessment of the MRM. This study identifies features that may be contributing to the lack of success in landing a highly-prized prospect to fulfill the MRM vision, which was to land an Original Equipment Manufacturer (OEM). The study relies on existing information and data. Data was obtained from Tennessee Department of Economic and Community Development (TNECD) and from public sources.

There is steep national and local competition giving prospects choices. The State provided a list of 18 prospects that have considered the MRM and reasons why the MRM was eliminated from further evaluation. Separately, a desktop ranking of the key criteria necessary for an OEM was completed. The data reveals there isn't just one reason for elimination. There are three uncertainties. Fixing one will not resolve the deficiency.

Three Uncertainties

Workforce concerns, infrastructure uncertainties and quality of life all received very low scores when evaluated against key criteria required by an OEM.

1. Workforce within a reasonable 60-minute drive time was evaluated. Deficiencies in available workforce to support key standard occupation codes (SOCs) needed by an OEM and lack of concentrations of the top SOC were noted. The profile of the workforce suggests the site or the MRM is geared more toward warehousing and distribution versus OEM or heavy manufacturing; the profile is slightly less than the national average.
2. Lack of utility service directly to the site and associated permitting and legal hurdles creates uncertainty and could impact the overall construction schedule for a prospect. This creates doubt for a prospect. It does not lend the site to being as "shovel ready" as competitive sites and with utility infrastructure to the boundary of the site with designated authorities in place to manage the utility service.
3. Quality of life ranking for the region serving the MRM is lower than competitive regions. The index score is low enough to be a significant factor for prospects who prioritize quality of life for the management and company culture often needed by large manufacturing facilities with engineering centers, world headquarters and/or regional offices.

When a site only has one deficiency in the key site selection criteria, the site may make it to the final round and successfully land the prospect. When multiple deficiencies exist, the uncertainties compound. Based on information provided and supported by feedback from the 18 prospects which included OEMs, **the MRM faces multiple uncertainties in key criteria, meaning unless the MRM is the only option or reduces these existing uncertainties to compete with available sites, selection will be unlikely.**

Tennessee is supporting the MRM by exploring utility ownership and operations options, providing aggressive incentive packages, robust marketing, advancement of permitting and appropriating more than \$174 million to no avail.

A target industry analysis based on the current marketplace and a competitive assessment may provide insight into industries to target and the viability of the MRM to compete for these industries against other sites available across the country. Key industries likely to grow post pandemic include commercial & residential real estate, intermodal & logistics, energy & utilities, and healthcare, science & technology.

Introduction

Purpose & Scope

The Memphis Regional Megasite (MRM) is one of the largest available megasite properties in the southeast and Texas¹. Based on the pattern of success in the state shown by the existing automotive facilities and their suppliers, the original vision for the MRM was to target an Original Equipment Manufacturer (OEM) to anchor an economic boost for the West Tennessee region. This vision included high quality jobs, continued private sector investment and future, positive ripple effects for West Tennessee.

Since the original site certification of the MRM in 2006, there has been a significant amount of research, marketing and capital investment devoted to the 4,100-acre property. Unfortunately, those efforts have not resulted in selection.

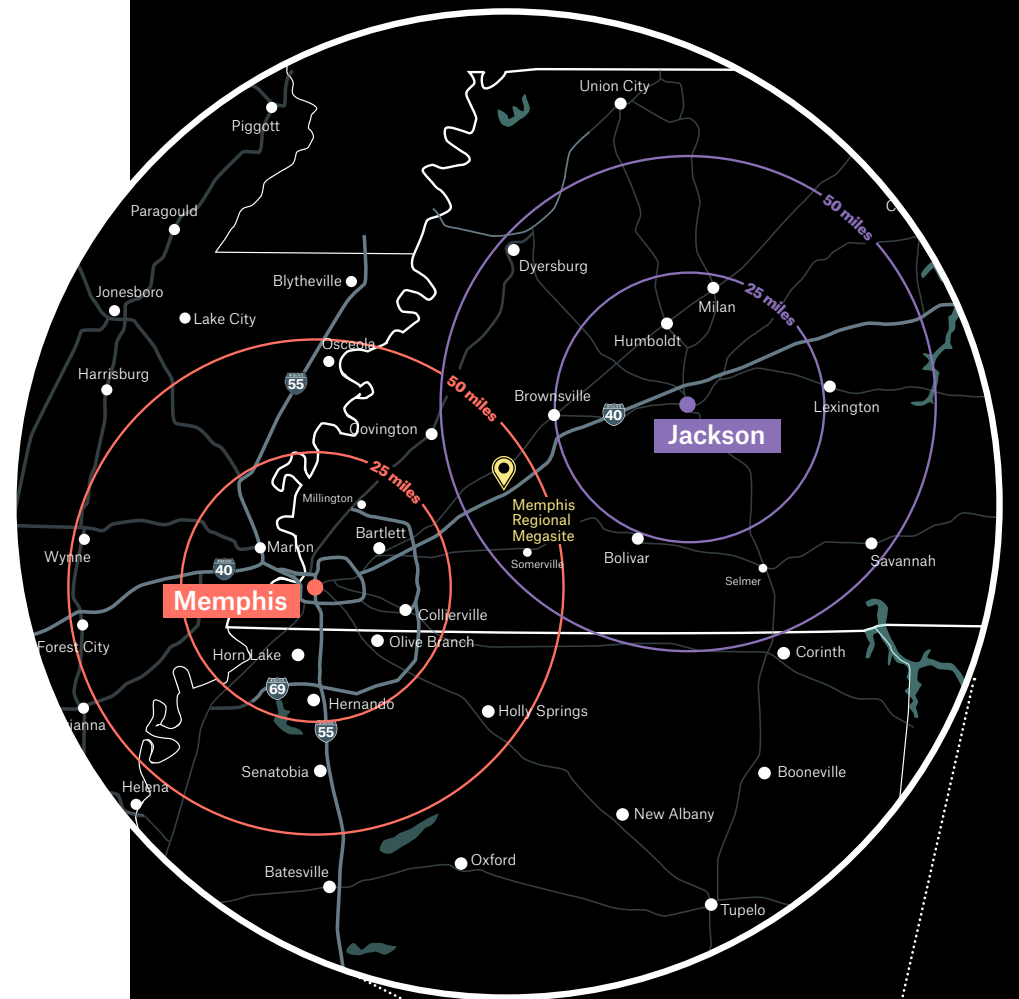
When an industrial site such as the MRM has been on the market for a significant period of time, it is beneficial to review the site in a new light, challenge prior assumptions, determine if a myopic marketing view has developed, or the economic outlook has modified the targeted industries. This fresh look at the MRM can inform the State regarding its path forward.

Gresham Smith has been charged by the State of Tennessee to complete a high-level, objective, third-party assessment of the MRM. The study identifies features that may be contributing to the lack of success in landing a highly-prized prospect to fulfill the MRM vision. The study relies on existing information and data, including data obtained both from the Tennessee Department of Economic and Community Development (TNECD) and from public sources in the industrial site selection realm.

In an effort to best represent all of the information collectively, directly and concisely, the report provides a bottom-line summary to address the following:

- What Really Matters to Prospects
- Three Uncertainties
- Potential Strategy for Moving Forward with Development

¹ (State of Tennessee Economic and Community Development (2020) "Southeast and TX Mega and Large Sites 01-19-20.xls")



The Memphis Regional Megasite sits within 50 miles of both Memphis and Jackson.

MRM— a Mixed Bag

The large-scale vision of the MRM is supported by the site’s strengths including vast acreage, uniform topography, a variety of transportation infrastructure options and a low cost of living throughout the surrounding area. Conversely, three areas emerge as site weaknesses. The following sections expand on each of these aspects and include a Desktop Ranking Index (DRI).

The DRI is a ranking of key site selection criteria deemed necessary for the viability of a prospect’s project. These criteria are given a ranking of one-to-five value, five being the highest, and are utilized during the site selection process based on the project needs. A blend of objective data screening and subjective evaluation of qualitative factors is completed to develop an evaluation matrix for all criteria necessary to make the project successful.

Desktop Ranking Index (DRI)

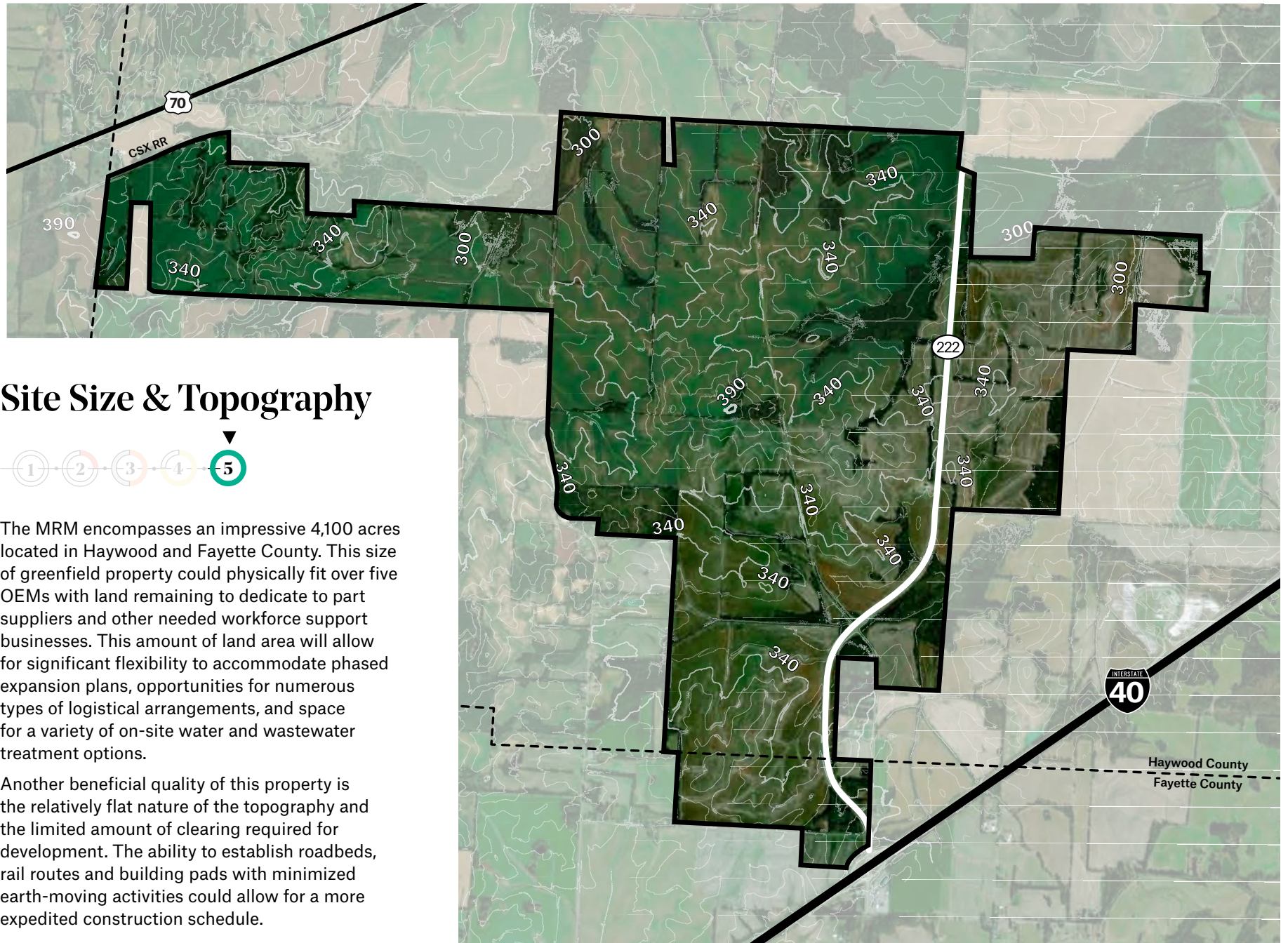
The DRI is a ranking of key site selection criteria deemed to be necessary for the viability of a prospects project. These criteria are given a ranking of one-to-five.



