
DISCOVER
MICHIGAN
MICHIGAN ECONOMIC
DEVELOPMENT CORPORATION

STATE OF MICHIGAN
OFFICE OF THE GOVERNOR
LANSING

GRETCHEN WHITMER
GOVERNOR

GARLIN GILCHRIST II
LT. GOVERNOR

September 9, 2022

Dear [redacted]

I want to extend my gratitude again for the continued opportunity to show that not only is Michigan the best site for Project Copper, but also has the best overall business environment and strongest commitment to ensuring your company's success.

We continue to out-hustle and out-compete and have provided answers and solutions to additional questions and feedback we received after conversations last Friday. We are proud of the work that has brought us to this point, as it has truly been a Team Michigan effort.

As you consider our package, and to reiterate our unwavering commitment to winning Project Copper, we would also like your team to know that we have increased the Critical Industry Program Support by $500 million. These grant dollars can be fully disbursed by [redacted]

We are also pleased to offer $100 million to support Project Copper's talent pipeline through the development of a [redacted] academy with [redacted] Along with the CIP grant, this culminates in a total Critical Industry Program incentive of $2.5 billion.

We understand how truly transformational this project will be for your company and the state of Michigan and we can't wait to welcome you home.

I remain available to speak with you at any time during your deliberations. Please do not hesitate to contact Quentin at any point. His number is 517.881.5861 (work) and 225.235.4830 (personal).

All of Team Michigan knows that this project is vital for Michigan and our nation.

Let's get it done!

Gretchen Whitmer

Gretchen Whitmer
Governor

Team Michigan has moved mountains, lets move the world forward together!

Cc: [redacted]

MICHIGAN LEGISLATURE

September 9, 2022

[redacted]
Chief Executive Officer
[redacted]

Dear Mr. [redacted]

Partnering with [redacted] to bring large-scale semiconductor manufacturing to Michigan would be transformational. The work you do is critical to our national security and economic independence. The scale at which you propose to do it is a testament to the strength of your company and to the significance of this moment for both [redacted] and Michigan.

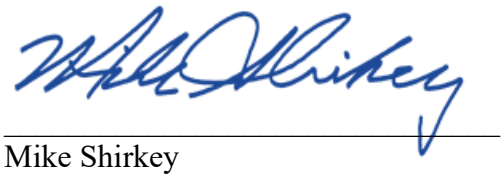
We are writing to make one point abundantly clear: Team Michigan recognizes [redacted] extraordinary value, the historic nature of this investment, its significance to our country, and of course, its significance in forging Michigan's economic future.

As the Republican and Democratic leaders of the Michigan Legislature, we are deeply proud of our global leadership in the automotive and mobility industry, our leading public institutions of higher education, our concentration of engineering and technical talent, and the beauty of our great state. Michigan put the world on wheels, created modern manufacturing, and then retooled it for the 21st Century. The entrepreneurial spirit and innovation are encoded in our DNA.

We want to use that history and technical expertise to make this unprecedented investment a reality. Public participation will be necessary to make it happen, and we are ready to be strong and successful partners. Together, we will make your investment globally and nationally competitive, meet your talent and infrastructure needs, and support the development of a robust supply chain.

You may have already witnessed a certain and unique pride that Michiganders have in their state. We can say in no uncertain terms that Michigan will welcome and support [redacted] as no other place will, as your faith in us and investment in our future will be recognized and reciprocated for all that it is. We deeply hope that you will become part of Team Michigan.

Sincerely Yours,



Mike Shirkey
Senate Majority Leader

Jim Ananich
Senate Democratic Leader

Jason Wentworth
Speaker of the House

Donna Lasinski
House Democratic Leader

MICHIGAN ECONOMIC
DEVELOPMENT CORPORATION

September 9, 2022

[redacted] and the entire Project Copper Team,

What a journey this has been, and Team Michigan has been delighted to travel it with you! We continue to appreciate your interest in Michigan and remain committed to overcoming any challenge and moving all mountains to get to "YES" as ***Michigan is truly the best location and partner for Project Copper.***

Today we are providing information on many topics, but we don't want to bury the lead. Here are some key updates:

ADDITIONAL INCENTIVES: ***We are delighted to propose a financial investment award of $2.85 billion that can all be payable by [redacted] Specifically, we have increased the Critical Industry Program award by $500,000,000 and an additional $100,000,000 to co-create a [redacted] academy with [redacted]*** With mutually agreed upon terms, the Critical Industry Program Award funds can be fully distributed to Project Copper by [redacted]

LAND ASSEMBLY: ***Team Michigan has assembled more than 96% of the land required. Since last Friday's submission, three more parcels have been added to controlled property*** as indicated in the attached map. We continue to push forward in securing additional parcels and will provide regular updates as land control efforts continue.

GEOTECH STUDY: As you will see in photos in the attached, we have rigs on site to perform this study and ***borings have begun!***

WATER/WASTEWATER TREATMENT COST SOLUTIONS: For some time, Team Michigan has proposed a public/private partnership for industrial wastewater treatment whereby EPCOR or similar partner would finance, design, build and operate the treatment plant, and that still remains our proposed option. However, with the additional incentives mentioned above and any of the other Critical Industry Award Funds Team Michigan has pledged to this project, ***Project Copper can choose to apply a portion of these funds to the capital costs of the wastewater treatment plant and drastically reduce financing fees and usage rates.*** We expect Michigan can meet or exceed the wastewater treatment rate from any competing states depending on how Project Copper chooses to use the funds we are providing. More information can be found in the attached material.

Please review the attached detailed information and respond with any questions you may have. **ASK: We would welcome a subsequent call to go over this information and any additional questions you may have.**

Once again, thank you for your continued engagement with Team Michigan and ongoing discussions throughout this process. We remain committed to moving mountains for Project Copper!

Please feel free to contact me, anytime, at 225.235.4830 (personal mobile) or 517.881.5861 (work mobile).

Continued thanks and continue to stay safe and well,

Quentin L. Messer, Jr.
Chief Executive Officer

PURE MICHIGAN®

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Incentives

PROJECT COPPER: INCENTIVE SUMMARY	INCREASED OFFER VALUE
Job Creation and Investment Incentives*	$2,500,000,000
Infrastructure Support & Land Assembly*	$1,257,077,000 to $1,291,077,000
Tailored Talent Solutions*	$479,794,644
Cost Mitigation	$55,146,559,158
TOTAL	**$59,383,430,802 to $59,417,430,802**

**Availability and amounts of this funding are contingent upon legislative approval*

PROJECT COPPER: INCENTIVE MATRIX	
PROGRAM	**INCREASED OFFER VALUE**
Job Creation and Investment Incentives	
Critical Industry Award*	**$2,500,000,000**
Employment Opportunity Program (Personal Income Tax Capture over 10 years)	$—
Research and Development Credit	TBD
Infrastructure Support & Land Assembly	
Strategic Site Readiness Grant***	$750,000,000
Site Readiness Planning Grant	$2,547,000
MEDC Executive Implementation Team****	$1,350,000
Michigan Department of Transportation: Economic Development Fund (Category A)	$16,000,000 to $50,000,000
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
Tailored Talent Solutions	
Critical Industry - Talent Solutions Grant*	$350,000,000
Workforce Housing Loan Program	$10,000,000
Michigan Works!	$16,144,644
Michigan New Jobs Training Program	$500,000
Talent Solutions Implementation Team (3–5 team members + 40% Marketing)******	$3,150,000
[redacted] Program	**$100,000,000**

Incentives con't

PROJECT COPPER: INCENTIVE MATRIX con't	
PROGRAM	**INCREASED OFFER VALUE**
Cost Mitigation	
MSF Designated Renaissance Zone Abatement******* (50 years Real and Personal)	
Real Property Tax Savings	$23,841,244,563
Personal Property Tax Savings	$21,560,092,310
State Essential Services Assessment Abatement	$2,950,920,000
Real Property Tax Abatement (PA 198 of 1974)********	$275,558,323
Sales and Use Tax Exemption	$3,942,000,000
Pure Michigan Business Connect	$700,000
Automatic Elimination of Personal Property Tax for Eligible Manufacturing Equipment	$2,544,043,962
Building Permit Cost Reduction	$32,000,000
TOTAL	**$59,383,430,802 to $59,417,430,802**

** Availability and amounts of this funding are contingent upon legislative approval*

*** Up to $277 million in additional Critical Industry Program support will be available for supplier jobs created as a direct result of Project Copper. Availability is contingent upon legislative approval.*

**** If these proposed funds are approved by the Michigan Legislature, we would propose to provide up to $750 million towards the purchase of land, investment into public water and sewer extensions, and treatment expansion on the [redacted] in conjunction with Project Copper.*

***** MEDC is committed to designated three executive level team members for three years to serve as a concierge team to assist Project Copper with coordinating project implementation.*

****** [redacted]*

******* MEDC is committed to designated three to five team members for three years to serve as a Copper Talent Team to assist Project Copper with coordinating talent implementation and related marketing costs.*

******** The Renaissance Zone may also require a PILOT for additional local governmental and emergency services required to support the site.*

********* Assumes four (4) separate PA 198 abatements starting in 2022, 2025, 2029, and 2032.*

Incentives con't

CIP AWARD STRUCTURE MENU

The options presented in the table below represent a Critical Industry Program ("CIP") award of $2,850,000,000 for the creation of [redacted] direct company jobs and investment of [redacted] ***All CIP funds can be disbursed to the company before*** [redacted]

AWARD TYPE	DISBURSEMENTS	CLAWBACK/REPAYMENT[1]
Reimbursement-based Forgivable Loan	Quarterly reimbursement of eligible expenses actually incurred and paid by the company	Complete forgiveness if company invests at least [redacted] and creates at least [redacted] qualified jobs on or before [redacted] [redacted] formula-based partial forgiveness if the company does not meet the investment or qualified jobs commitment by [redacted]
Milestone-based Forgivable Loan	Disbursement of specified amount of funds upon Company's achievement of defined milestones	Complete forgiveness if company invests at least [redacted] and creates at least [redacted] qualified jobs on or before [redacted] [redacted] formula-based partial forgiveness if the company does not meet the investment or qualified jobs commitment
Reimbursement-based Forgivable Loan w/ Phased Forgiveness	Quarterly reimbursement of eligible expenses actually incurred and paid by the company	Loan forgiven in phases as company achieves defined jobs and/or investment targets during the term
Milestone-based Forgivable Loan w/Phased Forgiveness	Disbursement of specified amount of funds upon company's achievement of defined milestones	Loan forgiven in phases as company achieves defined jobs and/or investment targets during the term
Reimbursement-based Grant	Quarterly reimbursement of eligible expenses actually incurred and paid by the company	Formula-based clawback of disbursed grant funds if company does not invest [redacted] or create [redacted] qualified jobs on or before [redacted]
Milestone-based Grant	Disbursement of specified amount of funds upon company's achievement of defined milestones	Formula-based clawback of disbursed grant funds if company does not invest [redacted] or create [redacted] qualified jobs on or before [redacted]
Reimbursement-based Grant w/ Phased Clawbacks	Quarterly reimbursement of eligible expenses actually incurred and paid by the company	Clawback obligations are phased out/reduced as the company achieves defined jobs and/or investment targets during the term
Milestone-based Grant w/Phased Clawbacks	Disbursement of specified amount of funds upon company's achievement of defined milestones	Clawback obligations are phased out/reduced as the company achieves defined jobs and/or investment targets during the term

1 The clawback and repayment terms in this table are specific to the jobs and investment requirements of the proposed award. The formulas referenced in this table will be negotiated with the company as part of the term sheet and agreement.

Site Assembly Updates

Team Michigan continues to make significant progress on site assembly. Three more parcels have been added to controlled property as indicated in the map below. We continue to push forward in securing additional parcels and will provide regular updates as land control efforts continue.

*A larger map can be found in the appendix of this document.

Water/Wastewater Costs, Rates & Buildout Timing

Team Michigan is committed to water and wastewater utility partnerships that are most advantageous to Project Copper, while also providing the most flexibility possible. On the process water and wastewater side, our partners, Stantec and EPCOR, set the standard as the best in the business for [redacted] industry and other complex water treatment industrial needs. **Additional information on both companies can be located in the appendix for your reference.**

On potable water and sanitary wastewater, [redacted] are sophisticated utility providers and ready to scale further and serve the needs of the project itself, suppliers and community growth. For all water and wastewater related needs, the technical teams are eager to proceed with full design and engineering and timeline pressures are not anticipated per Project Copper's construction start and operational start.

Team Michigan has previously provided information on proposed solutions for Potable Water, Non-Potable Water, Industrial Wastewater and Domestic/Sanitary Wastewater. We are including it again for you here:

WATER

- **Potable Water:** [redacted] Transmission main, ground storage, elevated storage, booster station. The biggest piece of the cost is the transmission line extension.
  - » **Estimated cost:** [redacted]
  - » **Funding Source: Team Michigan Provided Strategic Site Readiness Grant.** [redacted] have a high confidence with this number based on current projects and studies. This includes recent upward shift in construction numbers.
- **Non-potable/Industrial Water:** Stantec estimate with [redacted] source, intake structure, conveyance, and engineering for [redacted] water treatment plant.
  - » **Estimated cost:** [redacted]
  - » **Funding Source: Team Michigan Provided Strategic Site Readiness Grant.** Based on what Stantec understands as the current benchmark for Project Copper non-potable water supply.
  - » *Note: Stantec believes further effluent reuse may be possible resulting in additional capital and/or operational savings.*

WASTEWATER

- **Domestic/Sanitary Wastewater:** [redacted] New wastewater treatment plant near site, [redacted] which includes capacity to serve suppliers.
  - » **Estimated cost:** [redacted]
  - » **Funding Source: Team Michigan Provided Strategic Site Readiness Grant.**
- **Industrial Wastewater:** Stantec estimate [redacted] WWTP, DBFOM by EPCOR.
  - » **Estimated Cost:** [redacted]
  - » **Funding Source: City/EPCOR or similar partnership**—Finance/Construct and operate package. EPCOR is responsible to design, build, finance, operate and maintain (DBFOM) the WWTP facilities, direct agreement with company, with blessing of local govt [redacted] who cannot on its own service this large and specialized use

For some time, Team Michigan has proposed a public-private partnership for industrial wastewater treatment whereby EPCOR or similar partner would finance, design, build and operate the treatment plant, and that still remains our proposed option. However, with the additional incentives now being offered and any of the other Critical Industry Grant Funds Team Michigan has pledged to this project, **Project Copper can choose to apply a portion of these funds to the capital costs of the wastewater treatment plant and drastically reduce financing fees and usage rates.** We expect Michigan can meet or exceed the wastewater treatment rate from any competing states depending on how Project Copper chooses to use the funds we are providing. Should Project Copper choose to apply Critical Industry Grant Funds to cover 100% of the WWTP facility, we anticipate the Process Wastewater cost will be [redacted] per thousand gallons. Additional

Water/Wastewater Costs, Rates & Buildout Timing con't

scenarios of financing various portions of the facility will provide varying rate estimates. To assist in helping identify these variations, Team Michigan will provide a process water and wastewater rate estimator separately to help Project Copper further understand the rate breakdown and discern a best path forward.