Key Site Rankings

This is how the site ranks in its current state.

Site Size & Topography	5	Power	3
Roadway Access	5	Natural Gas	3
Railway to the Site	4	Quality of Life	2
Air Travel	3	Workforce Demographics	2
Local Intermodal Facility Access	5	Regulatory Permitting	3
Port Access	4	Water	2
Cost of Living	5	Wastewater	2



Site Size & Topography



The MRM encompasses an impressive 4,100 acres located in Haywood and Fayette County. This size of greenfield property could physically fit over five OEMs with land remaining to dedicate to part suppliers and other needed workforce support businesses. This amount of land area will allow for significant flexibility to accommodate phased expansion plans, opportunities for numerous types of logistical arrangements, and space for a variety of on-site water and wastewater treatment options.

Another beneficial quality of this property is the relatively flat nature of the topography and the limited amount of clearing required for development. The ability to establish roadbeds, rail routes and building pads with minimized earth-moving activities could allow for a more expedited construction schedule.

Logistics & Transportation Infrastructure

With multimodal transportation infrastructure located nearby, the MRM has the ability to meet the shipping and access demands required by an OEM. Railroad and roadway infrastructure directly abuts the site with airport and waterway ports located only a short commute away.

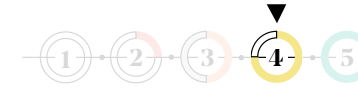
Roadway Access



The MRM offers direct access to Interstate 40, one of the busiest trucking corridors in the nation. The realignment and roadway improvements of SR 222 include a four-lane boulevard section of roadway spanning from the interstate and along the majority of the megasite frontage. In addition to Interstate 40, four other major highways are routed through Memphis, along with eight U.S. highways, making the site location conducive to freight shipping across the country. Trucks in the Memphis area have the ability to reach more major population centers overnight than in any

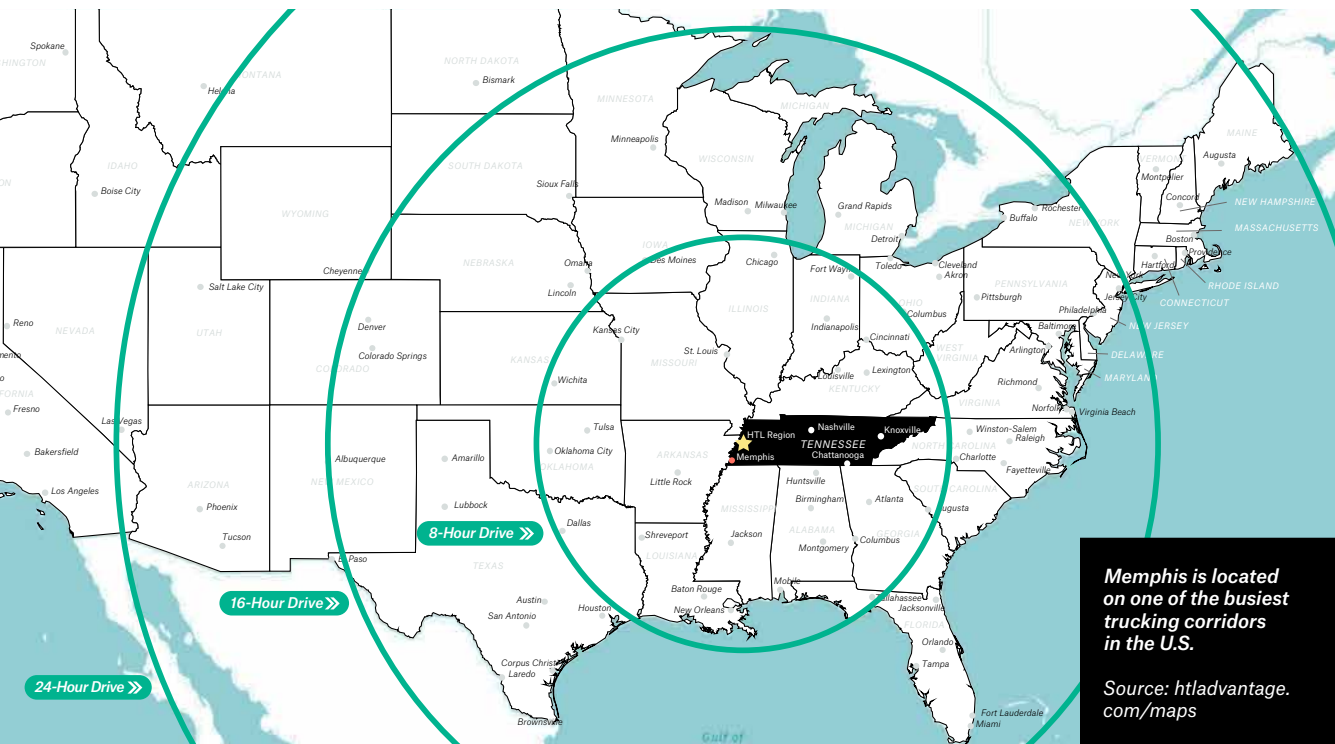
other city in the U.S.; this is why the region has become so popular to warehousing, distribution and logistics.

Railway to the Site



The site borders a Class 1 CSX railway. The Surface Transportation Board assigns a Class 1 rating to a railroad if it exceeds \$453 million in annual operating revenue as of 2015. While rail access to the main line is currently not in place, rail access can be designed, meeting CSX standards, for an alignment roughly matching the alignment shown on the TNECD MRM webpage, connecting in the CSX main line that runs between Memphis and Nashville, TN. The land between the CSX main line and the main body of the site would be suitable for construction of a bulk transfer facility, for loading and unloading multiple commodities, support of the site and other local businesses. Benefits of having established rail service include: attracting industries that require rail service, reducing the number of trucks on local roads and highways, improving air quality, lowering costs for long haul shipping, improving safety and reducing maintenance costs.

The railroad infrastructure for industrial parks, such as the MRM, is usually designed once the tenant(s) is(are) known, facility layouts and roads are proposed and the industry shipping needs, such as commodities and number of annual carloads, are understood. Should a potential tenant require the transport of raw materials, rail access would be a vital asset to the layout of the business operation. However, designing infrastructure prior to understanding the proposed layouts, logistics, and requirements of the specific



Potential Rail Users

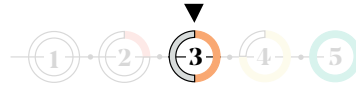
The types of industries that could be served and potential rail users include the following:

- Auto Manufacturing / Bus Manufacturing
- Automotive Industry Support Business
- Appliance Manufacturers
- Intermodal / Bulk Transfer Facilities
- Fuel Blending and Storage
- Agricultural Shipping & Distribution
- Plastics Manufacturing
- Storage-In-Transit Yard

industry could be counterproductive, and result in not meeting the material flow of a specific prospect based on their process requirements and production flow through the facility.

The lead time for planning, survey, design and construction of a lead track sufficient to reach the main body of the site (approximately 10,000 feet in length) would be about two years. Should a future tenant require rail service for raw materials or finished goods, timing of the rail spur construction will become critical during the final selection of the short listed sites. A FastTrack project could be constructed and operational within 16-18 months. Therefore, finding ways to reduce the construction schedule for the railway may be valuable information to have readily available, if the MRM is short listed.

Air Travel

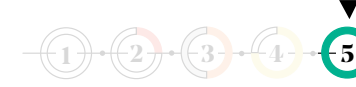


Memphis is home to an international airport, which is a major benefit to the region. Located just south of the central business district in Memphis and under an hour drive time from the MRM, the Memphis International Airport is home to the FedEx Express World Hub, and known to be the busiest air cargo airport in the western hemisphere. All domestic and international cargo aircraft account for approximately 408 flights per day.

However, the Memphis International Airport does not offer direct flights to major international gateways that would be of interest, specifically to foreign direct investment.² Memphis International Airport currently offers 35 non-stop passenger flight destinations, including one international flight to Canada. Comparatively, Nashville International Airport provides 86 non-stop passenger flight destinations, including international travel to four other countries.

The main finding is that while Memphis is designated an international airport, it does not serve the international gateways like other international airports often do. Leveraging Nashville as a backup would be important when attracting foreign direct investment and global companies.

Local Intermodal Facility Access



CSX has existing regional intermodal facilities in Memphis and Nashville, TN. Norfolk Southern has existing regional intermodal facilities in Rossville, TN, and a smaller facility in Memphis, TN. Other intermodal facilities in the vicinity include the CN Intermodal Gateway and BNSF Intermodal facility, both located in Memphis, and the UP Intermodal Facility in Marion, AR.

Port Access



The U.S.' fifth largest inland port, the International Port of Memphis, is under an hour of interstate driving from the MRM. This port is uniquely equipped with both north-south and east-west connection facilities, enabling companies to have a large logistical reach in the U.S. The port has direct access to two interstate highways, Interstate 40 and 55, and is located less than 15 minutes away from the Memphis International Airport and FedEx Express World Hub. There are five Class I railroads that feed into the port including Amtrak, BNSF, CN, CSX, and Norfolk Southern. The port includes 68 water fronted facilities and is ice free year-round.

² A full evaluation of this data is challenging in the midst of a pandemic, which has drastically altered the destinations airports are currently serving.

Cost of Living



Having access to this port is a potential benefit to prospects of the MRM, providing the advantage of national and international connectivity to boost their business.

Although this port does not have the advantages of a deep-water port, it has the flexibility of receiving a variety of barge sizes, given that it is located on the “lock free” area of the lower Mississippi River. The U.S. Army Corps of Engineers maintain a minimum depth of nine feet between St. Louis and Baton Rouge. This fluctuates greatly based on the amount of rainfall received. Within the past year, interest has been expressed to allow for this port to begin accepting large cargo ships in the future. This indicates that the port is continuing to evaluate expansion opportunities, which could be an asset to industries located at the MRM.

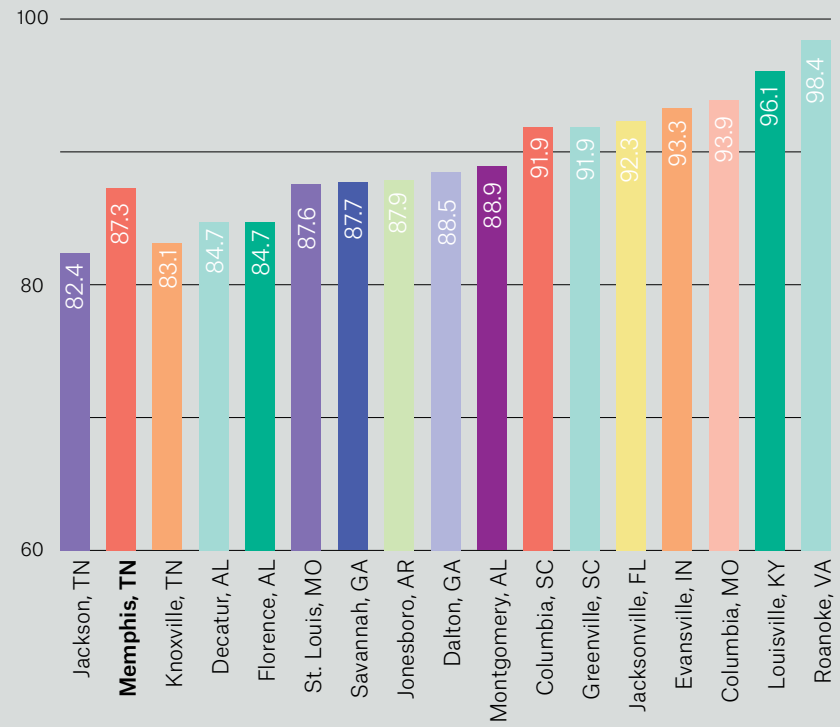
Competing sites may have access to a deep-water port that would rank higher in the DRI than the inland ports Memphis has to offer.

The cost of living is attractive to prospects because it functions as a good recruitment tool for talent. This, coupled with the fact that the state does not have an income tax, begins to create an attractive benefit and compensation platform. Generally, an area with a low cost of living will receive a higher DRI on cost of living and lower on quality of life. This is not always the case but often will emerge as a theme.

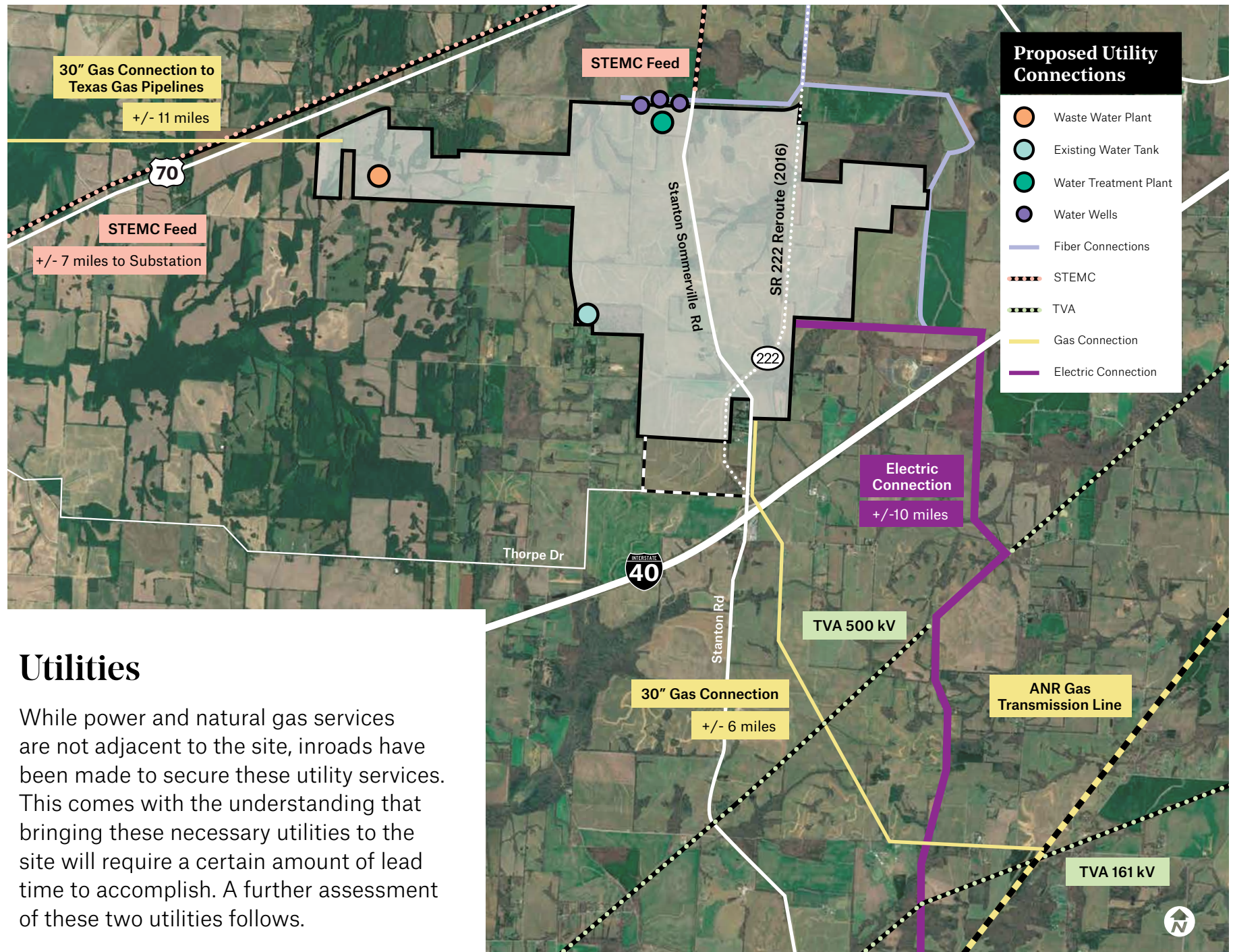
Cost of Living Compared to Memphis

Fourth Quarter, 2020

Jackson and Memphis both rank among the lowest in cost of living, earning the highest DRI.



Source: www.wtia.org/business-environment/cost-of-living

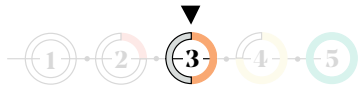


Utilities

While power and natural gas services are not adjacent to the site, inroads have been made to secure these utility services. This comes with the understanding that bringing these necessary utilities to the site will require a certain amount of lead time to accomplish. A further assessment of these two utilities follows.

Existing utility locations are from a variety of sources and approximate in nature. Routes of proposed connections are extremely general in nature and subject

Power

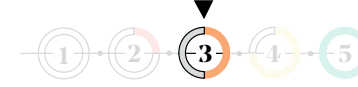


Major power users seek states with competitive power rates. Having affordable power rates positions Tennessee well, and provides a competitive advantage for these users. Upon the first desktop screening and a review of typical documents provided in response to a prospect's request for information, the MRM scores favorably in the power category. There are two Tennessee Valley Authority (TVA) transmission lines located southeast of the MRM with voltages of 161,000 kilovolts (kV) and 500,000 kV, respectively. In 2018, the State completed the right-of-way acquisition process that provides an efficient, planned route to bring power to the MRM. The route will allow access to both transmissions lines which provides a variety of loading options to match the needs of the future prospect.

However, upon taking a deeper dive into what it will take to physically secure power on the property, the site reveals some challenges. Currently, two electric authorities have territory

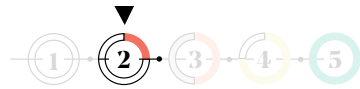
within the MRM: Chickasaw Electric Cooperative and Southwest Electric Cooperative. The dividing line is understood to be a 50/50 split that traverses through the main core of the site and does not follow any county lines. The line's precise path is not known outside of these local authorities which could create a legal challenge for any future tenant for this site. Although there is a primary easement path established from TVA's main transmission lines, there is a high-risk factor that the power service provider will be determined by where the future prospect is located within the MRM. Obstacles may arise from having two competing electric providers within the same site. The State will have to address these jurisdictional issues by agreement, legislation or other means. Previous studies have estimated that permanent power can be established on-site within 18 months. Understanding how to leverage the ability to provide redundant power could turn this into a selling feature if the jurisdictional and legislation concerns are addressed.

Natural Gas



The MRM benefits from access to two major transmission gas lines that provide reliable natural gas service. These are located at both the southern and northern boundaries of the property. The closest of the two is the TC Energy ANR Pipeline, which is a dual, 30-inch high pressure pipeline approximately six miles southeast of the property. It has been stated in previous studies that a 10-inch pipeline at 500-800 PSI could be designed and constructed in a year's timeframe. However, this gas connection would be over six miles long and would require right-of-way acquisition to be completed. The secondary transmission line is the Texas Gas Transmission line located northwest of the site. This connection is estimated to be approximately 11 miles long and would require right-of-way acquisition as well. Although this site has the unique ability to obtain reliable, large capacity natural gas service there remains a great amount of heavy lifting both physically and legally to bring this supportive utility to the MRM.

Quality of Life Index



The higher the quality of life index, the more attractive a region is to the future workforce needed to make the operations of the investment a success.