We also want to point out that some locations offer very low rates using existing wastewater treatment capacity but over time the effluents from the plant degrade the entire community's treatment system. Michigan's solution includes a new dedicated system that can provide long-term sustainability and cost stability dependent on Project Copper's operations, rather than those of the entire community and potentially thousands of other users.

[redacted] manufacturing is classified as an EPA categorical industrial user. In Stantec's experience, even very large municipal wastewater treatment plants [redacted] are not equipped with the processes necessary to effectively remove a significant portion of the complex chemicals present in the [redacted] waste stream as this grows over time. Without an adequate industrial pretreatment facility designed and constructed with the initial fab, significant disruption to the biological treatment processes of a municipal WWTP will inevitably occur resulting in NPDES permit violations and, ultimately, the need for the municipality to require the [redacted] manufacture to implement more expensive post-operating industrial pretreatment facilities. If the municipality intends to accept the [redacted] wastewater at their municipal WWTP, all the Company would be doing is postponing the inevitable cost associated with building their own plant. Here are some questions that may be helpful for you to ask competing states if you have not already done so:

- What is the reserve treatment capacity of the municipal WWTP receiving the [redacted] waste stream?
- What can the competing site provide to clearly demonstrate that the above scenario will not arise if selected by the company?

Further, industrial pretreatment can be utilized as a key component of the corporate sustainability strategy. The [redacted] industry requires tremendous daily water demands. A robust industrial pretreatment facility will provide the opportunity for onsite reuse of the highly treated [redacted] wastewater for [redacted] manufacturing processes and [redacted] making water streams. This approach will reduce water use, infrastructure capital costs, and long-term operating costs, promoting environmental stewardship and corporate sustainability.

EXAMPLE WASTEWATER TREATMENT PLANT BUILDOUT SCHEDULES

Finally, please find information on recent local wastewater treatment plant builds with plant size, rates and timing in the appendix of this document.

Geotech

We have included the previously provided information regarding the Geotech work to the appendix of this document for reference.

Q1: Do you have a schedule on when the soil borings and test pits with lab results will be done?
A1: Thank you for providing load information on [redacted] Geotech work was initiated September 8, with rigs on site now as demonstrated in the picture below and additional images in the appendix of this document. The engineering firm has multiple drilling rigs lined up to perform the borings. During our field work, and similar to how the team performed the geotechnical evaluations for the three recent battery cell plant projects (in Mich., Ohio, and Tenn.), we will issue progress memos containing recommendations to help the rest of the design team moving on their pieces of the puzzle.

Q2: The high-water table is concerning as it mentions possible spring feed through cracks in underlying sandstone. Can we understand where these are located on a map and how large of springs or issue this is? Would this be under the locations where we are looking to build fabs?
A2: Groundwater is anticipated to be encountered at depths of roughly 5 to 15 feet below the existing ground surface. The groundwater appears to be emanating from the interbedded granular strata, and possibly from the fractures in the sandstone/siltstone. The likelihood for encountering artesian groundwater conditions onsite appears to be low. Some of the groundwater encountered in localized areas that contain significant organic deposits could be spring-fed. To our knowledge, there are no known springs at this site, or in the vicinity of this site. For clarification, the "spring" we referred to (highlighted above) is not groundwater flowing from the sandstone to at/above the existing ground surface. The groundwater (if/where encountered) in the upper 30 to 40 feet at this site (above the sandstone) is expected to be perched or entrapped in granular soils overlying less permeable clayey soils. This perched groundwater is not an issue for development, as it can be effectively controlled as part of the conventional earthwork and site development operations. An example of the "spring" we referred to would be similar to a perched groundwater source that can be controlled in the same manner as other perched groundwater sources. On relatively large sites, sometimes we find that local groundwater levels can vary throughout the site due to differences in these perched groundwater source(s).

This site is in an upland area and, geologically speaking, is very much a buildable site. This site has similar subsurface characteristics as other successful developments that have commonly occurred in Michigan, the Midwest and northeastern United States. The team's experience with previous soil borings on and around this site supports these conclusions. We (SME) have been active with local geotechnical consultation in the [redacted] Michigan vicinity and have been exploring subsurface conditions (for previous projects) on and in the vicinity of this site for nearly 60 years.

Wetlands/Drain Relocation

Intercounty (IC) drain relocation proposed to shift from open ditched to a buried, enclosed pipe to increase available acreage and routed around site.

Q1: Reconfirm cost [redacted] and timeline of relocating drain. Michigan to confirm this estimate.
A1: Yes, we have included [redacted] in our offer to relocate the drain. This will come from the Strategic Site Readiness Program. We have reincluded the timeline below.

[redacted]

Q2: Wetlands will be dealt with via drain relocation project. From the Geotech report this should be doable but would like Michigan to confirm.
A2: Team Michigan confirms that Project Copper needs can be fully met as it relates to the wetlands and drain on the site. The process for addressing wetland impacts and drain relocation needs will be completed during the permitting process, which will address the statutory requirements of avoidance, minimization, and mitigation. Without having a permit application to review, it is not possible for EGLE to verify how these water impacts will be addressed. However, Project Copper can have confidence that these issues can be fully addressed and that neither wetlands impact nor drain relocation will prevent this site from supporting Project Copper's needs.

Vibration Study

Q1: High frequency [redacted] rail line runs [redacted] from the site, confirm plans for vibration study

A1: Confirming Team Michigan is engaging an engineering firm to prepare a vibration study, using the most recent test fit/site plan provided. The same engineering firm that completed the [redacted] vibration study will conduct the [redacted] study.

The nearest fab building point to the rail line is approximately [redacted] distance, with a more typical distance of [redacted] depending on structure location. Team Michigan understood from previous Project Copper dialogue across visits that this distance was sufficient enough that a vibration study may not be needed, but is proceeding with one now, per your request.

ASK: The engineer asked if the company is okay with the form of report that was used for the [redacted] study, which included monitoring for a one-week duration, but no other criteria, or if there are changes to the requirement. Happy to coordinate a call with the engineer if that is helpful. Schedule will depend on coordination of site logistics (borings, farming), but in [redacted] was done in three, one-week phases (site distances from rail) for data collection and then report out. The study and schedule can proceed when there is a clear understanding of the requirement.

Electric and Gas Infrastucture

Q1: [redacted]

Draft Road Plan

Q: [redacted] relocation completion date of 2029 is not aligned to the project requirements –Michigan pulled in by two (2) years to 2027. We would like to see this pulled into the end of 2025 and alternate road upgrades. Company further requested site perimeter road options.

A: Yes, Team Michigan can meet this desired end of 2025 timeline. Improvements established by the federally required planning process (aka environmental assessment or EA) will begin in the spring of 2024 and be completed in 2025.

The map below is a draft concept (a fit test for the roads if you will) showing potential road improvements typical for the size/scope of this development. This concept plan is in draft form as final improvements will be based on realized company needs, intensive public engagement, and a traffic study to identify warranted improvements, during the environmental assessment.

We have also reattached the letter from MDOT in the appendix of this document.

Project Copper Draft Conceptual Road Improvements at Build-Out*
09/07/2022

** Subject to the federally required environmental assessment process that determines specific locations of reroutes and new roadways. Potential road improvements shown are typical for the size/scope of development, but will be determined by traffic study demonstrating warranted improvements.*

*** Final road improvements to be bid early 2025 per the alternative delivery schedule provided by Director Paul Ajegba*

Regional Construction Capacity & Support

REGIONAL CONSTRUCTION LABOR FORCE

Q1: What is the construction support available in the region?

A1: The [redacted] has an experienced ready-to-go construction team for Project Copper with the experience, relationships, infrastructure, people, plan and dedication necessary to get the job done better than anyone in the world.

Despite the [redacted] proven ability to build many historically massive projects simultaneously, Team Michigan understands Project Copper presents a unique set of requirements. The plan to address Copper's distinct complexity will deliver on time and on budget:

1. Michigan's trades have strong relationships with national partners who are already beginning work on [redacted] in other locations. These relationships allow Team Michigan to immediately raeplicate and add dedicated staff and experts to its local team. Expect workers from across the nation, as part of the state's trades, to be used for this project.
2. Team Michigan have opened and have expansion plans underway for two training facilities owned by the trades, both existing within a reasonable distance of the Copper site [redacted] Team Michigan can also leverage additional training facilities on the west and east sides of the state.
3. [redacted] will also help provide outstanding welding, electricians, and other highly skilled, customized trade personnel.
4. [redacted]
5. All [redacted] s provide year-round skilled trades training to high school students.
6. Today, 174,000 construction tradespeople are ready to go in Michigan, with 35,000 active workers in the [redacted] alone. In addition to this mass of active, seasoned construction troops, Michigan and the [redacted] have a significant and growing pool of skilled, ready-to-go workers waiting to activate. This considerable existing talent pool matches with successful industry recruitment and retention strategies. Notably, the region and state boast numerous programs to develop world-class construction talent and the career paths to secure this talent in Michigan in support of the growing need for construction workers around the state and nation.
7. Trailers and hotels will likely be a common element of the temporary housing solution for out-of-state construction workers. [redacted] allow the team to uniquely accommodate much of the in-state labor force within one hour, daily or weekly.

REGIONAL CONSTRUCTION EXPERTISE

Project Copper is perhaps the first project of its kind in the nation in magnitude and transformative potential. In the last 10 years, the [redacted] has enjoyed a historic construction boom, routinely building massive construction projects on time and budget, typically with project labor agreements (PLAs) in place. Team Michigan has closely modeled and honed expertise in Project Copper's requirements on a smaller scale. For example, off-site prefab is a common requirement of these projects, as are having staging areas and buildings set up. Recent examples that illustrate Team Michigan's prowess in flawlessly executing significant and complex construction projects include:

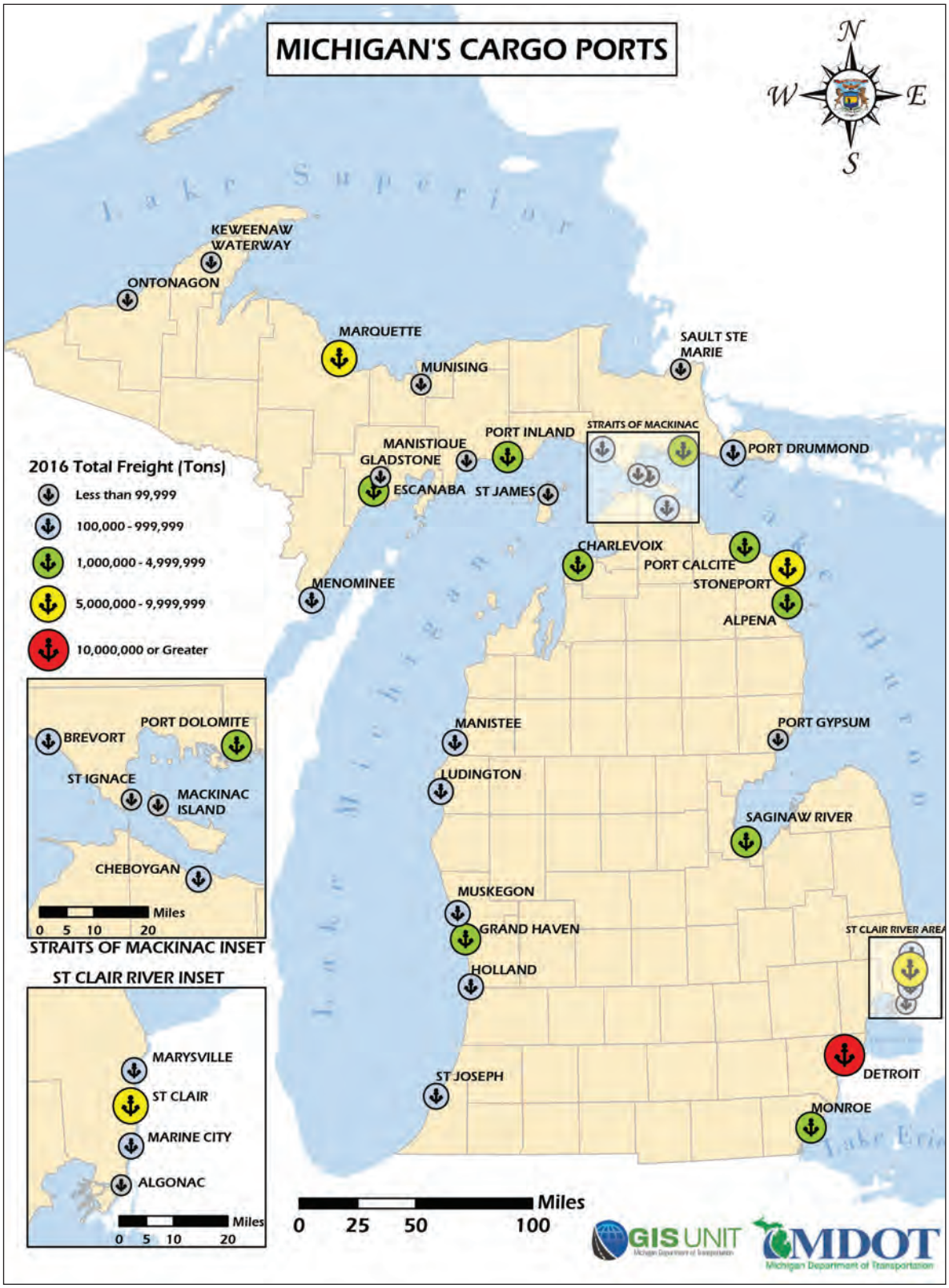
- [redacted] recently completed an all-union (without PLA) [redacted] On time. On budget.
- Coinciding with the [redacted] the recently completed new [redacted] was underway. Completed with a PLA and was almost entirely built during the pandemic. Built by Christman in partnership with Barton Malow. On time. On budget.
- While at the same time, Fortune 500 company [redacted] completed its new [redacted] Built by Christman. On time. On budget.
- Again, same timeframe, construction of the [redacted] Built by Christman. On time. On budget.
- Other coinciding projects include [redacted] (still under construction), and the completion of the [redacted] Built by Barton Malow, Clark Construction and Christman. On time. On budget.
- Two years ago, [redacted] s not dissimilar from [redacted] On time. On budget.

For more information, please review the letter on labor and attached PLA in the appendix of this document.

Regional Construction Capacity/Support con't

PORTS FOR BUILDING MATERIALS

Please find the map below outlining Michigan's ports. Also note that there are other port options available in the larger region.