This index used in this high level analysis is defined by the following:

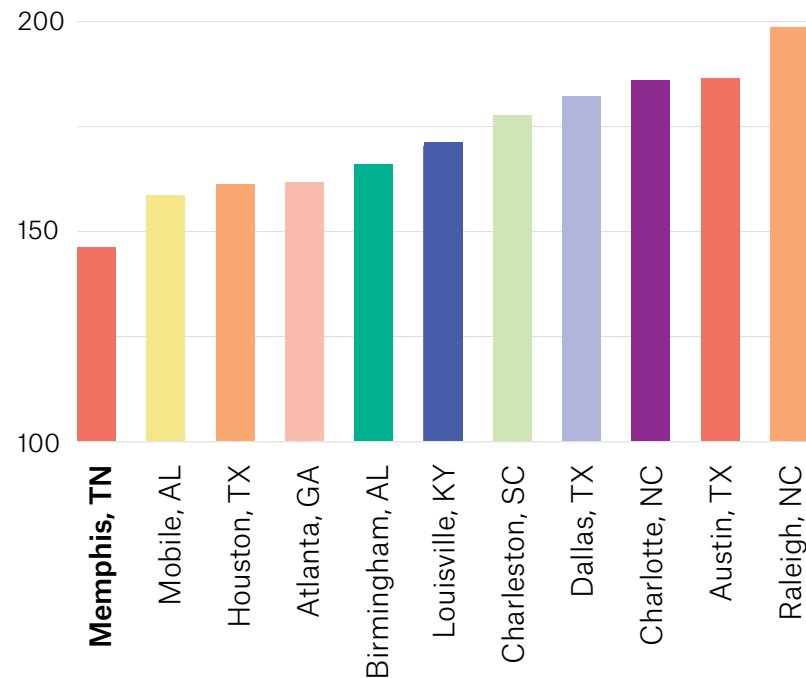
- Income & Jobs
- Housing Conditions
- Health
- Education
- Environmental Quality
- Personal Security
- Civic Engagement
- Work-Life Balance
- Infrastructure & Services
- Mobility
- Social, Cultural and Leisure

The dimensions of the quality of life are all connected to one another. As an example, strong educational systems can lead to higher income jobs and better housing options. Higher incomes lead to more expendable income for dining and cultural experiences.

The index scores low enough to constitute a significant factor for prospects who prioritize quality of life for their management and company culture.

Quality of Life - By City

Comparing major southeastern cities, Memphis is among the lowest rating in quality of life.



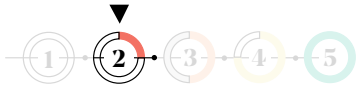
Source: www.numbeo.com/quality-of-life/region_rankings_current.jsp?region=021

A competitive assessment for the region served by the MRM would dive deeper into the analysis and would generate a data driven quality of life score. This data analysis would explore things like: burglaries, violent crimes, commuting times, public transit, cinema seats, museum experiences, demographic by nationality, age and education, environmental conditions, practicing doctors, mortality rates, suicide rates, educational attainment and more.

In the absence of a competitive assessment being completed, Numbeo³ resources were utilized for retrieving estimates on purchasing power, safety, healthcare availability, cost of living, property price to income ratios, traffic commute times, pollution levels, and climate, and were included and combined to give a general idea of how the region may rank.

³ <https://www.numbeo.com/quality-of-life/>

Workforce Demographics



When conducting a desktop analysis for a site-specific workforce demographic, the following steps occur:

Step 1
Understand the workforce relative to the site within a drivetime radius.

The MRM is often marketed as having a workforce exceeding one million people, but the data analysis suggests that the employment within a 60-minute drive time from the site is 649,270. This is comprised of 86.1% resident workers and 13.9% commuters. The area’s population growth has been flat, and projected growth in total workforce from 2020-2025 is a mere 1% within a drive time of 60 minutes. Competing sites in faster growing areas will score much higher than the MRM in this area.

Step 2
Analyze workforce relative to an OEM prospect’s needs.

The next step will review the presence of the Standard Occupation Codes (SOC) relative to the workforce available to the MRM. The top 10 OEM SOC’s and associated employees required for each SOC was used in this analysis and can be found in the table to the right. It is recommended that a thorough workforce analysis be completed as part of a competitive assessment for targeted industries to better understand the workforce dynamics of the region relative to competing sites.

MRM Labor Market - Jobs & Workers 2020-2025

The available employed workforce within 60-minute drive time.

	2020 Jobs	2020 Resident Workers	2020 Net Commuters	2025 Jobs	2020-2025 Change	2020-2025 % Change
Totals	649,270	558,463	90,807	655,684	6,414	1%

Source: Younger Associates 2020, ESRI data pull using state data from the following agencies: Mississippi Department of Employment Security; Tennessee Department of Labor and Workforce Development, Research and Statistics Division

Top 10 Standard Occupation Codes (SOC) for an OEM

SOC	Description	Distribution of 4000 Jobs	Percent of OEM Workforce (4000 emp basis)
51-2092	Team Assemblers	2,040	51.0%
51-9199	Production Workers, All Other	180	4.5%
51-1010	Assemblers and Fabricators, All Other	180	4.5%
51-1011	First-Line Supervisors of Production and Operating Workers	120	3.0%
17-2112	Industrial Engineers	108	2.7%
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	100	2.5%
49-9041	Industrial Machinery Mechanics	96	2.4%
47-2111	Electricians	96	2.4%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	92	2.3%
51-9122	Painters, Transportation Equipment	64	1.6%

Source: Staffing Patterns from Younger Associates Economic Impact Analysis for OEM Report

This high-level analysis was used to assess the MRM’s likely performance during a desktop analysis of an OEM prospect. This assessment is used to suggest where the MRM may be falling short. While we are able to present the findings of a pre-site selection/elimination process desktop analysis, only a competitive assessment would allow us to speak authoritatively on this topic.

What is the strength of the MRM workforce?

The Location Quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average. When the workforce within a 60-minute drive time is considered, none of the top OEM SOC show up in the top SOC for the region. A LQ of 1 shows the region is the same as the national average. Greater than 1 says the region is more concentrated than the national average. LQs for the top SOCs of an OEM above 3, versus the national average of 1, would drive a DRI to a 4 or 5 out of 5. This begins to paint a picture that this region is not well-positioned with a workforce demographic profile that matches an OEM. When this information is compared to other sites, it may drop the MRM to the bottom of the list or worse, eliminate it from further consideration. The LQ for warehousing and distribution and ports are well above 1 indicating that this region is well-positioned to support warehousing and distribution and a strong port system.

What is the profile of the workforce demographic compared to top OEM SOCs?

Unless there are significantly higher-scoring sites, the next layer of analysis would be to review the top OEM SOC LQs for the 60-minute drive time workforce demographic. The data reveals that 5

Top SOC Location Quotients for the MRM 60-Minute Drive Time

This indicates the strength of the regions workforce.

SOC	Description	2020 Location Quotient
53-7199	Material Moving Workers	4.49
53-5021	Captains, Mates, and Pilots of Water Vessels	3.85

Overview of Available Workforce Within 60-Minute of the MRM Against Top OEM SOCs

A LQ of 1 shows the region is the same as the national average.

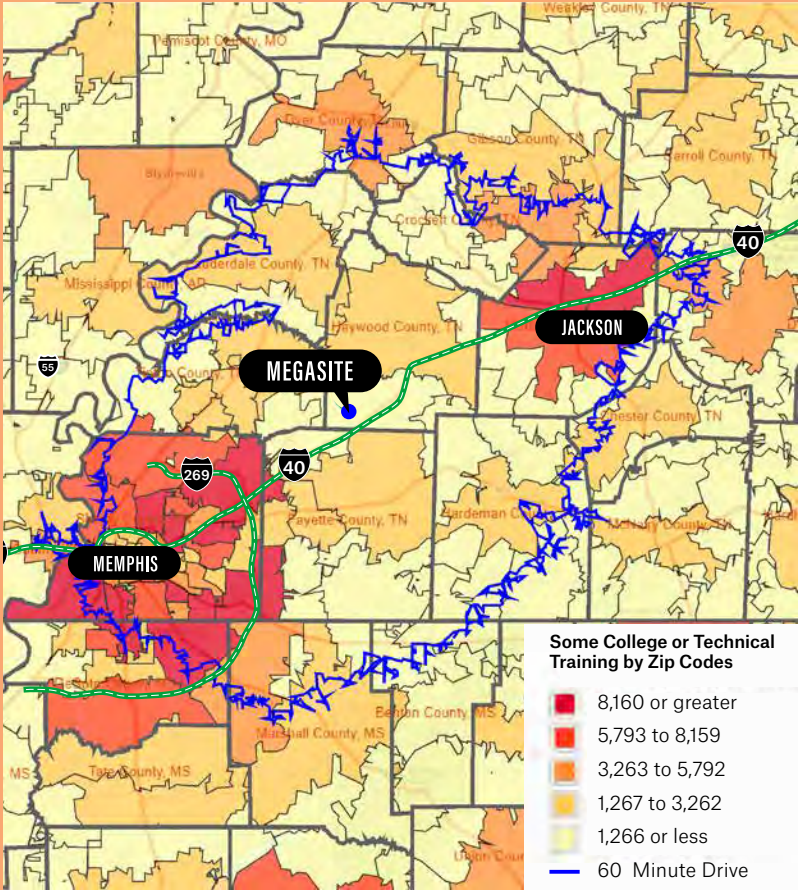
SOC	Description	2020 Location Quotient
51-2090	Miscellaneous Assemblers and Fabricators	1.01
51-9190	Miscellaneous Production Workers	2.24
51-1010	First-Line Supervisors of Production and Operating Workers	1.12
17-2110	Industrial Engineers, Including Health and Safety	1.03
51-4030	Machine Tool Cutting Setters, Operators, and Tenders, Metal and Plastic	0.88
49-9040	Industrial Machinery Installation, Repair, and Maintenance Workers	0.95
47-2110	Electricians	0.86
51-9060	Inspectors, Testers, Sorters, Samplers, and Weighers	1.06
51-9120	Painting Workers	0.61

of the 10 SOCs sought after by an OEM have LQs greater than or equal to 1, but just barely.

Competing regions with the presence of OEMs or other heavy manufacturing will likely score significantly higher than the workforce region serving the MRM. During a short list evaluation, this data would likely move the MRM to the bottom of the short list if LQs for competing sites are higher.

When LQs are at or just under the national average, another layer of evaluation could be done to determine if the region’s workforce is growing or declining. The population growth within a 60-minute drive time of the MRM shows the growth in the workforce to be just under 1% within a 60-minute drive time of the site.

Workforce Market Population with 13-15 Years of Education



Source: <https://htladvantage.com/maps>

Step 3 Answering the final question: Is the needed workforce there?