QUESTIONS & RESPONSES

Foreign Trade Zones

Foreign trade zones (FTZs) are another tool of which Team Michigan wanted to make Project Copper aware. They can help U.S. companies compete in the global marketplace by eliminating, deferring, or reducing duties and, potentially, other costs. An FTZ is located in [redacted] Michigan.

WHAT IS A FOREIGN TRADE ZONE?

A Foreign Trade Zone (FTZ) is a special economic zone in the United States where imported goods can be stored, distributed, processed and used without being subject to customs duty. FTZs provide customs-related advantages. Specifically, foreign trade zones help U.S. companies compete in the global marketplace by eliminating, deferring, or reducing duties and, potentially, other costs.

WHY DO FTZS EXIST?

FTZs were created under the federal Foreign Trade Zone Act of 1934 to create and retain employment and capital investment in the U.S., and to increase the global competitiveness.

WHO USES FTZS?

Many types of companies use FTZs to gain a competitive advantage, including:

- Warehousing/distribution
- Auto assembly
- Vehicle assembly
- General manufacturing
- Pharmaceuticals
- Capital equipment producers
- Machinery
- Oil refinery/petrochemical
- Electronics
- Food processing

WHAT MAKES A GOOD FTZ CANDIDATE?

A FTZ candidate is looking for duty deferral or duty elimination opportunities. A FTZ candidate also wants to reduce or eliminate duty drawback processes and expenses, brokerage fees and associated merchandise processing fees. A company that imports and pays duties is a potential candidate for the FTZ program. Companies that both import and export should seriously consider the benefits of FTZ designation.

WHAT CAN BE DONE INSIDE A FTZ?

Once a company imports merchandise into a FTZ, they are allowed to store it indefinitely and use it in a number of ways, including the following activities:

Assembly	Manufacturing	Salvaging
Storing	Sampling	Mixing
Manipulation	Processing	Display
Cleaning	Repairing	Testing
Relabeling	Repackaging	

WHAT ARE THE BENEFITS AND ADVANTAGES OF FTZS?

There are many benefits available to FTZ users, including:

- Relief from inverted tariffs
- Duty exemption on re-exports
- Duty elimination on waste, scrap and yield loss
- Weekly entry savings
- Duty deferral
- Reduction of taxes and fees
- Enhance global competitiveness
- Creating or retaining jobs and encouraging investment
- Improve supply chain performance
- Zone-to-zone transfers
- FTZs are considered by customs to be CTPAT best practices
- Drive supply chain efficiencies through expedited processing, weekly entry and direct delivery from ports of entry

WHAT ARE THE SUPPLY CHAIN EFFICIENCIES THAT FTZS CAN BRING TO THE COMPANY?

FTZs can improve supply chain efficiencies for a company. When merchandise ships into the zone, users may obtain permission from customs to move merchandise directly from the port of arrival to the FTZ without undergoing commercial selectivity exams. When products ship out of the zone, users may obtain permission to ship weekly (unrestricted) based on an estimate approved by customs before the start of each business week. When goods move in and move out of the zone on an expedited basis, FTZs also create greater supply chain efficiencies.

WHAT ARE THE ADDITIONAL CONSIDERATIONS?

Besides all of the benefits listed above, companies that use FTZs should also consider other factors. Specifically, companies should consider facility site and security assessment. U.S. Customs will review and make recommendations for a company. Level of security will be tied to nature of the operations. Ownership and materials management staff backgrounds will be checked. Also, material management system is important. Companies should make sure of the accuracy of current inventory. Companies can consider to use the FTZ software to manage materials, routine inspections and annual reporting requirements.

Foreign Trade Zones con't

WHAT IS THE DIFFERENCE BETWEEN THE GENERAL PURPOSE ZONE AND SUBZONE?

A Foreign Trade Subzone is an area approved by the FTZ board for use by a specific company. Foreign Trade Subzone companies enjoy all the same benefits as FTZ companies. However, there are the differences between general purpose zones and subzones:

- Subzones are located outside the general purpose sites but are within 60 miles of the port of entry.
- General purpose zones (GPZs) allow multiple users which meet the FTZ regulations to benefit from a public location already established for security, annual reporting and oversight of the FTZ activities.
- GPZs are ready for the business community with a legitimate FTZ need to start taking advantage of zone benefits.
- Subzones allow companies that import and/or re-export products to take advantage of FTZ benefits without having to physically relocate within the FTZ general purpose sites.

WHOM SHOULD I CONTACT FOR MORE INFORMATION

Phone numbers for all Michigan FTZs are listed in the table below. The FTZ specialists at each site can explain and assist with the process.

LIST OF MICHIGAN FOREIGN TRADE ZONES

Zone	Port of entry	# of subzone(s)
FTZ No. 16 Sault Ste. Marie, tel 906.635.9131	Sault Ste. Marie	
FTZ No. 43 Battle Creek, tel 269.968.8197	Battle Creek	4
FTZ No. 70 Detroit, tel 313.331.3842 x306	Detroit	16
FTZ No. 140 Flint, tel 810.600.1433	Saginaw/ Bay City/Flint	3
FTZ No. 189 Kent/Ottawa/Muskegon counties tel 616.331.6810	Grand Rapids	3
FTZ No. 210 St. Clair County, tel 810.982.9511	Port Huron	
FTZ No. 275 Lansing, tel 517.886.3716	Lansing	1

For more general information, contact the MEDC customer contact center at 888.522.0103.

FOREIGN TRADE ZONES IN ACTION

EXAMPLE 1: Duty elimination

Zero duty is due if goods are re-exported. Imported components brought through U.S. ports that enter into U.S. Commerce and are then exported to Mexico for assembly. No duty is owed on goods destroyed or scrapped in the zone. Imported material has been determined to be unusable or defective can be scrapped in the zone without paying U.S. import duty on the original product.

EXAMPLE 2: Duty reduction and duty drawback savings

Upon exit from the zone, the U.S. duty owed will be the lesser of the tariff on the imported component or the finished assembly. An automotive plastic housing has a tariff of 2.5% while a finished assembly unit has an import tariff of 1.5%. The housings could be imported into the FTZ and assembled into a finished unit. Upon shipment out of the FTZ, the plastic housing would pay the 1.5% tariff not 2.5%.

Reduce/eliminate duty drawback processes:

- Time value of money
- 8–20% fees charged by third party processors

EXAMPLE 3: Duty deferral

No duty is paid until goods are withdrawn from the FTZ for U.S. domestic consumption. Generally when importing auto components:

- A minimum of U.S. $25 in customs duty is due at time of port entry
- If imported directly to a FTZ, no duty is due at entry
- Duty is only upon exit of the FTZ into U.S. Commerce
- If the warehouse (FTZ) holds an average inventory of 45 days, the duty payment will be deferred on average by 45 days

EXAMPLE 4: Taxes and fees

Local Ad Valorem Tax exemption on inventory: In states and cities that impose a tax on goods in inventory, these taxes may be exempt as material in the FTZ has not legally made entrance into U.S. Commerce.

Reduce Merchandise Processing Fees (MPF): Upon import an MPF of 0.34641% up to a maximum of $485 per entry is paid to the U.S. Through an FTZ and allowable weekly consolidated entries, the annual maximum fees are $25,220, as well as reduce brokerage fees.

EXAMPLE 5: Drive supply chain efficiencies

FTZ users may obtain permission from customs to move merchandise directly from the port of arrival to the FTZ without undergoing commercial selectivity exams (direct ship). This may accelerate the movement by 2–5 days MMS (prior Flint operation data)

- Imports from Asia to Flint prior to FTZ = 36 days
- Imports from Asia to Flint after FTZ = 27 days

Workforce & Talent Cultivation

Q1: Plan to get a fully day-one ready staffed workforce.

A1: Team Michigan has plans in place to ensure there is a fully day one-ready staffed workforce for Project Copper through collaborative recruitment and training efforts.

Today, the [redacted] has the talent Project Copper needs, and shows promising growth over the coming decade. To fulfill Project Copper roles by [redacted] estimates point to almost 12,000 people already in those roles in the region,[1] and over 37,000 total Michigan graduates expected by 2030.

To ensure a ready workforce, Team Michigan is focusing a multi-pronged approach: from leveraging Michigan's high quality student population, to tapping into the best and brightest of Michigan's current engineering and technical talent; from attracting talent to the [redacted] to upskilling existing residents with specialized, industry-required skills. These initiatives will be supported by significant investments as part of a comprehensive suite of programs, to meet Copper's hiring needs:

- **Copper Campus:** Onsite workforce training accompanied by wraparound support (e.g., child care, transit, etc.)
- [redacted] **Workforce Academy,** [redacted] Certification training for technician and assembly roles to displaced workers and K–12 students
- [redacted] **campaign:** Marketing program to promote quality of life in the [redacted] alongside a loan program to make home ownership easier
- **Copper Scholars program:** Financial incentives to encourage student re-location
- **Copper talent solutions team:** Talent acquisition and development team to help meet necessary hiring targets

New [redacted] investment at [redacted] Academy will not only develop specific degree programs but also translate curriculum needed by industry.

- **Expanded higher education pipeline:** University partnerships with Michigan State University, University of Michigan, Western Michigan University and Grand Valley State University, Michigan Technological University and Wayne State University and Kettering University to bolster on-campus recruiting

…and build on existing state investments:

- **Michigan New Jobs Training Program:** Community colleges enabled to provide free training for employers that are creating new jobs and/or expanding operations in Michigan
- **Michigan Reconnect:** Free tuition for community college to earn an associate degree or Pell-eligible skill certificate for all adults 25+
- **Going Pro:** Companies can apply for grants from this fund to assist in the training, developing and retaining of their current and newly hired employees in order to address talent gaps immediately

Team Michigan will also invest in the long-term success of day one-ready employees by:

- Providing Copper Campus wraparound services, including public transport with in-vehicle Wi-Fi and child care support (additional details in question below)
- Promoting workplace diversity and equity through recruiting and support systems, including touchpoints with Copper team and sponsored affinity groups (additional detail in question below
- Offering work readiness/soft-skills training for better integration and success in the workplace
- Including a commitment that Copper Scholars complete three-year return of service upon completion of the program

[redacted]

Workforce & Talent Cultivation con't

Q2: Plan to ensure provision of high-quality, tech talent pipeline.

A2: The [redacted] site is at the [redacted] —rich with talent and opportunity. Michigan ranks No. 1 in the U.S. for concentration of [redacted]

Team Michigan and our partners, including [redacted] have a clear, holistic vision to develop a long-term ecosystem for Project Copper across major education players:

- **PK–12:** Create a statewide support for outreach and engagement, with private partners and donors to develop the STEM stream of talent. It is crucial to raise awareness about the job potential for the industry, with regional initiatives like provision of devices (e.g., lab kits) and outreach programs (e.g., summer camps). To highlight for K–12:
  - » Michigan has 410 high school robotics clubs, more than any other state
  - » [redacted] has a STEM/early college program to allow students to earn 30 college credits
  - » [redacted]

[redacted]

With the new [redacted] is developing several relevant initiatives as a renowned supplier of engineering talent in the state and with the intention to align with the needs of industry. The [redacted] Academy will be supported by state financial support to focus in the following areas:

- **Developing an engineering technology program,** based on a common foundation with program specialization delivered through stackable certificates. This program would create, maintain, and evolve [redacted] relevant certificates in conjunction with industry, to ensure worker relevance throughout their careers.
- **Leveraging a robust R&D program aimed at next-gen technologies and materials** in the [redacted] space. These include a top plasma group, top diamond and diamond-like carbon electronics capabilities, and novel nano-vacuum electronic devices, as well as unparalleled radiation testing capabilities. In addition, the school is developing the next gen of digital manufacturing, automation, and AI for general purpose manufacturing.
- **Promoting nation-leading supply chain program, in addition to a proposed systems engineering program.** This provides the opportunity to integrate supply chain skills into multi-disciplinary systems engineers, like using AI to optimize production systems.

Workforce & Talent Cultivation con't

Q3: Plan to reach and support diverse candidates and connect with communities.

A3: Team Michigan understands the importance of cultivating a diverse talent pipeline and supporting these candidates both at work and in their communities. Michigan employers across many industries are already leveraging the foundation across the state to find diverse talent with necessary skills and investing in their local communities. Our approach to diversity is three-fold:

Building long-term pipeline of diverse talent through training provider/higher ed student recruitment and support strategies

For example, [redacted] has long been an innovator and leader in the work of diversity, equity, and inclusion. [redacted] has continued working to remove barriers, help, change norms and create opportunity.

In 2020, the proportion of [redacted] Some of the school's metrics include increasing recruitment and retention of students, faculty, academic and non-academic staff from underrepresented backgrounds, increase percentage of courses with DEI topics in syllabus, and increase staff receiving training in DEI, among others.

Recruiting from a Diverse Talent Pipeline

Team Michigan will capitalize on existing efforts in the [redacted] that include some of the most diverse school districts in the state like [redacted] maximize the [redacted] Team Michigan is supporting the build of satellite programs in low and moderate-income zip codes around the state to feed Copper training programs and the [redacted] Academy at [redacted] to ensure a constant pipeline of qualified candidates.

In addition, MichiganWorks! and local EDOs will leverage deep community relationships to promote opportunities for diverse workers to work at Copper and will bring a diverse range of candidates forward.

Lastly, Team Michigan will conduct bi-annual touchpoints with the Copper team to discuss the team's diversity targets for the upcoming months, and to serve as a thought partner in identifying opportunities to reach targets. A liaison program with [redacted] will enable the prioritization of diverse candidates through on-campus recruiting.

Supporting the Retention of Diverse Employees

Team Michigan will pursue the development of a best-in-class support system for diverse employees at the Copper Campus. Means of support might include access to counselors, emergency loans, support services and classes for English language learners, language tutoring and translation services. The goal of the support system will be to foster the holistic success of each employee.

Additionally, Team Michigan will sponsor affinity groups on the Copper Campus to ensure employees have a safe space to connect and access resources. All employees will have access to training in skills like communication, workplace effectiveness and conflict resolution that allow workers to better integrate and succeed in their workplace more easily. And finally, the child care investments made across the state will enable caregivers—particularly women—the chance to fully partake in employment opportunities at Copper.

Child Care Plan

Q1: Plan to provide high quality, sufficient child care support.

A1: Team Michigan recognizes the importance of providing quality child care support for the success of the Project Copper workforce.

Michigan is committed to ensuring every working family has quality, affordable child care that meets their needs. That is why the state:

- Has supported nearly 8,000 child care providers with close to $1 billion in grant funding since 2020 to keep programs open for families
- Made child care more affordable for 150,000 more working families since the start of the Whitmer administration
- Launched the first-in-the-nation Mi Child Care Tri-Share Program in partnership with employers. This program splits the cost of child care three ways: employees pay 1/3; employers pay 1/3; and the state pays 1/3. This helps lower to middle income families manage child care costs
- Set an ambitious goal to open 1,000 new child care businesses by the end of 2024 to expand access to care for families
- Committed $100 million to open new child care programs in areas that need it most

Locally, [redacted] is proud to:

- Have a diverse network of 239 licensed home- and center-based child care facilities
- Have partners like [redacted] the YMCAs, and public-school systems that play a vital role in providing quality child care services for young kids and families, by working alongside 98 child care programs that have earned top quality ratings from the state's star rating system (and 13 programs that have earned national accreditation from the National Association for the Education of Young Children)
- Note the [redacted] School District has initiated universal preschool for students 4+ living within the district as 2021 (an expansion of Great Start Readiness Program), food and transportation will be available at [redacted] pre-K sites, which include 28 classrooms in 14 [redacted] School District buildings
- [redacted]

In this way, Team Michigan is working across sector and community to identify and respond to additional gaps in care for families. We plan to work directly with corporate leaders to support you in opening an on-campus child care facility to meet the needs of your workforce and our community. This partnership, forged through your MEDC talent concierge team, could include:

- Identifying potential operators (from experienced local child care entrepreneurs to the national leader in this space, the Learning Care Group, headquartered in Novi, Michigan)
- We will work with you to support meeting child care licensing standards (action to streamline permitting)—including the potential for funding to renovate a facility through Caring for MI Future
- Connecting eligible employees with child care scholarships through the Child Development and Care Program
- Participating in the MI Child Care Tri-Share Program to lower costs for staff and recruit talented staff to your organization

In addition, Team Michigan supplies support for two other initiatives connected to Copper's workforce:

- A new STEAM-ready child care facility with estimated costs of $2.5 million, of which a portion could be covered through the Caring for Mi Future Child Care Facility Fund grant program (launching fall 2022)
- A program to provide free child care eligible for employees with two children earning less than $55,500. Employees making less than $83,000 could have 2/3 of their child care cost covered through state and employer contributions

APPENDIX

1. Process WWTP Costs, Timing and Capacity of previous projects and rates

a.	Project Name	Plant MGD	Design Time	Permitting Time	Construction Time	Total
i.	Britannia Mine Water Treatment	7	4 mo	Inc.	8 months	12 months
ii.	Evan Thomas Water/WW Treatment	1				21 months
iii.	Regina WW Treatment Plant Upgrades	24	12 mo	Inc.	30 months	42 months
iv.	Darlington Demineralized WTP	2.7	17 mo	Inc.	20 months	37 months

   b. Capitalization $740 million, interest rate of 5% over 30 years
      i. Annual Debt Service of $55.53 million
   c. Annual O&M of $17 million
   d. Annual Operating costs of $62.5 million at full capacity
   e. Full capacity 6.023 million kgals (full utilization)
   f. Rate estimate if 100% financed by EPCOR $12.04
   g. Rate estimate if Capitalized with $500M Additional State Funding Offered $ 5.82
   h. Rate estimate if 100% Capitalization using State Funding Offered $ 2.82

2. Process Water Supply
   a. Capitalization $155 million, 100% funded by state SSRP in existing offer
   b. Annual O&M of $7.5 million
   c. Annual Operating costs of $7.5 million at full capacity
   d. Full capacity 8.9 million kgals (full utilization)
   e. Rate $0.84 / kgal

3. Domestic WWTP Timing and Capacity of previous projects and rates

a.	Project Name	Plant MGD	Design Time	Permitting Time	Construction Time	Total
i.	Escanaba	2.3	9 mo	3 mo	18 mo	30 months
ii.	BCGTUA	.05	4 mo	3 mo	6 mo	13 months
iii.	Owosso	2.0	4 mo	4 mo	6 mo	14 months
iv.	Gladstone*	1.0	6 mo	3 mo	21 mo	30 months
			*Design impacted by funding program. Const. impacted by transfer of flows to new treatment			
v.	Tawas*	2.4	9 mo	3 mo	24 mo	36 months
			*Design impacted by funding program. Const. impacted by transfer of flows to new treatment			

   b. Rate [redacted]

4. Potable Water Supply
   a. Current [redacted]

MEMORANDUM

TO: [redacted]

FROM: Bradford L. Ewart II, PE

DATE: June 20, 2022

SUBJECT: Desktop Geotechnical Review
Project Copper
[redacted]

This memo presents our desktop review of geotechnical conditions at and nearby the project site. We performed this review based on your recent request for a preliminary report regarding the site geotechnical conditions.

PROJECT BACKGROUND

The project site encompasses approximately [redacted] and is located alon [redacted] efer to the Historic SME Project Diagram (Figure No. 1) attached to this memo for the approximate location of the site.

The project site is mostly vacant and consists of farmland, occasional low-lying areas, brush and wood-covered areas, and some stormwater drainage features. Based on aerial imagery, most of the low-lying areas appear to be moderately to heavily wooded. The low-lying areas on the eastern half of the site appear to consist of tall grasses (with limited trees). In addition, there appear to be [redacted]

Site topographic information from online aerial imagery indicates the existing ground surface is generally rolling with low areas along the existing [redacted] that traverse the site from an east to northwest direction. In general, the existing ground surface appears to range from about elevation 805 feet near the northwest corner of the site, to about elevation 855 feet in the northeast portion of the site. Design final grades have not yet been determined for the project. Preliminarily, we anticipate cuts and fills of about 10 feet, or less, will be required to balance the site.

Based on the conceptual site layout plan provided to us, [redacted]

Structural loading information was not available at the time this memo was prepared. Based on our experience, we anticipate the maximum structural loads will be on the order of 500 kips for isolated columns and 6 kips per linear foot for continuous walls. Regarding pavements, we anticipate vehicular traffic will result in less than 500,000 Equivalent Single Axle Loads (ESALs) over the design life of the pavements. The actual design loads will be critical in determining the appropriate foundations, floor slabs, and pavements for support of the proposed structures/traffic planned for the project.

DESKTOP REVIEW – PREVIOUS SUBSURFACE INFORMATION

SME has provided geotechnical engineering services for projects located on and nearby the project site as shown on Figure No. 1. Based on our experience with the local subsurface conditions, we anticipate the existing subgrade will consist of a topsoil layer overlying a predominantly clayey subgrade. The topsoil thickness will likely be roughly 6 to 12 inches, with isolated areas that are thicker due to farming activities, root mats from large trees, natural occurrences, etc.. Some isolated areas of relatively shallow existing fill (e.g., typically, less than five feet thick) will also likely be encountered onsite. The natural clayey soils below the existing fill (where encountered) and topsoil will likely include intermittent strata of sand and silt. The natural sand and silt strata appear to occur frequently within the predominantly clayey soil profile. The natural sands, silts, and clay are underlain by sandstone, and likely some weathered siltstone, at depths of roughly 10 to 50 feet below the existing ground surface.

Expect the strength and the moisture content of the onsite soils to vary. Also, the subgrade, particularly the poorly draining soil (clay, silt, silty sand) and the wet soil, is sensitive to disturbance during construction. We anticipate that the cohesive subgrade onsite will consist of low-plasticity soils, and the potential for chemically active and/or expansive soils onsite appears to be low.

In low-lying areas, it is likely that significant deposits of organic soils (peat, organic clay) and soft clay could be encountered. The thickness of these deposits could be significant (in excess of five feet). If these deposits are located in proposed structural areas, some form of significant ground improvement (undercutting, surcharging) will be required. Overall, these organic soil/soft soil deposits appear to be in relatively small areas that are isolated throughout the site.

Groundwater is anticipated to be encountered at depths of roughly 5 to 15 feet below the existing ground surface. The groundwater appears to be emanating from the interbedded granular strata, and possibly from the fractures in the sandstone/siltstone. The likelihood for encountering artesian groundwater conditions onsite appears to be low. Some of the groundwater encountered in localized areas that contain significant organic deposits could be spring-fed.

DESKTOP REVIEW – GEOTECHNICAL CONDITIONS

Based on our desktop review, the existing subsurface conditions from previous nearby soil borings are favorable for supporting the proposed development at the site. In addition, a number of existing structures that have been constructed on or nearby the site appear to be performing favorably. [redacted]

The United States Department of Agriculture (USDA) Natural Resources Conservation Service provides a Soil Survey Geographic Database that provides some subsurface information (primarily for agronomic purposes) at this site. In reviewing this subsurface information, it appears that most of the site consists of sandy or clayey loam that is desirable for some forms of farming. From previous experience, these types of soils have also been suitable for supporting buildings and pavements. There are isolated areas of water and muck, typically in the wooded low-lying areas (and along surface drainage routes), which appears to represent less than five percent of the site. The muck soils, and waterways, will need to be removed and/or relocated as part of the new development.

As with any development, weather conditions play a role in the construction process. Selecting contractors and construction managers that understand and are highly-experienced with construction in local weather conditions are best suited for achieving effective construction results.

EARTHWORK

The onsite soils are conducive to conventional earthwork operations for the proposed development. Conventional earthwork operations will likely include topsoil stripping, removal of organic deposits, temporary dewatering (where required), proofrolling and subgrade compaction. Some of the soils will have a relatively high moisture content and will need to be dried/aerated in-place and recompacted, or will need to be undercut and replaced with an engineered fill. Modifying or stabilizing the subgrade with lime/cement additives is another effective method for controlling the moisture content, and improving the strength, of the onsite soils.

Vacant properties and farm fields typically employ measures to control surface runoff. It is likely that some minor site grading (cutting and filling) was performed and some informal drainage controls were installed at this site. Addressing buried organic soils (e.g. undercutting) and surface water control and groundwater control (e.g. temporary stormwater storage basins, sedimentation control) early on in construction will be desirable as part of an effective earthwork operation.

FOUNDATIONS

The previous soil borings on/nearby the site indicate the clay and sand below the topsoil layer are suitable for support of foundations, grade slabs, and pavements. For relatively light to moderate structural loads (e.g. less than about 500 kips), design soil bearing pressures in the range of 2,000 to 4,000 pounds per square foot (psf) are common for these local soils. For relatively heavy structural loads, deep foundations (e.g. auger cast piles, aggregate piers, drilled piers, driven piles) would typically be constructed and would likely bear on/in the sandstone/siltstone below the natural clay and sand. Preliminarily, the depth to sandstone/siltstone at this site appears to be roughly 10 to 50 feet below the existing ground surface.

GRADE SLABS AND PAVEMENTS

Conventional grade slab and pavement construction is appropriate for these soils, provided the subgrade is properly prepared during construction. Typically, the in-situ moisture content of the onsite soils is relatively high and some moisture control (e.g. aeration, drying, groundwater control) is required to improve the subgrade for structural support. Other means of soil moisture control, such as chemical stabilization, can also be productive in protecting the existing subgrade from future disturbances during construction and in maintaining the construction schedule.

CONSTRUCTION CONSIDERATIONS

Gravel, cobbles, boulders, and natural soils with rock (sandstone/siltstone) pieces, are known to exist in the soils in the region and should be expected at the site. Overall, the likelihood for encountering these materials in the subgrade is relatively low, but tends to increase as excavations get closer to the underlying sandstone/siltstone.

Isolated areas of buried organics, obstructions, and/or debris-laden soils could be encountered onsite. It will be important to thoroughly probe/test these areas where existing fills are encountered to verify the underlying subgrade is adequate for structural support.

Chemically modified/stabilized subgrade, as well as the onsite clayey and silty soils, can entrap water (e.g. from precipitation, surface runoff) at the surface. During relatively cold/wet periods, it will likely be prudent to slope/pitch the surface of these subgrades so that most of the water can flow toward designated low-points where it can be effectively handled.

If drilled pier foundations are planned for the proposed construction, the local groundwater table will likely require the drilled piers be installed using full-length temporary casing and possibly wet-drilling methods (e.g. using drilling slurry).

The pH of the onsite soil and groundwater are anticipated to be neutral to alkaline. The soil and groundwater are not anticipated to be high in sulfates, chlorides, or other constituents that could attack below-grade concrete structures and/or aggregates. The subsurface conditions will likely be considered corrosive/aggressive to below-grade metallic structures due to the poorly-draining nature of the clayey/silty soils and the relatively high groundwater table.

GENERAL COMMENTS

The above information is preliminary and is based on 1) our experience with local subsurface conditions, and 2) a limited document review of historic subsurface conditions on/nearby the project site. The geotechnical evaluation for this project will require soil borings, test pits, soil probes, lab testing, etc. to prepare engineering report(s) that are specific to the planned development.

We appreciate the opportunity to be of service on this project. If you have questions regarding this memorandum, please contact us.

Prepared By:

Jamie M. Bates, PE
Senior Project Engineer

Reviewed By:

Joel W. Rinkel, PE
Principal Consultant

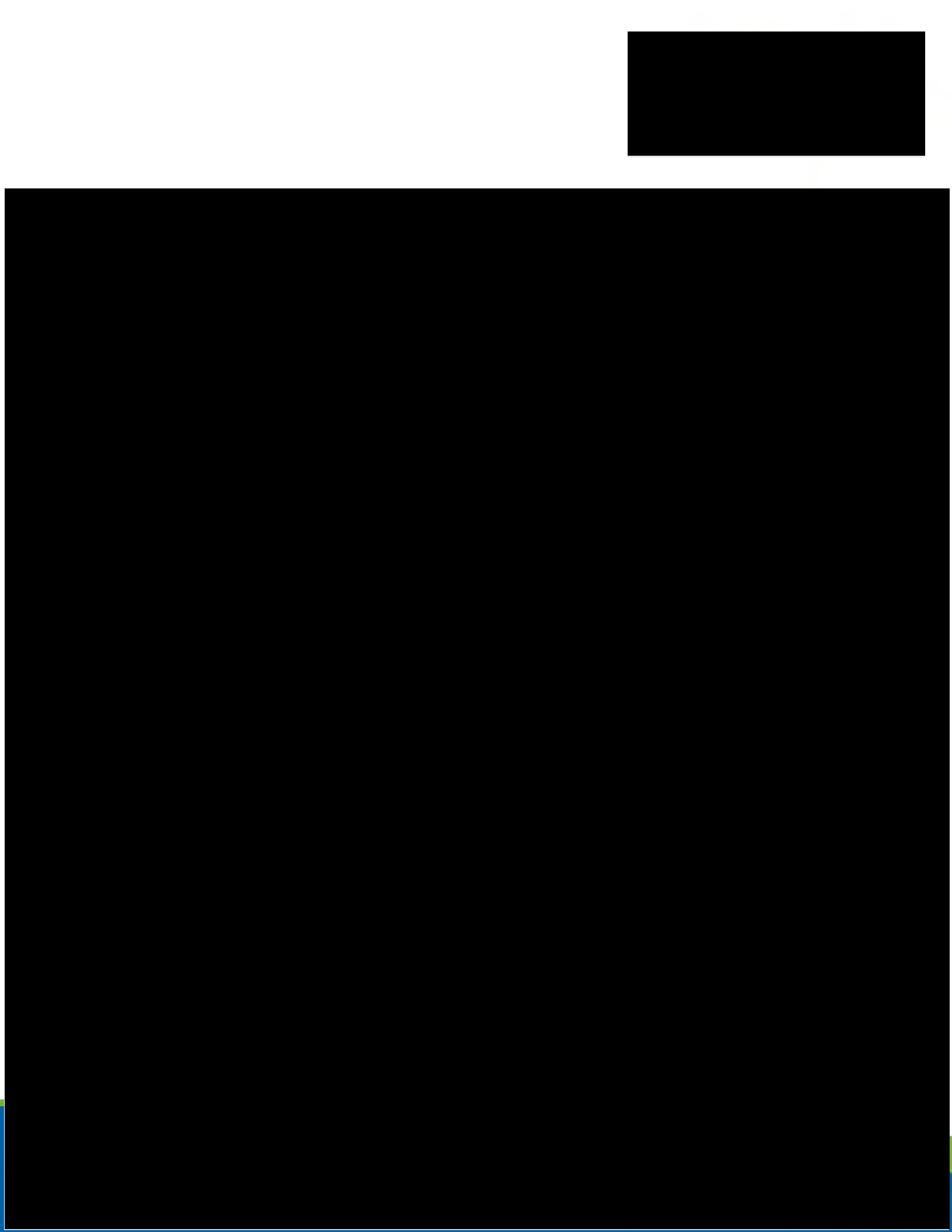
Attachment: Historic SME Project Diagram (Figure No. 1)

[redacted]

RIG PHOTOS

RIG PHOTOS

RIG PHOTOS



METC met with the MEDC and consultants regarding Project Copper [redacted] and came away with two [redacted]

- Provide [redacted] the [redacted] mentary outage da [redacted]

Project Copper Timeline [redacted]

[redacted] TC proposes to build two [redacted] to the customer's site plan at the [redacted] METC expect to achieve this by building the [redacted] On [redacted] is approximately [redacted] and the other [redacted] is approximately [redacted] METC intends to take a parallel approach at building out the [redacted] from each station with the expectation that power will be made available with two [redacted] from the [redacted] in approximately [redacted] followed by redundancy provided to the site with an additional two [redacted] from the [redacted] several months later.