The final question is to determine whether the region could still potentially support an OEM given the marginal performance. This analysis may be done if the remaining short listed sites are still very close and there is no clear front runner. An analysis likely will not be conducted if a front runner is already established and is preferred.

The final review includes the workforce within a drive time radius of 60 minutes from the site against SOC that could be directly related to an OEM or major manufacturer and against SOC that have knowledge that could be translatable and transferable to an OEM or major manufacturer. The workforce analysis conducted by HTL Advantage which covered 45-minute and 90-minute drive times was also reviewed. Data provided herein is based on a 60-minute drive time analysis conducted independently from HTL Advantage.

While the analysis suggests there is enough labor to support an OEM, a closer look reveals the current labor force will likely not be competitive when compared to other sites.

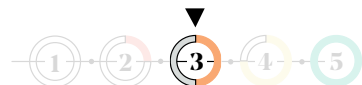
Of the total workforce of 649,270 that were found to be within 60 minutes of the site:

- Approximately 4% of the workforce support the top SOC's for an OEM
- Approximately 8% of the workforce is classified as being in an SOC necessary for an OEM or heavy manufacturing prospect.
- Approximately 9% of the workforce could support an OEM, if you broaden the look at SOC's with translatable and transferable skills.

The negative factor comes into play when evaluating the top SOC for an OEM. **From data analysis, there are only 5,442 workers available in the region to fill the needed 2,220 new jobs needed by the OEM.** This could be seen as a risk for labor recruitment to the area. A region with well-developed manufacturing will likely offer a workforce profile that better suits an OEM.

Educational attainment rates may also be considered in a more in depth review of the workforce. The map illustrated on the left shows the educational attainment in the region within a 60-minute drive time to the site. The educational attainment rate is improving incrementally and is now comparable to the state average educational attainment. Further study of how the MRM region performs against competitive regions with other megasites should be considered.

Regulatory Permitting Associated With the Site



The State of Tennessee has a history of being a business-friendly state and demonstrated examples of working very well with prospects on permitting requirements. In general, to pass the desktop screening for permitting, the site must have evidence that the state and local authorities having jurisdiction will be cooperative. The state would receive a 5 every time.

When situations develop that require additional interaction with authorities having jurisdiction, this creates real or perceived uncertainties and potential delays or a lack of clarity in the overall project schedule.

The specific items related to the site that bring this score down are related to the presence of wetlands, blue line streams and endangered species that could be perceived as risk to a prospect. If competing sites on a prospect's shortlist do not have similar concerns, then these environmental issues could eliminate the MRM from the short list completely.

In late 2017, it was determined that this site contains natural habitats for one federally endangered and one threatened species of bat; particularly those in the northern leg of the property. The latest Bat Mitigation study

recommends minimizing the impacts of the habitats where possible, conducting additional bat surveys in the proposed areas of development, and potentially contributing to the existing Imperiled Bat Conservation Fund.

A significant factor that must be considered in the future development of the MRM is the time and effort that will be necessary to approve the mitigation of existing streams and wetland areas onsite. It should be anticipated that there are at least 10 wetland areas along with branches and unnamed tributaries to the Little Muddy and Big Muddy Creeks that traverse the MRM. In addition, based on the Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources website, both creeks have existing water quality assessment issues. The exact timeframe for mitigation is an unpredictable process that can add months and, at times, years to project planning.

These environmental issues are acknowledged and can be managed either through avoidance or mitigation in a way that should not affect the success of the site.

The Global Prospect Perspective

When attracting foreign direct investment, companies making their first time U.S. investment will avoid as many uncertainties as possible, especially related to permitting. Permitting is of great concern because the U.S. will typically have higher standards for operation than many of their offshore facilities. They have likely been evaluating how to “Americanize” the design of their project and tallying the associated added cost to meet the more stringent permitting and operational requirements in the U.S. For this reason, discovering onerous permitting requirements will be concerning.

In addition, schedule is always a driver for a project. Any key criteria presenting evidence of increased risk or delay to schedule will always be a concern to global prospects. Typically when the decision is made to invest in the U.S., the schedule is already compressed due to the time it took to make the final decision to proceed. If these items are not critical to the schedule, they may not impact selection, but if other sites without these issues exist, the MRM may be eliminated.

Water & Wastewater Uncertainty

Lack of utility service directly to the site creates uncertainty and could impact the overall construction schedule for the prospect.

Legal Hurdles

The legal challenges facing utility service at the MRM fall into four main categories:

1. Supervision of the utility rates
2. Interjurisdictional issues relating to water
3. Enforcing environmental regulations on wastewater and water
4. The potential need for enabling legislation.

First, the State has an interest in utility rates, because they may impact its ability to attract businesses to the MRM. Multiple state agencies regulate utility rates.⁴ The law requires some utility providers to charge rates high enough to cover depreciation on utility infrastructure.⁵ Depreciation begins as soon as infrastructure is placed into service. If the utility incorporates depreciation into its rates, it should have enough funds to replace the infrastructure at the end of the infrastructure's useful life. Because the MRM will require substantial infrastructure, particularly

for wastewater treatment and discharge, depreciation may lead to prohibitive rates on the front end. Choosing a utility vehicle that has flexibility in how it deals with depreciation would ease this problem.

Second, existing utility providers already have jurisdiction over some or all of the MRM site. With regard to water service, the Haywood County Utility District includes land occupied by the MRM. As long as it continues to provide water, it has the exclusive right to serve within its boundaries.⁶ The Haywood County Utility District has historically contracted with another entity to serve a small number of customers and does not have the capacity to provide large-scale service to the MRM.

Third, if the MRM will have an on-site wastewater treatment plant and a force main to the Mississippi River, some entity must manage a wastewater "pretreatment program" to control the quality of the wastewater flowing into the treatment plant. The managing entity must have the legal authority to enforce pretreatment standards for businesses, monitor compliance, impose penalties for violations, and seek injunctions to require compliance.⁷ This kind of legal authority can come from "a statute, ordinance, or series of contracts or joint powers

agreements." *Id.* The State should make plans for an appropriate entity to carry out the pretreatment task.

Fourth, some approaches to utility service will require new legislation. The State may decide to create a separate and unique governmental entity to fulfill the needs of the MRM. Alternatively, the State may decide to partner with one or more private entities in a Public-Private Partnership (P3) relationship that is not currently authorized by law. A P3 is a contractual collaboration between a government agency and a private company to fund, construct and operate projects. Even if the State uses one of the standard models for utility service, it may wish to change specific requirements for the MRM, such as the method of charging for depreciation.

The State's approach to utility service, including the type of entity that owns and operates a system, will determine which of these challenges must be overcome.

⁴ See *Tenn. Code Ann. § 7-82-702(a)(7) and -703(b) (Utility Management Review Board, which oversees utility districts); id. § 65-5-101(a) (Tennessee Public Utility Commission, which oversees privately owned utilities).*

⁵ See *Tenn. Op. Att'y Gen. No. 05-165 (Oct. 25, 2005), 2005 WL 3521003, at *4-5 (discussing utility districts).*

⁶ See *Tenn. Code Ann. § 7-82-301(a)(1)(B).*

⁷ *Tenn. Comp. R. & Regs. 0400-40-14-.08(6)(a).*



Water



The current infrastructure plan includes on-site water supply, treatment, storage and distribution. The water supply plan includes three on-site water supply wells along the northern property boundary to withdraw water from the underlying Memphis Sand Aquifer, an abundant and high-quality source of groundwater. The groundwater will be pumped to a new 3-million-gallon-per-day (MGD) water treatment plant adjacent to the well field to treat the groundwater to state

drinking water standards. Treated water will be pumped into two 1-million-gallon (MG) water towers that will provide storage and pressure to the MRM tenants. One of the two 1-MG water towers has already been constructed on-site, near the western boundary of the property. The second 1-MG water tower is planned near the well field and water treatment plant near the northern property boundary.

Because a water utility with sufficient capacity to serve the MRM does not presently exist within a reasonable distance, the on-site water supply, treatment and storage system is a sound approach, regardless of the size of industry that locates to the MRM or its potable water and

process water demands, as construction of the system may be completed in phases as demand increases. However, it is unclear how the water supply, treatment, storage and distribution system will be operated and maintained. One option, assuming the State is averse to accepting the role of water system operator, is to privatize the water system by engaging a private water operations company to operate and maintain the system and ensure compliance with TDEC rules on the State's behalf. Whether privatized or not, water system operation and maintenance is an issue that needs to be addressed to increase the MRM's viability.

Wastewater



The current infrastructure plan includes an on-site, 3.5-MGD capacity wastewater treatment plant and effluent pumping station, 90-MG capacity emergency waste lagoons, and an 18-inch effluent force main to the Mississippi River. The preliminary design of the wastewater facilities was based upon reported wastewater flows from large automobile manufacturers that located elsewhere, with provisions for providing sewer service to the nearby Town of Stanton.

Given that no sewer utilities with 3.5-MGD available treatment capacity exist within a reasonable distance of the MRM, and because none of the waters of the state in the vicinity of the MRM have the assimilative capacity to accommodate the MRM's projected waste loadings, the on-site wastewater treatment, storage, and pumping system and the 18-inch effluent force main were determined to be the only feasible solution.

So, what happens if the first MRM tenant is not an OEM and/or generates significantly less than the 3.5-MGD capacity of the proposed treatment, storage and pumping/conveyance system? To explore this scenario, theorize the initial tenant discharges only 1.0 MGD of wastewater. One option to prepare for such a tenant would be to design and construct the treatment and pumping facilities initially with a 1.0-MGD capacity and provisions for expansion (e.g., in 1 MGD increments) as the MRM expands. Although the treatment and pumping facilities can be designed to be modular to facilitate cost-effective expansion, the effluent force main

cannot. At 18 inches in diameter, the effluent force main will convey a flow of 3.5-MGD at a flow velocity just above 3 feet per second (FPS), the minimum velocity required for the pipeline to be considered "self-cleaning" (i.e., able to re-suspend settled solids following periods of zero flow in the pipeline). If the treatment and pumping facilities were designed to initially accommodate only 1.0 MGD, the velocity in the effluent force main would be less than 1 FPS, too low to maintain solids in suspension, which would eventually lead to accumulation of solids in the pipeline and maintenance issues. Thus, the current wastewater strategy is not conducive to phased implementation.

Now consider if the wastewater treatment facility was an off-site, regional facility instead of an on-site facility. Under this scenario, assuming the same 1.0-MGD initial wastewater flow, the MRM would need only a 1.0-MGD capacity wastewater pumping station and new, smaller (e.g., 10-inch diameter) force main to convey wastewater to the off-site treatment facility. The pumping station could be designed and constructed to be expanded as the MRM expands. Should the wastewater flow double, the 10-inch force main would still accommodate the increased flow at an acceptable velocity. If further expansion increased the wastewater flow, a second, parallel force main from the pumping station to the off-site treatment facility would be warranted.