ID	Task Mode	Task Name	Start	Finish	Predecessors	Resource Names
1		**Single Ckt - 30 Mile 345 kV Line**	**Wed 06/01/22**	**Wed 12/31/25**		
2		Routing Study	Wed 06/01/22	Mon 10/17/22		
3		Act 30 Application	Mon 10/03/22	Fri 12/30/22		
4		Act 30 Ruling	Mon 01/02/23	Tue 01/02/24		
5		**Property Acquisition**	**Mon 01/02/23**	Fri 07/05/24		
6		Voluntary	Mon 01/02/23	Tue 01/02/24		
7		Condemnation	Wed 01/03/24	Fri 07/05/24		
8		Design	Wed 01/03/24	Tue 09/10/24		
9		Procurement	Wed 03/27/24	Tue 11/05/24		
10		EGLE Permit	Wed 03/27/24	Tue 12/31/24		
11		Construction	Wed 01/01/25	Wed 12/31/25		
12		**Dbl Ckt. - 8 Mile 345 kV Line**	**Wed 06/01/22**	**Mon 06/30/25**		
13		Routing Study	Wed 06/01/22	Mon 10/17/22		
14		Act 30 Application	Mon 10/03/22	Fri 12/30/22		
15		Act 30 Ruling	Mon 01/02/23	Tue 01/02/24		
16		**Property Acquisition**	**Mon 01/02/23**	Fri 07/05/24		
17		Voluntary	Mon 01/02/23	Tue 01/02/24		
18		Condemnation	Wed 01/03/24	Fri 07/05/24		
19		Design	Wed 01/03/24	Tue 09/10/24		
20		Procurement	Wed 03/27/24	Tue 11/05/24		
21		EGLE Permit	Wed 03/27/24	Tue 12/31/24		
22		Construction	Wed 01/01/25	Mon 06/30/25		

Momentary Outages – Historical Data

METC reviewed the outage history during the last five years on all [redacted] connected to the [redacted] They are the following.

The table below shows all outages that occurred in the last five years. There were three momentary outages and one sustained outage that occurred on a radial line out of the [redacted] Lines not shown in the table below did not see outages within the last five years.

Circuit	[redacted]	Outage Start Data	Fault Duration (cycles)	Initial Cause	Initial Sub. Cause	Type	OC Comments
[redacted]	[redacted]	7/18/2019 22:26	3.59	Unknown	Unknown After Exhaustive Patrol or Investigation	Momentary	The [redacted] opened and closed during clear weather. The fault was identified as X phase to ground and a patrol was recommended for structures [redacted]. A revised patrol location was given for [redacted] The patrol found a flashed bell at structure [redacted]
[redacted]	[redacted]	11/24/2019 6:29	3.49	Foreign Interference	Debris	Momentary	The [redacted] opened and closed during clear weather. The fault was X phase to ground and located [redacted] The patrol was recommended for structures [redacted] The patrol found bird droppings at structure [redacted]
[redacted]	[redacted]	5/14/2021 5:16	3.18	External - All other, exclu. DTF		Sustained	The [redacted] (CE owned) opened and locked out at the same time as the [redacted] momentary interruption. [redacted] corrected the line relaying settings at Cornelius, and the line was returned to service at 1910.
[redacted]	[redacted]	6/10/2021 20:02	3.49	Failed AC Circuit Equipment	Insulator	Momentary	The [redacted] opened and closed during stormy weather. The fault was X phase to ground and located [redacted] A patrol was recommended for two structures on either side of [redacted] The patrol found a flashed poly on the X phase at structure [redacted]

System Reliability Notes to Consider

While the outage data gives an indication of the performance of the current transmission system in the area, this may not be indicative of the expected

performance scoped for this project. Unlike the [redacted] feeding the [redacted] will directly connect to multiple [redacted] Furthermore, the redundant [redacted] feeds will occupy a separate path to the [redacted] Therefore, the [redacted] project represents an inherently more robust scope from a reliability perspective.

Transmission Capacity Expectations

It is reasonable to expect clearing times of five (5) cycles or less for normally cleared faults on transmission systems [redacted] and above as it is standard practice for METC to include dual pilot relaying on that voltage class.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

PAUL C. AJEGBA
DIRECTOR

August 29, 2022

[redacted]

Dear [redacted]

The Michigan Department of Transportation (MDOT) understands the need for Project Copper to have control over the section of [redacted] runs through their site and for the surrounding roadways to support the construction timelines and access needs of the company throughout the project. It is also imperative that changes to the transportation network are supported by and serve the surrounding community.

MDOT can close [redacted] and detour traffic at any time allowing the company to extend power lines across the road and meet all site construction needs. To ensure we meet Project Copper's needs, last week I initiated the environmental review process that will consider company and community needs and determine the appropriate improvements to the surrounding transportation network (road, transit, and non-motorized). On August 24, 2022, Team Michigan met with the agencies responsible for [redacted] county road and transit programs. They shared their enthusiastic support for the development.

Improvements established by the environmental process will begin in the spring of 2024 and be completed in 2025. While the specific improvements will be driven by the environmental process and cannot be pre-determined, our preliminary review concludes that it is very likely that upgrades to the surrounding state and local roads will be able to manage current [redacted] traffic, as well as the traffic generated by Project Copper. An updated alternative delivery schedule is attached.

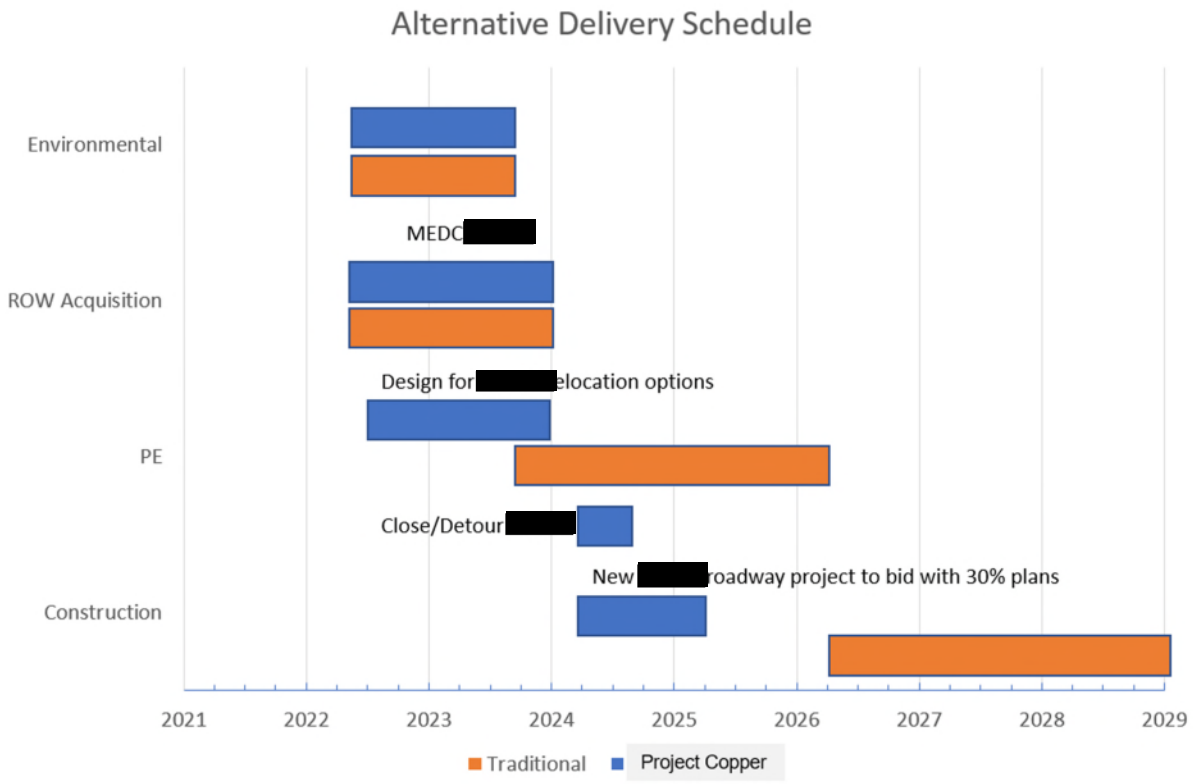
Please feel free to contact me with any additional questions or concerns that you may have. Lastly, MDOT and MEDC remain in constant contact, so feel free to reach out to Quentin Messer at 517-881-5861 or messerq@michigan.org, and he will ensure that we are coordinated.

Sincerely,

Paul C. Ajegba, P.E.
Director

Attachment

cc: Q. Messer


Alternative Delivery Schedule
Environmental
ROW Acquisition
PE
Construction
MEDC
Design for
location options
Close/Detour
New
roadway project to bid with 30% plans
2021
2022
2023
2024
2025
2026
2027
2028
2029
Traditional
Project Copper

PROJECT LABOR AGREEMENT
BETWEEN

The Michigan Building and Construction Trades Council
and

Barton Malow/Christman, a Joint Venture

For construction of the

[redacted]

ARTICLE 1 – INTENT AND PURPOSE

Section 1-1 This Project Labor Agreement ("Agreement") is entered into for work performed on the project as defined in Addendum A, (hereinafter) called the ("Project"), by and between Barton Malow/Christman, a Joint Venture (hereinafter) called the (JV) acting for and on behalf of [redacted] and the other contractors and subcontractors signatory hereto, their successors and assigns (hereinafter referred to both individually and collectively as the "Employer") and the Michigan Building and Construction Trades Council (hereinafter collectively referred to as the "Unions" or individually as the "Union). All contractors and subcontractors of any tier performing work on the Project must be parties to this Agreement. The JV is the construction manager for the Project and is responsible for the procurement and construction of the Project on behalf of the Owner.

Section 1-2 The cost effective, timely and successful completion of the Project is of vital importance. Therefore, it is essential that he construction work be done in an efficient and economical manner in order to secure competitive pricing, optimum productivity and to eliminate delays in the work. In recognition of the special needs of the Project and to maintain spirit of harmony, labor management peace, and stability during the term of this Project Labor Agreement, the parties agree to establish effective and binding methods for the settlement of all misunderstandings, disputes or grievances which may arise. To

accomplish the goals of quality, safety, cost effectiveness and the timeliness, requires that the participants exhibit a positive attitude intent on success. There must exist among all parties a willingness to cooperate fully in devoting themselves to goals of the Project.

This program has no room for adverse relationships, but only true spirit of cooperation and commitment. It is essential that the work required to construct the Project be accomplished in an effective and economical manner so as to minimize delays and provide the highest levels of quality and productivity. Therefore, the Unions and the Employers dedicate themselves to the goals that together in full cooperation, they will produce a facility of the highest quality, as economically as possible, in a safe environment, under favorable working conditions

ARTICLE II – SCOPE OF AGREEMENT

Section 2-1 This Agreement shall apply to all work performed by each signatory Employer and its subcontractors on the Project as defined in Addendum A – Scope of Work. It is agreed that the JV shall require all Contractors of whatever tier who have been awarded contracts for work covered by this Agreement, to accept and be bound by the terms and conditions of this Project Agreement by executing the Adoption Letter (Appendix A) prior to commencing work. The JV shall assure compliance with this Agreement by the Contractors. It is further agreed that, where there is a conflict, the terms and conditions of this Agreement shall supersede and override terms and conditions of any and all other national, area or local collective bargaining agreements, except for all work performed under the NTL Articles of Agreement, the National Stack/Chimney Agreement, the National Cooling Tower Agreement, all instrument calibration work and loop checking shall be performed under the terms of the UA/IBEW Joint National Agreement for Instrument and Control Systems Technicians, and the National Agreement of the International Union of Elevator Constructors, with the exception of Article IV,V, VI, and VII of this Project Agreement, which shall apply to such work. It is understood that this is a self- contained, stand alone, Agreement and that by virtue of having become bound to this Project Agreement, neither the JV nor the Contractors will be obligated to sign any other local, area, or national agreement. The provisions of applicable local collective bargaining agreements of all other unions signatory hereto shall apply to all work performed on the Project unless any provisions

therein conflict with the provisions of the Agreement, in which case, this Agreement shall apply. The provisions of the applicable local collective bargaining agreements shall not extend to any other project unless employers are signatory to the specific collective bargaining agreements prior to the execution of this agreement. The parties hereto acknowledge that this Agreement is between the JV and the Unions. The Owner is not and shall not be deemed to be a joint venturer or partner with the JV, Employer, or the Union.

Section 2-2 This agreement shall only be binding on the signatory parties hereto and shall not apply to the parents, affiliates, subsidiaries or other ventures of any such party, provided such entities shall be required to sign, accept and be bound by this agreement if they perform work on the project.