An off-site wastewater treatment solution was proposed by HTL in July 2020.⁸ The potential benefits of such an approach are documented in the HTL document. Some of the benefits are as follows:

1. As described previously, the planned on-site, dedicated wastewater treatment facility would be replaced with an on-site

wastewater pumping station (approximately 1-MG capacity) and effluent force main to convey wastewater off-site. The proposed HTL solution is to initially convey pretreated wastewater generated on the MRM site to the existing City of Covington treatment plant, which reportedly has up to 1.6 MGD available capacity. It should be noted that this interim solution, although viable based upon the City's discharge permit, would likely be opposed by certain stakeholders because it would increase the waste loading to the Hatchie River above current levels.

2. The total length of effluent force main would be reduced initially by approximately half, and the diameter would likely be reduced from 18 inches to 10 or 12 inches. This proposed solution assumes that existing pipeline easements could be used for the proposed discharge force main; however, property owners who have previously granted utility easements could object to the revised plan to convey pretreated wastewater instead of treated effluent through the force main.
3. Construction duration for the initial improvements would likely be reduced by approximately half, thus reducing the time required to get the MRM "shovel ready."
4. If a second pump station is constructed along the route to Covington as recommended in the HTL report, multiple large areas would have access to sanitary sewer and be highly attractive for development to support new residents locating to the area for jobs at the MRM and further economic growth for the region.
5. A regional solution would provide a wastewater disposal option for communities in need of a long-term solution, such as

⁸ (Herbeson, M. (2020). *Memphis Regional Megasite Alternative Wastewater Options [PowerPoint slides]. HTL Advantage*)

those with treatment facilities approaching the end of their useful lives or those who presently rely on septic tanks. The Town of Stanton (Pop. 419) has previously been identified as a prospective user of a new treatment facility, and the City of Covington (Pop. 8,800) is a key component of the HTL recommended solution. Additional communities could include Mason (Pop. 1,524) and Braden (Pop. 263), plus the areas that would likely develop as the MRM develops.

6. As suggested in the HTL report, an existing sewer utility such as the City of Covington has the resources and expertise to operate and maintain a regional treatment facility of the size required to serve the projected residential population and MRM tenants. Alternatively, the state could again explore privatization, such as the Public-Private Partnership (P3) option discussed herein, whereby a private company would be contracted to provide one or more of the following for the regional treatment facility: design, build, operate, own, and finance.

Given the aforementioned uncertainties associated with the HTL solution, the most efficient remedy may be the construction of a regional treatment facility between the MRM and the City of Covington and a force main to convey treated effluent to the Mississippi River. The regional facility would be designed to accommodate the MRM, the City of Covington, and additional communities, which would eliminate existing discharges to the Hatchie River.

Consider another possible scenario, under which the first MRM tenant consists of a “non-categorical” industry that does not generate

industrial wastewater and, thus, discharges sanitary wastewater only. Examples include a data center or a distribution facility. Given the vast acreage of the MRM relative to the likely development area, ample land exists to warrant re-evaluation of the feasibility of land application of treated effluent from initial site development. Previous analysis conducted by SSOE and Wauford concluded that land application of treated industrial wastewater was not viable, because potential industries would steer clear of the site if land application was part of the wastewater solution for future liability reasons. With a modular treatment facility design, such as the sequencing batch reactor (SBR) currently proposed, a smaller treatment facility could be constructed initially without compromising the ability to expand the facility as the MRM wastewater discharge increases with additional development. Should the site and, potentially, the surrounding area, continue to develop, the SBR can be expanded incrementally and, eventually, the force main could be constructed as the wastewater flow from the MRM approaches the 3.5-MGD design flow or the land application capacity of the undeveloped portions of the MRM is reached.

Under the land application scenario, the cost of the proposed effluent force main would be deferred indefinitely, and the only additional cost would be construction of the land application system, including effluent storage for non-growing season months, and system operation and maintenance. Additional analyses could be performed to determine if some of the costs associated with the land application system could be offset by revenues from sale of crops harvested on site.

Finally, in addition to land application, the State could consider beneficial reuse of treated effluent for site irrigation and use by tenants (e.g., cooling towers). A reuse scenario would be especially attractive to a water intensive industries and/or industries with a focus on sustainability, e.g. reuse water system for toilets, etc.

In summary, a scenario based upon construction of a regional treatment facility to serve the MRM and surrounding areas may offer the best solution to the State, given the aforementioned risks associated with the initial and interim phases of the HTL solution. The regional facility could be designed to accommodate the MRM, the City of Covington, and additional communities, which would eliminate existing discharges to the Hatchie River. The State has already purchased approximately 15 miles of 18-inch pipe for the proposed effluent force main. Under the off-site wastewater treatment scenario described above, the 18-inch pipe could still be used for the effluent force main between a regional treatment facility to the permitted Mississippi River outfall. As with the water system, it is unclear how the wastewater treatment, storage, pumping and conveyance system will be operated and maintained. Operation, maintenance and depreciation costs for a wastewater treatment facility are typically allocated over many customers, which helps keep rates reasonable. In the case of the proposed MRM wastewater treatment and conveyance system, the number of customers to be served initially is extremely low, even if the Town of Stanton is served. Privatization is an option, as it is with the water system. Whether privatized or not, wastewater system operation and maintenance is an issue that needs to be addressed to increase the MRM’s viability.

Prospects Have Other Choices

Competition & Demand

The MRM has been on the market over a decade. The dynamics of competing sites and regions as well as economic conditions driving prospect activity is ever changing. As shown on the map, some regions with competing sites on the market since the MRM was marketed have landed a prospect that once considered locating to the MRM. Meanwhile, other megasites continue to be developed and are bringing new competition to the MRM. The economic conditions continually evolve which also means target industries could change. Understanding the competition and demand relative to the current marketplace conditions is critical.

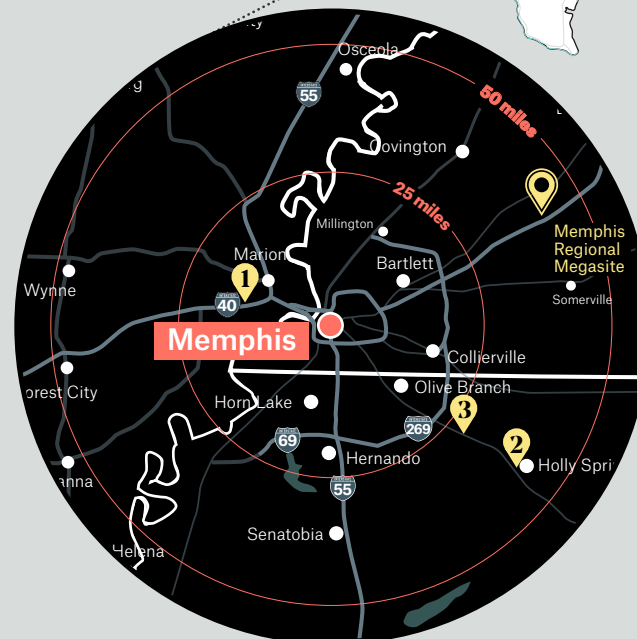
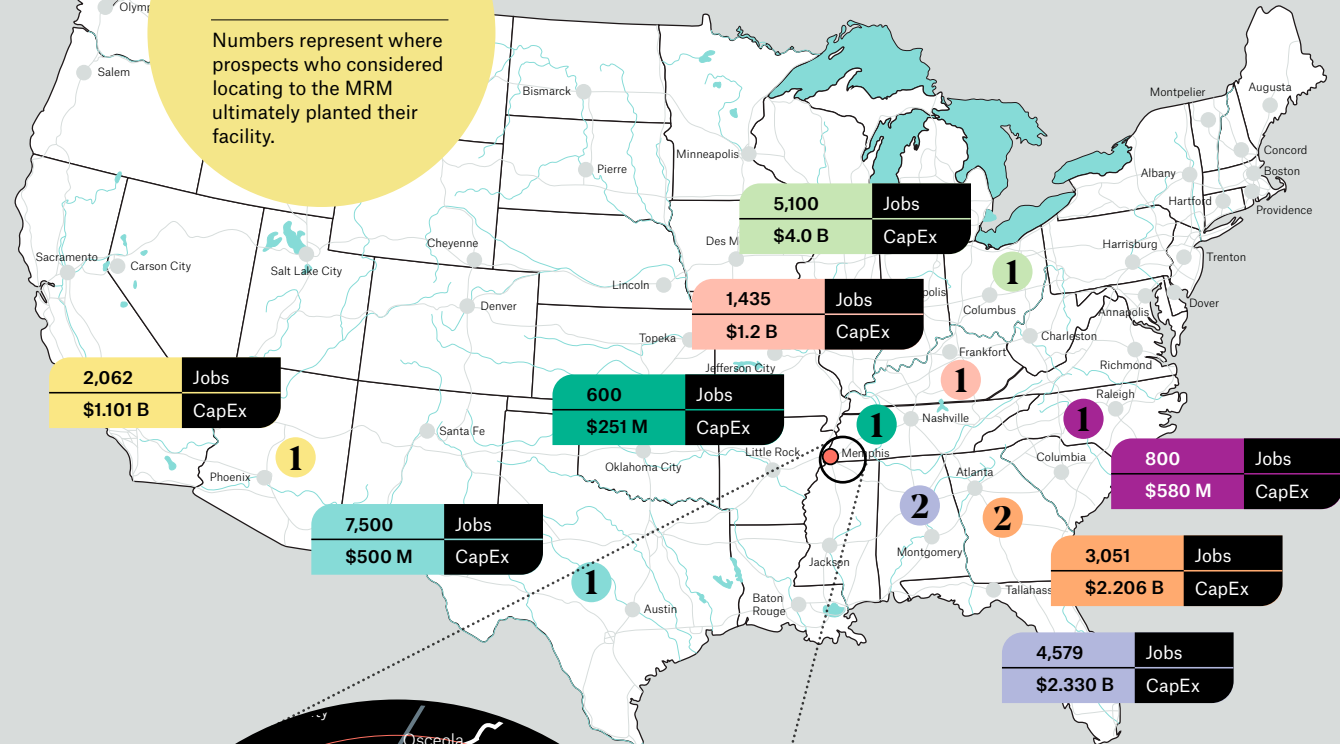
In this environment of steep national and local competition, prospects have the luxury of being more selective. If potential sites have any shortcomings (low DRI scores), it can be difficult to recruit high-profile prospects. An examination of the reasons for unsuccessful past recruitments for the MRM, three inescapable observations surface:

- Nine of 13 site visits confirm perceived shortcomings with workforce demographics
- Nine of 13 confirm perceived infrastructure timing and completion concerns
- Additionally, 61% of newcomers and management-level workers do not perceive quality of life as appealing

Who the MRM Lost to

Numbers represent where prospects who considered locating to the MRM ultimately planted their facility.