Section 2-3 The JV represents for itself and on behalf of the Owner that its scope of work is as represented in the attached Addendum A, and that to the best of its knowledge, information and belief, neither the Owner, nor any entity or person not signatory to this Agreement, nor any of their contractors or subcontractors, shall perform any construction, installation, alteration, painting, repair, renovation or rehabilitation work on the project site or within the perimeter of the Project during the term of this Agreement within the scope of work covered by this Agreement, except as otherwise specified in the Addendum A.

Section 2-4 In the interest of supporting a competitive bidding process, the Unions agree to support union subcontractor bidding by encouraging their qualified subcontractor members to bid the project.

Section 2-5 Given the spirit of cooperation and commitment provided in this Agreement, the Union shall not coerce nor in any way interfere with the Owner personnel, operations or facilities at the Project site subject to Section 2-3 and Addendum A. The Owners right to contract directly with other companies for work at the project site in conjunction with startups, operations and elements of the project excluded from the JV's Agreement with the Owner shall not be limited. The Union agrees not to picket, demonstrate, banner or hand bill the above referenced work.

Section 2-6 This agreement does not apply to:

1. Work performed by non-manual employees including but not limited to: superintendents, supervisors, architects, engineers, field engineers, surveyors, quality assurance and quality inspectors, office workers, messengers, persons making deliveries to and from the job site(except as otherwise provided in Article VI), guards, medical personnel, emergency vehicle operators and employees in similar classifications except where those classifications are specifically covered by the collective bargaining agreement and work excluded from the JV's scope of work and as specified in Addendum A.

2. Off-site work other than that work defined in the collective bargaining agreements of the United Association of Plumbers and Pipefitters and the Sheet Metal Workers International Association for fabrication.

Michigan ARTICLE III - MANAGEMENT RIGHTS

Section 3-1 The Unions understand the Employer is responsible to perform the work required by the Owner and its Owner Consultants. The Employer shall therefore have no restrictions, except these specifically provided for in this Agreement, in planning, directing and controlling the operation of all this work, in hiring and layoff of employees, in judging the qualifications of technicians, vendors and labor force, in transferring employees, in determining crew size and composition as well as the person who will act as foreman, in requiring all employees to observe the Employer's and Owner's rules and regulations not inconsistent with this Agreement, in requiring all employees to observe all safety regulations and in discharging employees.

Section 3-2 Subject to the Employer's right to call specific employees by name, the referral systems provided by the Local Unions Working Agreement will be in effect for this Agreement. The Employer will make a legitimate effort to utilize local labor wherever possible or practical. The Employer agrees to notify in writing or by telephone when workers are required.

ARTICLE IV - NO STRIKES

Section 4-1 The Unions agree that they will not permit or participate in any strikes, picketing, interference with delivery of materials to and from the Project, slowdowns, work stoppages or disruptive activity of any kind against any

Employers signatory hereto on the Project. There will be no lockout by the Employer.

Section 4-2 The Unions agree to use every effort to immediately prevent and/or terminate any work stoppages in violation of this Agreement, including, but not limited to, advising each and every employee who engages in such conduct that his/her actions are in violation of this Agreement and he/she is subject to discharge for engaging in such conduct.

ARTICLE V - PAYMENT OF FRINGES WAGES AND BENEFITS

Section 5-1 Wage rates and fringe benefits such as health, welfare, pension, training, etc. to be paid on the Project shall be in accordance with the applicable local collective bargaining agreements. In the event new wage agreements are not successfully negotiated prior to the expiration of this Agreement, the Employer agrees to be bound by subsequently negotiated local agreements, and pay all negotiated increase in wages and fringes retroactive to the effective date of the local agreement as specified in Article VI, Section 6-1. The Unions agree that there will be no work stoppage on the Project as result of these negotiations, and there shall be no lockout by the Employer.

Section 5-2 Each signatory Employer agrees to accept as its representatives in the administration of the trust funds, the employer trustees servicing such funds. The Employer signing this Agreement shall be obligated and be bound by the trust documents to make trust fund contributions in accordance with the applicable local agreements, but unless otherwise bound to the local agreements and/or trust documents, shall not be required to sign trust fund participation agreements unless legally required per the local trust documents, and any such signing of trust documents will apply to the Project only.

Section 5-3 Any Union having a claim against an Employer or subcontractor for unpaid wages and/or fringe benefits for work performed on the Project shall give written notice of such claim to such Employer or subcontractor (with a copy of notice to the JV) within ten (10) business days after such claim has become known. Upon receipt of such written notice, the JV shall withhold an amount equal to the claim from the next disbursement payable to the Employer/subcontractor, pending resolution of the dispute satisfactory to the JV and the Board of Trustees of the respective fund. In the event of any such

dispute, the Union agrees to use its best efforts to pursue any legal remedies available including litigation by the Fund Trustees. It is understood that the intent of this Section is to accomplish prompt and effective resolution of any dispute between the Union and any Employer or subcontractor over the payment of wages and fringes.

Section 5-4 The Union must be notified by the JV at least one week in advance if a 4-10's work week is to be implemented and the 4-10's must run for 4 consecutive days between Sunday midnight and through Friday midnight. Anything over the 10 hours a day is to be paid at time and one half rate. It is understood that 40 hours shall constitute a regular work week, (5-8's) Sunday midnight through Friday midnight. At the Employer's option the regular work week may be changed to 4-10's with an inclement weather, or conditions beyond the control of the Employer, make-up day on Friday or as provided for in local collective bargaining agreement, to be paid at the straight time rate, understanding anything over 8 hours will be paid at time and on half rate. Employees shall not be discriminated against whatsoever for not working a make-up day prior to commitment. Make-up days must be scheduled for a minimum of eight (8) hours, weather permitting and shall be on a voluntary basis only. In addition to above, second shift work, the Union will be notified at least one week in advance when second shift work is being scheduled.

Section 5-5 Holidays - For the purpose of uniformity, the following holidays shall be observed and, if worked, shall be paid at the rate applicable in the appropriate local agreement not to exceed double time; New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day. If any of these listed holidays falls on Sunday, the following Monday shall be observed as the holiday. If any of the listed holidays falls on Saturday, the preceding Friday shall be observed as the holiday.

ARTICLE VI - PROJECT AGREEMENT

Section 6-1 The parties understand and agree that each contractor and subcontractor at all tiers of the Project shall prior to beginning work on the Project, become signatory to this Project Labor Agreement, and abide by the terms of the respective current collective bargaining agreements of the appropriate local union affiliates of the Michigan Building and Construction

Trades Council, and any other Unions signatory hereto, and shall in consideration for the Union's agreement not to strike, abide by the terms of the appropriate local collective bargaining agreements, for this Project only and to any subsequent local collective bargaining agreements negotiated during the term of the Project, and comply with the terms of the said agreements for this Project retroactive to their respective effective dates. In order to confirm the agreement of each contractor or subcontractor to be bound by the provisions of this Agreement, the contractor or subcontractor will be required to sign the Adoption Letter included as an Appendix A to this Agreement prior to commencing work and as a condition of submitting its bid. Subject to Section 5-2, the Employer shall not be required to sign any other agreement not related to this Project during the term of this Agreement.

ARTICLE VII – BUILDING MATERIAL DELIVERY

Section 7-1 Initial deliveries of all equipment, supplies, materials, and tools can be off-loaded by a non-union delivery person/driver, by hand or by a mechanism, lift or crane mounted on the delivery truck.

Section 7-2 The furnishing of materials, supplies and/or equipment and delivery thereof, shall in no way be considered subcontracting.

ARTICLE VIII LABOR MANAGEMENT COOPERATION COMMITTEE

Section 8-1 The parties to this Agreement hereby reaffirm the necessity for joint cooperation and participation by Labor and Management. Therefore, to insure this end, it is hereby agreed that a "Labor Management Cooperation Committee" will be established for the Project and will be composed of representatives from both Labor and Management. One of the Labor representatives shall be the Labor Co-Chairman and likewise one the Management's representatives the Management Co-Chair.

Section 8-2 The Labor Management Cooperation Committee shall meet quarterly or an "as necessary" basis and shall discuss at such meetings, reports concerning any violation, dispute, questions or interpretations of the application or practices arising out of this document as well as safety, working conditions,

absenteeism, labor turnover, availability of qualified journey workers, need for training and any other matters affecting productivity and efficiency.

Section 8-3 The Labor Management Cooperation Committee shall not be a substitute for grievance and arbitration procedure in Article IX and shall not have the authority to render a decision in a jurisdictional dispute.

Section 8-4 The parties hereto agree to meet within forty-eight (48) hours to address any issue of importance identified by the Employer or the Union.

ARTICLE IX GRIEVANCE PROCEDURE AND ARBITRATION

Section 9-1 Any Dispute or grievance between the parties working under the Agreement (except Jurisdictional disputes} will be handled in the following procedure, without work stoppage, slowdowns etc.

Any dispute or grievance arising out of the interpretation of this Agreement shall be handled under the following.

1. The Business Representative of the Local Union involved will first attempt to settle the matter with the Superintendent of the Employer involved and failing to reach a settlement, will then attempt to settle the matter by oral discussion with the JV's Project Director/Executive. If the dispute or grievance directly involves the Contractor, the Business Representative shall first attempt to settle the matter by oral discussions with the JV's Project Director/Executive.

2. If the matter is not resolved in Five (5) working days from Step 1, the Business Representative shall refer the matter to his International Union and the International Representative assigned by the International Union shall contact the Employer's authorized Labor representative and the two shall attempt to settle the matter.

3. If the issue is not resolved within twenty (20) working days from Step. 2 the Employer and the Union shall request a list of arbitrators from the Federal Mediation and Conciliation Service. The Employer involved shall arrange with the Union's involved to alternately strike names from the list until a single name remains, who shall be the arbitrator designated to hear the dispute. The arbitrator selected by the parties shall then hear the grievance at the earliest

mutually convenient time. Each party shall have the right to present to the Arbitrator whatever evidence it deems desirable. The Arbitrators decision shall be binding on both parties, provided however, that the Arbitrator shall not have the authority to alter or amend the provisions of this Agreement in any way. In the event the services of an impartial Arbitrator are required, his fees and expenses shall be paid one half by the Union and one half by the Employer. Any party shall have the right to have a transcript of the proceedings at its own expense. The time constraints provided in this Article IX Section 9-1 may be extended or waived by mutual consent of the parties.

Section 9-2 The grievance and arbitration procedure of the applicable local agreement shall apply to all other disputes between the parties, except for jurisdictional disputes.

Section 9-3 Jurisdictional disputes shall be handled as specified in Article X.

ARTICLE X
WORK ASSIGNMENTS AND JURISDICTIONAL DISPUTE RESOLUTION

Section 10-1
The assignment of work will be solely the responsibility of the Contractor performing the work involved: and such work assignments will be in accordance with the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (the "Plan") or any successor plan.

Section 10-2 All jurisdictional disputes between or among Building and Construction Trades Unions and employees, parties to this Agreement, shall be settled and adjusted according to the present Plan established by the Building and Construction Trades Department, The National Dispute Resolution procedure or any other plan or method of procedure that may be adopted in the future by the Building and Construction Trades Department. Decisions rendered shall be final, binding and conclusive on the JV, Subcontractor and Union parties to this agreement.

Section 10-3 All jurisdictional disputes shall be resolved without the occurrence of any strikes, work stoppage, or slow-down of any nature and the JV's

assignment shall be adhered to until the dispute is resolved. Individuals violating this section shall be subject to immediate discharge.

ARTICLE XI - SUBCONTRACTING

Section 11-1 The JV and the Employer's agree not to subcontract out any on-site work for this
Project within the jurisdiction of the Union's which are signatory to this Agreement to any
contractor or subcontractor who fails to contractually agree to be bound by this Agreement. In
order to confirm the agreement of each contractor or subcontractor to be bound by the provisions of the Agreement, the contractor or subcontractor will be required to sign the Adoption Letter included as an Appendix to this Agreement. A copy of the Adoption Letter will be maintained by the JV. The JV is to provide notification to the Building Trades, within a reasonable length of time of the Contractor's or subcontractor's signature of the Adoption Letter.

ARTICLE XII - WORK RULES

Section 12-1 The JV shall have the right to establish reasonable safety and project work rules. _Any violation of the Project Work Rules (Appendix C) shall be grounds for disciplinary action up to and including termination.

ARTICLE XIII - SAFETY

Section 13-1 The JV, and Subcontractors at all lower tiers and their employees shall comply with all applicable Federal, and to the extent applicable State and Local laws, ordinances, and regulations relating to job safety, health and safe work practices, as well as those specific project safety plans/rules required by the JV.

Section 13-2 Drug and alcohol testing will be required and conducted in accordance with the M.U.S.T. Program, or its successor program. All onsite workers must be enrolled and current with the M.U.S.T. program with in 30 days of starting work on the project site, and must remain current throughout their

time on the project site. In addition, all employees of the Contractors may be required to submit to "For Cause" testing. All testing shall be conducted in accordance with Appendix D, which is hereby incorporated into the Agreement by reference.

ARTICLE XIV – LEGAL INTENT

Section 14-1 It is not intended that any condition of the agreement shall violate any applicable federal or state law, however, if any condition is held to violate any law, that portion of the Agreement shall be considered null and void, but the remainder of the agreement shall continue in full force and effect and the parties shall there upon negotiate substitute provisions which are in conformity with the applicable law.

Article XV – HELMETS TO HARDHATS

Section 15-1 The Employers and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Employers and Unions agree to utilize the services of the Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "Helmets to Hardhats" program to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

Section 15-2 The Unions and Employers agree to coordinate with the Center to create and maintain and integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by Law, the Unions will give credit to such veterans for bona fide, provable past experience.