Note: Not all prospects who reviewed the MRM have landed on a location. Data source: Data provided by the State was not validated against actual investment and job creation that may have been updated since prospects talked with the State about their project.

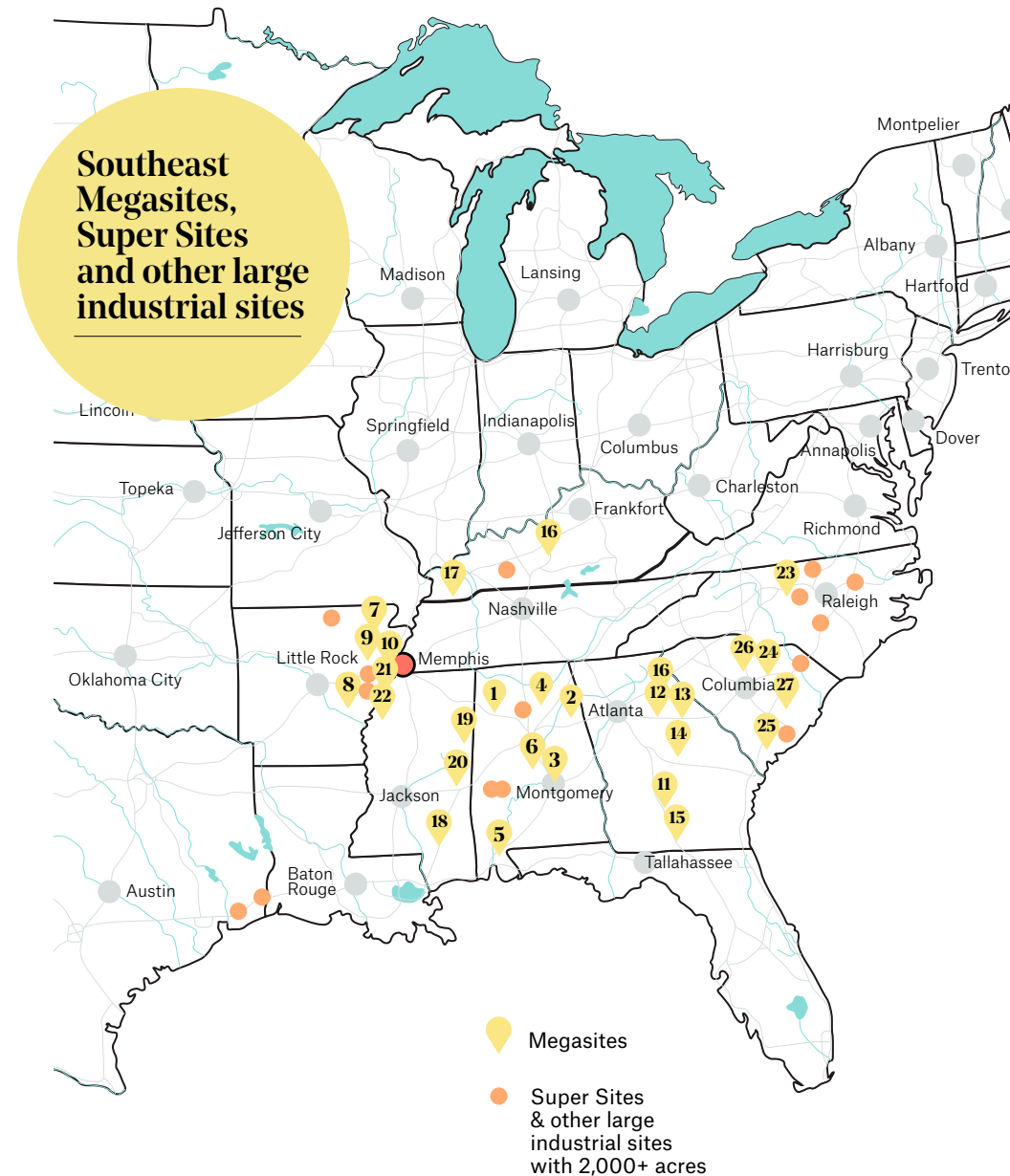


1000+ Acre Sites in the Memphis area

The Memphis area industrial site competition.

1. West Memphis I-40 Megasite
2. The Springs Industrial Park
3. Chickasaw Trails Industrial Park

	State	Acres	Megasite	City
1	Alabama	1,600	Black Creek Megasite	Brilliant (71 miles west of Birmingham)
2	Alabama	1,100	Little Canoe Creek Megasite	Gadsden (62 miles NE of Birmingham)
3	Alabama	1,842	Montgomery Megasite	Montgomery (Adjacent to Hyundai)
4	Alabama	2,010	Pryor Sanderson Megasite	Athens (10 miles south of Athens)
5	Alabama	2,361	South Alabama Megasite	Bay Minette (34 miles NE of Mobile)
6	Alabama	1,540	Westervelt Calera Megasite	Calera (35 miles south of Birmingham)
7	Arkansas	2,426	Lawrence County Megasite	Hoxie (92 miles NW of Memphis)
8	Arkansas	2,045	Metro Little Rock Megasite	Hensley (19 miles south of Little Rock)
9	Arkansas	2,604	Newport Megasite	Newport (90 miles NW of Memphis)
10	Arkansas	1,800	West Memphis I-40 Megasite	Marion (17 miles west of Memphis)
11	Georgia	2,780	Dooly County Megasite	Vienna (133 miles south of Atlanta)
12	Georgia	1,061	East Atlanta Megasite	Social Circle (40 miles east of Atlanta)
13	Georgia	1,050	Greene County Megasite	Greensboro (76 miles east of Atlanta)
14	Georgia	2,000	Heart of Georgia Megasite	Dublin (56 miles east of Macon)
15	Georgia	3,000	South Georgia Megasite	Adel (200 miles south of Atlanta)
16	Kentucky	1,551	Glendale Site (Megasite)	Glendale (47 miles south of Louisville)
17	Kentucky	2,109	West Kentucky Megasite	Mayfield (25 miles south of Paducah)
18	Mississippi	2,222	Eagle One Megasite	Purvis (8 miles S of Hattiesburg)
19	Mississippi	1,144	Infinity Megasite	Columbus (15 miles E of Starkville)
20	Mississippi	1,400	Kewanee Megasite	Merdian (90 miles E of Jackson)
21	Mississippi	2,309	NW Mississippi Megasite	Walls (18 miles SW of Memphis)
22	Mississippi	2,221	Tunica Metro Megasite	Tunica (40 miles SW of Memphis)
23	North Carolina	1,825	Greensboro Randolph Megasite	Liberty (22 miles SE of Greensboro)
24	South Carolina	1,426	Central South Carolina Megasite Site	Lugoff (30 miles NE of Columbia)
25	South Carolina	1,481	Colleton Highway 64 Megasite	Colleton County (58 miles west of Charleston)
26	South Carolina	1,544	I-77 International Megasite	Ridgeway (20 miles north of Columbia)
27	South Carolina	1,417	I-95 Site Megasite	Calarendon County (60 miles east of Columbia)



Is the TNECD doing all it can?

It is evident that the State has invested in the MRM vision, the infrastructure needs, and the examination of different solutions to overcome challenges.

Ownership & Operation Options

In effort to remedy the water and wastewater service issues of the MRM, the State invested time to explore the means and methods of different ownership and operation scenarios for serving the site.

The scenarios includes the following:

1. State-owned/Megasite Utility Authority (MUA) operated
2. Formation of a new Utility District for ownership and operation
3. Formation of a new Regional Authority for ownership and operation
4. Fully private ownership and operation
5. State-owned/contract with private company for operation
6. P3 formed

The most viable options are scenarios 1, 5

and 6. Viability was determined based on efficient construction scheduling, limited state involvement on the day-to-day operations, and keeping the potential rate structures for water and wastewater services in check. The potential rate structures can impact the surrounding local and the recruitment of future tenants as it typically takes into consideration the initial investment of the infrastructure along with the depreciation of those assets over time.

It was determined to be most efficient and beneficial for the MRM that the State would maintain a level of involvement that allowed for oversight of the rate structures to best market the site, while not so involved that the State are the directors of the utility business. If this continues to be the desired direction of the MRM, the first option would not be the most optimal, however, there could be a role that the MUA would play in the remaining options. Gresham Smith has previously provided draft legislation that would establish the MUA and includes latitude to the MUA to enter into agreements with private entities to own the utility system and/or to provide utility service, such as a P3.

If the State does not pursue the MUA option, then the only route the State could accomplish having a private entity operate the system is via a P3 arrangement. The fifth and sixth option are both types of P3s. The difference between these options is that the latter includes the

infrastructure as part of the partnership instead of it being completely owned by the State. Other benefits to utilizing a P3 include: it is an alternative delivery method that could allow a more expedited construction schedule, the up-front costs could be minimized by spreading out the investment in a partnership, and the regionalization of service would be allowable rather than it being restricted to the MRM. As stated in a recent wastewater study, a "regional system would provide a greatly expanded service area, exponentially increase the customer base and allow for increased wastewater capacity for the area."⁹

P3s are relatively new and have not been done in large scale within the State of Tennessee. Legislation must be established by the State to allow for these options as P3s are currently limited or project specific. In addition, the P3 must be structured to be equally beneficial to all partners of which there are many ways to do. It is recognized that P3s can be complicated to procure, execute and monitor. By their nature, they need lengthy contract periods to be attractive for potential bidders and effective mechanisms to terminate in the event of non-performance.

If a P3 is the agreed upon direction for the MRM, the recommended next steps would be to pass legislation to establish a MUA. The legislation, just like the draft version Gresham Smith created, must allow the MUA to enter into agreements

⁹ HTL Alternative Wastewater Options July 2020

with private entities to own a utility system or to provide utility service. Gresham Smith has previously provided draft qualification documents for the P3 selection process. In order to establish a successful P3, it is ideal to put together a clear scope definition that will encourage response rates from potential partners. The process to privatize water and waste water services is a legal hurdle unique to the MRM that most competing sites may not have to contend with.