ARTICLE XVI – DURATION

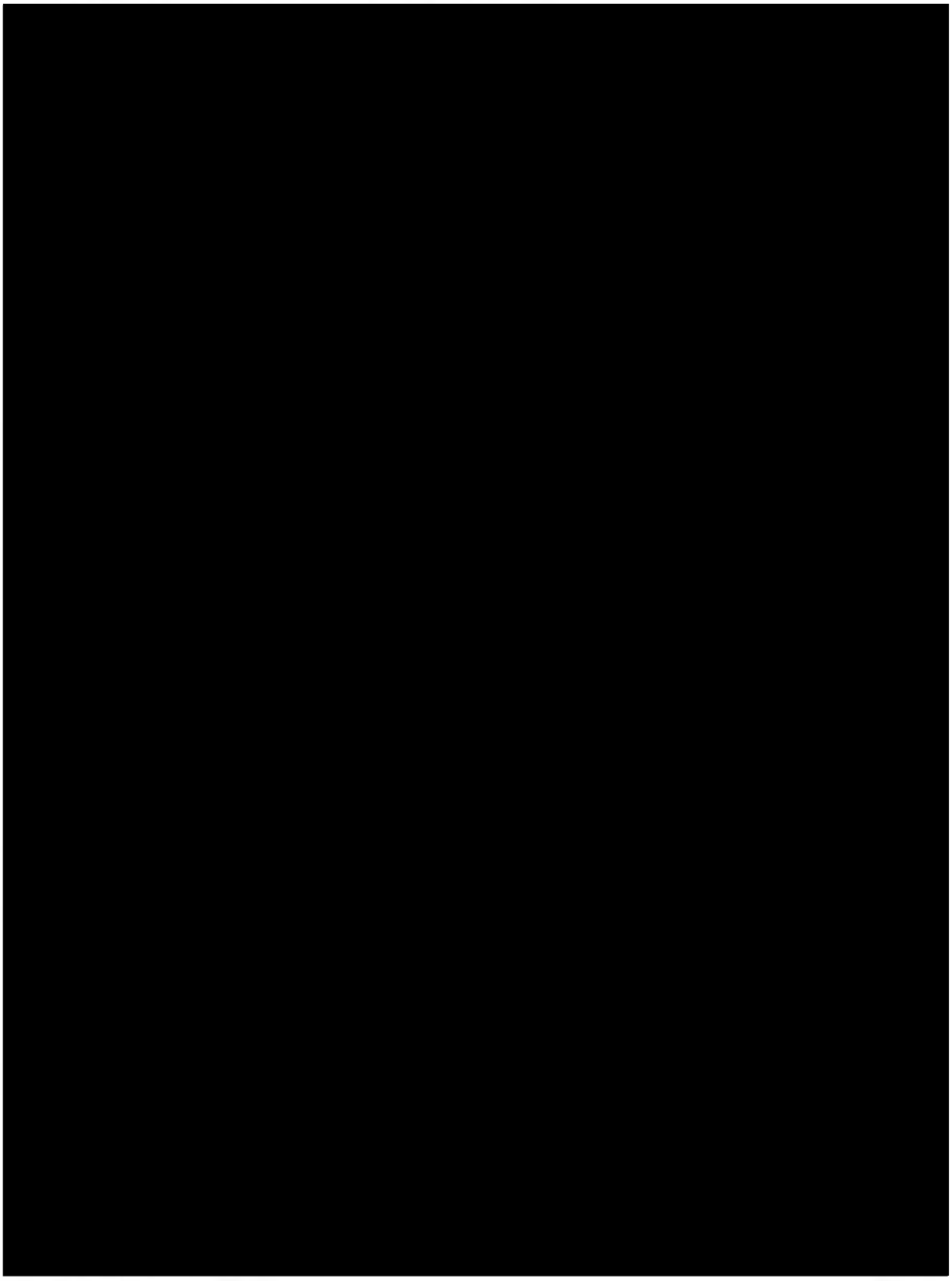
Section 16-1 This agreement established for the [redacted] only shall be effective from the date of the signing and shall continue in full force and effect until the completion of the Project by the JV.

Signed this day 12 day DECEMBER 2018

_____

_____

[redacted]



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Project Labor Agreement [redacted]

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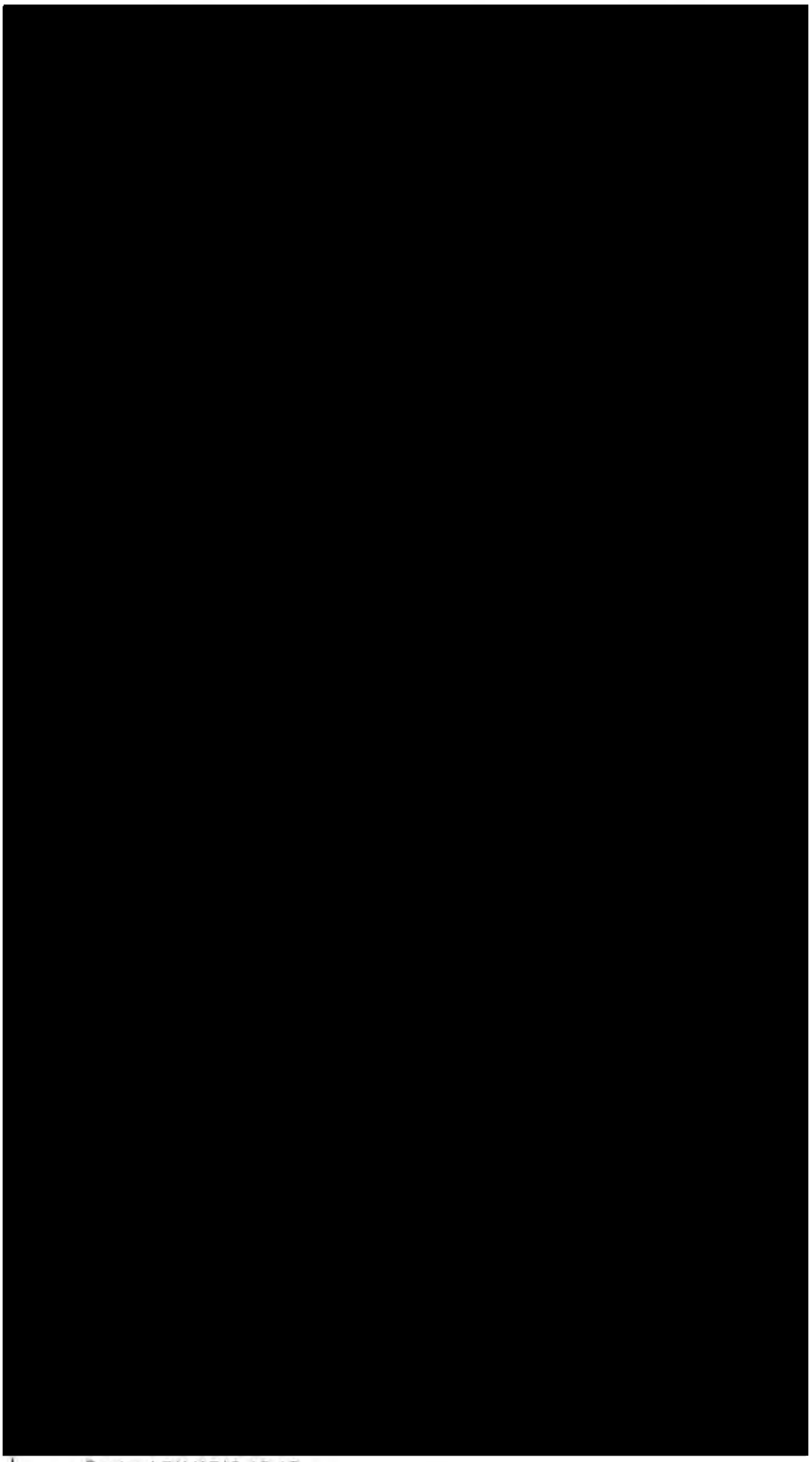

[redacted]

APPENDIX A

ADOPTION LETTER

The undersigned contractor hereby agrees this day of_____, _____ 2018 to fully comply with and be bound by all of the terms and conditions of the Project Labor Agreement previously entered into between Barton Malow/Christman, A Joint Venture and the Signatory Unions. This Assent to the Project Labor Agreement will remain in effect for the duration of this Project, after which this agreement will automatically terminate. In the event the undersigned contractor is not awarded a contract on the Project, this Assent will be null and void.

_____

Name of Contractor

By: _____

Its: _____

Date: _____

M.E.S.C. No.: _____

Workers Compensation Policy No.: _____

Workers Compensation Carrier : _____

ADDENDUM A

SCOPE OF WORK

The [redacted] scope of work associated within this PLA includes only that work performed by Barton Malow / Christman under contract with [redacted] as the Design-Builder to construct a new replacement hospital, parking lots and associated site work for the property owned by [redacted] may commission other buildings to be constructed on the Project site. Such projects may not be under the contractual control of Barton Malow / Christman and are therefore excluded from this PLA. They may include: [redacted] and may be concurrently developed with the Project. Any other such projects concurrently executed on the project site by [redacted] or other third parties are excluded from the JV's Scope of Work and this Agreement.

The following items are specifically excluded from the Scope of Work of this Agreement.

A. All employees of the Owner not performing manual labor.

B. Any work performed on or near, or leading to or into, the Project Site by State, County, City or other Governmental bodies or their Contractors, or by public utilities or their Contractors, and/or by the Owner, or its Contractors for work which is not the contractual responsibility of the JV.

C. Any work performed prior to the JV's mobilization at the project site, which was contracted direct with the Owner. (Hazardous Material Abatement and Site Fencing, landscaping, Structures & Utilities).

D. Off-site maintenance on leased equipment and on-site supervision of such work.

E. Off-site warranty work and functions, and on-site supervision of such work.

F. Exploratory geophysical testing and boring on-land, and on site laser building surveys, except where expressly covered by a current Local Union.

G. Laboratory or specialty testing or inspection not ordinarily done by the crafts.

H. All work performed by technicians and/or skilled craftsmen at the discretion of and/or contracted by the Owner. Such work shall be limited to 1) the installation of furnishings, fixtures, and equipment, 2) the installation of artwork, signage, graphics and other specialty items; For the purpose of this Item H, the terms furnishings, fixtures and equipment are Owner supplied items which are moveable and not permanently built into the project.

I. Removal of scrap and debris from on site collection points by any means.

J. Installation of any technical systems and/or equipment such as audio-visual, telecommunications, security, and computer hardware systems as are normally provided by the Owner.

K. If the JV is not able to obtain responsible bids from a minimum of 4 qualified bidders, Landscape and irrigation work will be excluded from this agreement.

L. Preventative Maintenance or Service of completed work, Including specialty technicians with startup, commissioning on behalf of vendors supplying specialty equipment

M. Janitorial Services

N. Owner Equipment

a. The Owner has or will purchase certain equipment for the Project, medical equipment, pneumatic tube, interior and exterior signage, technology, communication systems, security systems, landscaping and irrigation systems, furnishings, office equipment and products (foreign and domestic) ("Owner's Equipment"), some of which may have been completely assembled, test run, and then dismantled for shipment by the vendors. It is understood between the parties that the Owner's Equipment requires the field installation of certain specialized technical components by persons trained by the manufacturer on assembly of this equipment or experienced in similar installations. The Owner reserves the right to utilize firms and personnel to perform certain work on or with the Owner's Equipment, including without limitation all work to be performed by vendors the Owner has or will engage for the Owner's Equipment, specialized technical installations and related ancillary work to complete the installation of the Owner's Equipment, check/test/start and commissioning the Owner's Equipment into service, and other work with respect to the Owner's Equipment.

b. Notwithstanding anything to the contrary contained herein, the Owner reserves the right to use its own in-house trades people to engage in the installation, testing, and commissioning of the Owner's Equipment.

c. Due to the unique nature of the technology the Owner is purchasing, some of the work with respect to the Owner's Equipment will be performed concurrently with this Agreement, and such work is expressively excluded from this Agreement.

O. The Owner reserves the right to contract directly or self-perform any or all work associated with the following:

a. Telecommunications and tele/data equipment installations and connections
b. WIFI
c. IT

d. AV equipment installation and connection, including equipment supports
e. Custodial work
f. Third Party testing and commissioning
g. Design work and professional services
h. Hazardous materials abatement
i. Medical equipment installations and startup testing
j. Furniture, including delivery, handling and setup of systems
k. Building management system
l. Telemetry systems
m. Nurse call system
n. Donor recognition using brick and/or tiles

P. Concrete redimix, sand gravel and asphalt suppliers and delivery of their materials to project site.

Q. Precast concrete deliveries

ADDENDUM B

PROVISION FOR ELEVATOR OPERATORS

This agreement shall include the following provision. Prior to final inspection and turnover to the owner, the operation, maintenance and repair of all elevators and material hoists for the purpose of hauling personnel and/or material, shall be the jurisdiction of the [redacted] Final inspection of the permanent building, elevators and their acceptance by the owner will terminate this addendum.

APPENDIX C
BARTON MALOW/CHRISTMAN PROJECT WORK RULES

Violation of Barton Malow/Christman Project Work Rules is considered to be extremely serious and detriment to the job as a whole as well as to the safety and welfare of all employees. Violation of the jobsite work rules and/or JV policies will be cause for disciplinary action up to and including termination. The following activities are prohibited:

1. Possession, sale, and/or use of drugs, narcotics and alcoholic beverages on the Project Site

2. Reporting to work under the influence of drugs and/or alcohol.

3. Possession, sales and/or use of fireworks, firearms, or weapons of any kind on the Project Site

4. Removal of Company property from the premises without written authorization of the Project Superintendent.

5. Misuse, damage, or destruction of Company property or the property of a co-workers.

6. Fighting on the Project Site.

7. Participating in games, scuffling, horseplay, unnecessary shouting or creating confusion on the premises.

8. Gambling, engaging in a lottery, selling lottery tickets or chances

9. Falsifying personnel records, production figures, time sheets, security logs or any job or Company record or report.

10. Placing or removing signs, posters, politically advertising or other notices on bulletin boards of Company property at any time.

11. Defacing or placing pornographic or otherwise inappropriate pictures on any property, equipment, tools, etc. on Company Property.

12. Sleeping on the jobsite at any time, or hiding from a Superintendent or Foreman.

13. Restricting production of work, or interfering with others in the performance of their jobs, engaging or participating in any interruption of work or production.

14. Intimidating, threatening, coercing or interfering with the activities of the Owner, other Contractors, or employees of other Contractors.

15. Selling merchandise of any kind to other Company employees, employees of the Owner, or employees of other Contractors during working hours or on Company property.

16. Soliciting contributions of any nature for any purpose on Company property without written permission of the Project Superintendent.

17. Violation of any safety rules or practices, or engaging in any conduct that tends to create a safety hazard, fire hazard or unsanitary condition on the project property.

18. The project is a non-smoking site, smoking is prohibited on the project site.

19. Changing clothes, eating lunches, parking vehicles or taking breaks in areas that the Company, the Owner or other Contractors have declared off limits for such purposes.

20. Leaving assigned work position or area, or leaving the jobsite after the regular starting time and before the regular quitting time, without reporting to the responsible Superintendent, except for the regularly scheduled lunch period.

21. Failure to report off from work, absences from work, tardiness.

22. Failure to wear proper employee identification or comply with Owner's Project regulations.

23. Neglect of job duties and responsibilities, or failure or refusal to perform work assigned by jobsite supervision.

24. Radios, headphones, etc. are prohibited on the Project, except the type used for communication between employees of a Contractor.

APPENDIX D
DRUG AND ALCOHOL TESTING PROGRAM

This program applies to all employees and potential employees of Barton Malow/Christman, a Joint Venture and all subcontractors at all tiers, including non-bargaining and bargaining unit employees.

Drug and Alcohol Policy:

The JV has a vital interest in maintaining safe, healthful, and efficient working conditions for its employees. Being under the influence of drugs or alcohol on the job may pose serious safety and health risks not only to the user but to all those who work with the user.