Incentives

The State offers an aggressively competitive incentive program that is highly customized. TNECD and TVA have been very successful at landing prospects of all types with the incentive program offered. The incentive of free land has even been offered for this vast site, yet prospects still landed elsewhere.

The incentives offered are not an issue for the MRM. The value of the incentives however must be offset by cash required to mitigate risks associated with the site. The more money the State puts toward “fixing” the site, the less money the prospect will receive toward the bottom-line capital investment they are carrying on their books. The State may lose at the overall incentive value evaluation if the line items for mitigating risk are itemized as part of the value of the total package. The State has been very intentional at trying to overcome this challenge. Sometimes incentives are not sufficient to outweigh uncertainties in the minds of prospects.

Marketing

Among multiple entities marketing the MRM are:

- TNECD
- TVA
- HTL Advantage
- Memphis Regional Chamber of Commerce
- Brownsville Chamber of Commerce
- Other local and regional ECD organizations

The site is getting excellent exposure to major manufacturing prospects that have historically looked and are continuing to look for sites. The MRM appears to make it to the Request for Sites phase and even appears to make it to the long list of sites that are further evaluated and shortlisted for site visits.

Significant Utility Infrastructure Investment

The State has appropriated \$174 million in funds to support the MRM, per the MRM marketing website. Of the allocated funding, approximately \$90 million has already been spent on the water and wastewater infrastructure to date. Such investments include:

- Acquisition of NPDES permit for discharge of treated effluent to the Mississippi River
- Acquisition of easements along the proposed wastewater effluent force main route
- Construction of a one million-gallon elevated

storage tank on the MRM site for potable water storage and system pressure

- Drilling of test holes for raw water supply wells
- Engineering services for preliminary design of water supply wells, water treatment plant, elevated water storage tank, wastewater treatment plant, storage lagoons, and effluent force main
- Purchase of 169,000 linear feet (32 miles) of 18-inch HDPE force main piping

Overcoming the Environmental Permitting Challenges

The State has conducted many different environmental studies on the MRM including Phase I/II Environmental Site Assessments, wetland mitigation studies, threatened and endangered species assessments, and archaeological investigations. Based on the review of the available report resources at the time, two main issues for the site became apparent: the stream/wetland mitigation requirements and the endangered species impacts.

Fortunately, the required regulatory permits for the treated wastewater effluent discharge into the Mississippi River and effluent force main crossings of jurisdictional waters have already been acquired. Further mitigating these types of risks for other areas of development could help the MRM stay relevant in the final stages of the site selection process.

What does the marketplace want now?

Who's been looking?

An analysis using the information provided by the State of Tennessee showing 18 prospects have previously visited the site. The industries from which the prospects represent provides an indication of what has historically been needed in the marketplace. The data indicates that OEMs are looking and visiting the site for a deeper look at what it has to offer.

Unfortunately, the data also reveals that the MRM has been unable to land an OEM in spite of the ample opportunities to entertain OEM prospects. OEMs do not build new facilities often. The fact that the MRM has missed the opportunity 5 out of 5 times says the MRM is not attractive in the final selection phases for an OEM.

It is apparent that the State is not limiting recruitment to OEMs but has expanded to other major manufacturing that could produce similar direct and indirect investments in the region. The outcomes for these industries are the same. Ample opportunity to market the site has existed to no avail.

	Total	Total Site Visits
OEM	5	3
Battery/Stored Energy	5	4
Tire Manufacturing	6	4
Data Center	1	1
Appliance	1	1
Total	18	13

Who's looking now?

According to American Council of Engineering Companies (ACEC) economist, the top four industries likely to grow post-pandemic are:¹⁰

- Commercial & Residential Real Estate
- Intermodal & Logistics
- Energy & Utilities
- Healthcare, Science & Technology

A target industry analysis specific to the MRM should be conducted and overlaid with the economic drivers existing in the marketplace. This will best identify future prospects for the site and allows for targeted recruiting.

One of the strongest growing industries is intermodal & logistics. This is a strength for the region when considering the high LQs for the workforce present in the region.

Energy & utilities is another growing industry sector which includes stored energy production/ battery production. The MRM has entertained prospects from this growing industry sector, but has not been able to close the deal.

¹⁰ (McLaughlin, E. (2021). Private Market Resources & Economic Outlook (January 8, 2021.) [PowerPoint Slidest]. ACEC Tennessee)

The Bottom Line

What Really Matters to Prospects

The State provided a list of 18 prospects that have considered the MRM and reasons why the MRM was eliminated from further evaluation.

What does the data reveal?

When prospects make their way to the MRM during the site selection process, three of the key criteria necessary to win the project are significantly impacting the decision. These reasons include:

- Workforce concerns
- Infrastructure uncertainties and schedules
- Quality of life

When a site only has one deficiency in the key site selection criteria, the site may make it to the final round and successfully land the prospect. However, when multiple deficiencies exist, the uncertainties compound.

Prospect Activity at the MRM & Reasons for Elimination

While the MRM has emerged as a potential site contender for prospects, ultimately workforce concerns, infrastructure uncertainties, and quality of life are the main factors driving elimination of the site.

Industry Sector	Total Prospects	Reason For Elimination After Site Visit			
		Total Site Visits	Workforce Concerns	Infrastructure Uncertainties	Quality of life
OEM	5	3	3 of 3	3 of 3	3 of 3
Battery/Stored Energy	5	4	4 of 4	3 of 4	4 of 4
Tire Manufacturing	6	4	3 of 4*	3 of 4*	4 of 4
Data Center	1	1	-	1 of 1	-
Appliance	1	1	1 of 1	1 of 1	1 of 1

**One tire manufacturer is the only outlier that does not have major concern in all three areas and it is a project that is on hold. The full selection process has likely not been completed and data available for this assessment may not be based on complete analysis and feedback for the site.*

What do site selection consultants likely conclude?

A site selection consultant is retained to provide ideal sites for a prospect and a resulting deal that supports the business-operational success of their client. **The term “ideal” means a site is shovel-ready with everything in place to make the project a success**, based on the unique site criteria they compile with the client. Anytime one of the key criteria identified have a DRI less than 5 and is an area of concern in a criteria

of importance, the risk of the site being suitable and presenting success for their client diminishes. **The desktop analysis shows the MRM is unlikely for selection due to multiple uncertainties in key criteria.** Until the MRM becomes the only option or the uncertainties of the MRM can be reduced to be less than the competitive sites, the MRM will not be selected. The MRM could benefit from aiming toward three strategic areas of focus to best improve the site’s success: workforce, infrastructure stability and quality of life.

Three Uncertainties

In the data provided by the State of Tennessee, prospects indicated the following reasons for eliminating the MRM from further consideration.

1. 78% of prospects indicated workforce concerns
2. 89% indicated concerns related to infrastructure timing
3. Over half (61%) indicated major market proximity/lifestyle was a key reason

Diving into the more detailed view of prospect concerns revealed that five of the 18 prospects involved OEMs. These statistics indicate the site has enough positives to be captured by the broad net cast during the site selection process. Incentives, cost of power and assembled acreage under State control, coupled with solid marketing concepts will likely keep this site on future lists. The challenge is making it through the desktop analysis that produces a long list of potential sites, and ultimately reaching the final round.

The DRI for all three of these key criteria is below average, indicating that there is not just one reason for elimination. **There are three.** Key criteria are just that—they are key to the prospect and necessary for selection. **Fixing one will not resolve the deficiency.**

Once site selection enters a shortlist and site visits are conducted, it becomes site elimination, not selection. Sites with deficiencies and uncertainties in key criteria will be eliminated if other sites exist that have no or fewer deficiencies than the MRM.

Potential Strategy for Moving Forward

The State should take a holistic approach in reviewing these three areas of uncertainty, especially relative to other sites that may have a competitive advantage. Understanding the cost and ability, in tandem, to overcome these challenges should also be considered.

The State should review both the current economic conditions and the strengths of the region to determine which industries can be targeted that would not rank these three key criteria as low as an OEM. Understanding industries that do not have heavy process water and industrial wastewater needs may be a worthwhile endeavor.

The notion stating “money can fix anything” holds true, to some extent, for a couple of the key criteria. These would be proactively training the workforce and putting the infrastructure in place. The problem, as previously stated, is that when money is put into “fixing” a site, it does not go to supporting the bottom-line capital investment as incentive for the prospect to locate to the MRM. Funding to improve the site deficiencies may level the playing field, but it will not beat the competition. It should also be noted that training the workforce will not impact the location quotients typically used in a desktop analysis. The fact that the region’s workforce is marginally suitable for an OEM or major manufacturing prospect will be evident. Likewise, explaining away the risk by showing the workforce is underutilized will have to become

part of the marketing campaign. On the contrary, promising to train the workforce is an option, but that takes time and requires acknowledging that the current workforce is not experienced or ready for operation.

Overcoming issues related to proximity and quality of life are more challenging areas to address. For this reason, economic development organizations typically assemble sites within driving distance of a major metropolitan areas with attractive quality of life scores. When considering workforce, it is important to note that many prospects are not just bringing an OEM or manufacturing facility to the region. They are normally attached to engineering centers, U.S. HQ office space, or similar office space requiring management/professional staff commanding a higher quality of life. The quality of life becomes a key criteria to attract leadership and decision makers. Sites closer to a metropolitan area will score higher if the drive time to amenities is shorter and the overall metro area has a high quality of life score. Locating a site closer to a major metropolitan area also provides a larger labor shed area which helps address the risk of not having a suitable workforce in place. Industrial parks or proximity to them also helps because the labor draw is more concentrated closer to the site, versus reaching out 60 minutes or more to get the needed workforce. This may be why sites are selected that are closer to industrial parks and major metropolitan areas with high quality of life scores.

After reviewing this site assessment, there should be a more thorough understanding of the following:

- The strengths, weaknesses, opportunities and threats associated with the site
- Potential uses and programming for the MRM
- Potential strategy for moving forward with the development at the megasite

A competitive assessment against regions with competing sites is critical in understanding if the playing field is equal, or if the MRM contains too many deficiencies in multiple key criteria to overcome. In the absence of the competitive assessment, the data collected as to why the site was eliminated already suggests the site will be challenged every time due to **multiple** deficiencies.

There are critical strategic decisions to be made before the competitiveness of the site can significantly improve. All three uncertainties must be addressed. It will take multi-jurisdictional collaboration, funding and time. How much and how long depends on each solution. Until that is known, the return on investment could be questioned.

**Memphis Regional Megasite
Site Assessment Study**

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