The JV prohibits the use, sale, solicitation, possession, or transfer of illegal drugs or other controlled substances, in any amount on any JV premises, work sites (including parking lots), vehicles, or customers' work places. Further, The JV strictly prohibits any employee from reporting to or being at work under the influence of alcohol or drugs, unless medically prescribed, wherever the JV 's work is being performed, including off-premises property or customers' work places. This prohibition includes the operation of any vehicles, machinery, or equipment at any time owned or assigned by either member of the JV. The

b. A pattern of abnormal conduct or erratic behavior. Examples include temper tantrums, excessive drowsiness, slurred and/or incoherent speech, smell of alcohol, etc.

c. Increased inattention to duties, repeated failure to follow instruction or supervision, and/or reduced concern for the safety of others as noted over a period of time.

d. Evidence that the employee has been arrested or convicted for a drug-or alcohol related offense.

e. An employee sustains a personal injury or causes another employee to sustain a personal injury while on the work site or while performing work related to the Project.

f. An employee causes a work-related accident or was operating or helping to operate machinery, equipment, or vehicles involved in a work-related accident.

Employees requested to take a reasonable suspicion drug and alcohol test will be transported by the JV to a designated testing facility to take the test as soon as possible. The involved employee will not be allowed on any JV or JV member work site until the test results are reported back as negative.

2) Treatment Program Testing
Without prior notice, any employee working on the Project whom the JV previously has referred for chemical dependency treatment or evaluation, or who is participating in a chemical dependency treatment program under an employee benefit plan, may be required by the JV to take a drug and alcohol test during the evaluation or treatment period and for a period of up to two years following

completion of any prescribed chemical dependency treatment program.

3. Refusal to Submit to Testing

Any employee may refuse to submit to a drug and alcohol test that JV has requested under this Policy, but, in the event of such refusal, the employee will be subject to disciplinary action, up to and including termination.

4. Tests and Consequences of Test Results

A. Alcohol and Drug Tests

Testing will consist of an initial screening test for alcohol and for those drugs defined as controlled substances by Michigan law. If the initial screening test shows a positive result, the same sample will be given a confirmatory test.

Within three (3) working days following the JV's receipt of the test result report, the JV will inform the employee or applicant of the test result. The employee will have the right to request and receive from the JV a copy of the report.

An employee may, at his or her own expense, obtain a confirmatory retest, by a qualified laboratory of the employee's or job applicant's choice, of the original sample used in producing any positive confirmatory test result, provided that the employee notifies the JV in writing of his or her intention to do so within five (5) working days after his or her receipt of notice of the positive confirmatory test result report. An employee, in addition to, or instead of, obtaining the confirmatory retest, may submit within three (3) working days of his or her receipt of notice of the positive confirmatory test result report, information which he or she believes explains that result.

B. Consequences of a Positive Confirmatory Test

When a confirmatory test is positive and where the employee either does not obtain a confirmatory retest or the confirmatory retest is positive:

1) The employee, where the confirmatory test result is the first positive test result for such employee on a test requested by the JV, will be given an opportunity to participate in, at the employee's expense (or, if covered, pursuant to any applicable employee benefit plan), a drug or alcohol counseling or rehabilitation program, whichever is more appropriate, as determined by the JV after consultation with a certified chemical use counselor or a physician trained in the diagnosis and treatment of chemical dependency. If the employee either refuses to participate in the counseling or rehabilitation program or fails to successfully complete the program (as evidenced by withdrawal from the program before its completion or by a positive test result after completion of the program), the JVor may discipline the employee, up to and including termination.

2) An employee who has had a prior positive confirmatory test or, if requested, retest on a test requested by the JV will be subject to discipline, up to and including termination.

3) The JV may temporarily suspend a tested employee, or transfer that employee to another position at the same rate of pay, pending the outcome of a confirmatory test, or a confirmatory retest elected by the employee, where the JV believes that such suspension or transfer is reasonably necessary to protect the health or safety of the employee, other employees, or the public. An employee who has been suspended without pay solely on the basis of suspected drug or alcohol use where the JV has chosen to test the employee will be reinstated with back pay if the outcome of the confirmatory test or any requested confirmatory retest is negative.

C. Contractual Disclaimer

None of the provisions of this Policy is to be regarded as a contract between the JV and any of the JV's and JV member's employees. Nothing in this Policy requires the JV to request or provide drug and alcohol testing to an employee working on the Project. The JV is free in its discretion to choose not to test any employee. The JV shall have complete and final discretion concerning all interpretations of the Policy and any disciplinary action including termination which the JV chooses to impose on its employees or the employees of other contractors on the Project. Nothing in this Policy constitutes a modification or limitation on the JV's right to terminate the employment of any employee for any reason.

About EPCOR

Headquartered in Phoenix, Arizona, EPCOR USA Inc. (EPCOR) is a utility company that builds, owns and operates water and wastewater treatment facilities, water transmission pipelines, and natural gas distribution systems. EPCOR first entered the US market in 2011 with the acquisition of Chaparral City Water Company in Arizona. Since that time, EPCOR has expanded its business in Arizona and into New Mexico and Texas through organic growth and additional acquisitions (**Figure 1**).

EPCOR's corporate parent is EPCOR Utilities Inc. (EUI) with over 3,500 employees. Headquartered in Edmonton, Alberta, Canada, EUI develops, owns and operates water and energy infrastructure in the US and Canada. Having begun its history as a municipal utility of the City of Edmonton, today EUI is a private corporation that provides utility services to over two million people. Although the City of Edmonton remains EUI's sole shareholder, the company is governed by an independent and experienced board of directors who, along with the EUI management team, provide clear strategic direction for the company.

FIGURE 1: CURRENT EPCOR USA OPERATIONS

Water and Wastewater Experience

EPCOR, through EUI, is a proven utility operator with over 130 years of experience developing, financing, and operating advanced wastewater treatment facilities. EPCOR is the largest private water provider in the Southwestern United States, owning and operating more than 200 groundwater production wells, 64 water treatment plants, 63 pump stations, and approximately 2,860 miles of water distribution pipeline. In all, EPCOR delivers reliable water and wastewater service to a population of more than 780,000 in the US, producing nearly 160 MGD.

In addition to its vast municipal owner-operator experience, EPCOR has an array of industrial clients with high water purity and reliability expectations. EPCOR is currently designing water treatment and water reclamation facilities to support the new semiconductor fab Samsung is developing in Taylor, Texas.

EPCOR is also currently constructing an ultra-pure demineralized water treatment facility for Ontario Power Generation at its Darlington nuclear facility. EPCOR will finance and operate this facility for 30 years. This facility is featured later in this document.

EPCOR exclusively provides water to many large food and beverage manufacturing facilities. In Clovis, New Mexico, EPCOR provides water to the Southwest Cheese manufacturing plant, the largest cheese plant in the United States. Since the original plant commissioning 15 years ago, EPCOR has continuously provided raw process water to the plant without a single unplanned outage. Additionally, in metropolitan Phoenix, Arizona, EPCOR is currently designing a 1.25 MGD expansion of its Luke 303 Water Treatment and Reclamation Plant to treat industrial effluent from new production facilities being developed by Red Bull and Mark Anthony Brewing.

EPCOR will leverage this experience, knowledge of advanced water and wastewater treatment facilities, and relationships with suppliers to ensure the optimal value for a project is achieved. EPCOR will propose innovative technologies through the progressive delivery process as we are tied to no particular technology, and our only focus is the best solution for the industrial client or community served.

Alternate Delivery Experience

EPCOR is a proven leader in project delivery and has led, executed, and operated nearly all the water and wastewater DBFOM projects in Canada over the past 25 years, beginning with the Cochrane Water Treatment Plant in 1997 to the Darlington Demineralized Water Treatment Plant currently under construction. EPCOR is also the 30 year operator and minority owner of the Vista Ridge Pipeline P3 in San Antonio, Texas. EPCOR brings unique, end-to-end, single-point-of-contact perspective as both the Project Lead and Operator.

EPCOR has the most extensive water and alternate wastewater delivery and P3 operating experience in North America and is the only fully integrated Investor-Operator. EPCOR has delivered key North American water and wastewater projects using a design-build delivery model, many with financing and operations elements. **Figure 2** below provides an overview of EPCOR's history in delivering design-build projects.

FIGURE 2: EPCOR'S PROJECT DELIVERY CREDENTIALS

Each project was on time and budget, saving the public owner significant costs compared to their original estimates. In some contracts, EPCOR was required to provide a fixed price for operations and asset management over the term of the agreement, which in most cases is a 20 or 30-year term. The associated risk with alternative delivery models is one that EPCOR understands well and is prepared to accept as a long-term operations provider. A selected list of EPCOR's relevant projects and facilities is presented in **Table 1** with select project profiles featured on the subsequent pages. **Table 2** presents P3/DBFOM project timelines.

Table 1: Experience Summary

Project Details						Companies Involved		Project Scope		
Project Title	Location	Capital Cost	Delivery Method	Capacity (MGD)	Treatment Technology	EPCOR	Stantec	Advanced Water Treatment	P3 / DBFOM / DBOM / DB	Long-Term O&M
Regina Wastewater Treatment Plant Upgrades	Regina, SK	$117M	P3/DBFOM	24	BNR	✓	X		✓	✓
Evan Thomas Water & Wastewater Treatment Facilities	Kananaskis, AB	$24M	P3/DBFOM	1	BNR	✓	X	✓	✓	✓
Britannia Mine Water Treatment Facility	Britannia, BC	$19M	P3/DBFOM	7	Metals precipitation	✓	X		✓	✓
Suncor Voyageur Water & Wastewater Treatment Plants	Fort McMurray, AB	$76M	DBFOM	Multiple	Multiple	✓	X	✓	✓	
Taber Wastewater Treatment Plant	Taber, AB	$13M	DBFOM	4	BNR	✓	X		✓	
Darlington Demineralized WTP	Oshawa, ON	$38M	DBFOM	2.7	UF, RO, GAC, CEDI,	✓		✓	✓	✓
130 Pipeline	Austin, TX	$64M	Own-Operate	N/A	N/A	✓				✓
Vista Ridge	San Antonio, TX	$930M	Operate	N/A	N/A	✓			✓	✓
Canmore W/WWTP	Canmore, AB	N/A	O&M	WTP: 2 WWTP: 9	BAF	✓				✓
EL-Smith Water Treatment Plant	Edmonton, AB	N/A	Own-Operate	106	Coagulation, flocculation, and filtration	✓	X			✓
Rossdale Water Treatment Plant	Edmonton, AB	N/A	Own-Operate	75	Coagulation, flocculation, and filtration	✓	X			✓
Gold Bar Wastewater treatment Plant	Edmonton, AB	N/A	Own-Operate	82	Membrane, UV, UF	✓	X	✓		✓

Project Details						Companies Involved		Project Scope		
Project Title	Location	Capital Cost	Delivery Method	Capacity (MGD)	Treatment Technology	EPCOR	Stantec	Advanced Water Treatment	P3 / DBFOM / DBOM / DB	Long-Term O&M
Anthem Water Campus	Anthem, AZ	N/A	Own-Operate	WTP: 7 WRF: 4.5	Membrane, UV, 100% reuse	✓				✓
Verrado Water Reclamation Facility	Verrado, AZ	N/A	Own-Operate	1	Bioreactors, clarification, disc filters, 100% reuse	✓				✓
Northwest Valley Water Reclamation Facility	Sun City West, AZ	N/A	Own-Operate	5	Bioreactors, clarification, 100% recharge	✓				✓
White Tanks Water Treatment Plant	Surprise, AZ	N/A	Own-Operate	33	CoMag ballasted water, UV	✓		✓		✓

Table 2: P3/DBFOM Timelines

Project Title	Capacity (MGD)	Design/Permitting	Construction	Total Duration
Britannia Mine Water Treatment Facility	7	4 Months	8 Months	12 Months
Evan Thomas Water & Wastewater Treatment Facilities	1			21 Months
Regina Wastewater Treatment Plant Upgrades	24	12 Months	30 Months	42 Months
Darlington Demineralized WTP	2.7	17 Months	20 Months (estimated)	37 Months

Anthem Water Campus

2014: Director's Award of Recognition from the Safe Drinking Water Partnership

2015: Best Large Treatment Plant of the Year from the AZ Water Association

The objective of the Anthem Water Campus is an integrated approach to the management of water for a remotely situated planned community with limited water resources. The WTP (7 MGD) treats Central Arizona Project surface water from the Colorado River. A 7 MGD raw water pumping facility pumps CAP water approximately 9 miles to the treatment facility, where it undergoes membrane filtration, UV primary disinfection, and sodium hypochlorite secondary disinfection to support a free chlorine residual in the distribution station. The membrane filter backwash stream is sent to the WRF (4.5 MGD) for further processing.

The WRF consists of inlet pumping and screening (with drum screens), flow equalization basins, bioreactors with anoxic and aerobic zones (achieving nitrification/denitrification), submerged membrane filtration and a disinfection contact basin. Solids processing is achieved with a belt press. Groundwater wells are permitted as recovery wells in a regulatory context that does not allow over-drafting the aquifer and promotes the use of renewable surface water from the Central Arizona Project (CAP) when available. Local wells supplement CAP supply thus providing indirect potable reuse to Anthem.

Project Highlights

- Indirect potable reuse facility
- Use of membrane filtration technology
- Long-term O&M (owned facility)

Britannia Mine Water Treatment Plant

2007: Premier's Award in Innovation and Excellence – Partnership category

2006: CCPPP National Awards for Innovation and Excellence – Gold Infrastructure category

Feature Video

Just north of Vancouver, British Columbia is the site of what was the largest copper mine within the Commonwealth countries. The Britannia mine had been closed down for years with the acid rock drainage entering Howe Sound, killing all plant life around the outfall and driving marine life away. In 2005, EPCOR signed a DBFOM agreement with the BC Government to clean up contaminated acid rock drainage that came from the mine. A 7 MGD high density sludge water treatment plant was constructed to treat the acid rock drainage from the abandoned mine with the objective of removing 1.3 million pounds of contaminants annually, including zinc, copper, aluminum, cadmium, iron and manganese. It also neutralizes the acidity of the mine water. The project was completed in eight months. EPCOR has a 20-year guaranteed performance contract to operate and maintain the mine and water treatment facilities.

Project Highlights

- Stantec-designed facility
- DBFOM P3 water sector project
- Unique water treatment challenges
- Long-term O&M contract (20 years)

As a value add to the client, EPCOR added a turbine to the project to generate most of the electricity needed to run the plant since the water was being collected from the mountain above the plant.

Evan Thomas Water and Wastewater Treatment Plant

Located in Kananaskis, Alberta, this project was developed with critical construction timelines in mind to accommodate various stakeholders. EPCOR used a team strategy in partnership with Alberta Infrastructure and shared a vision of delivering a long-term, well-built, well-operated, reliable system that demonstrates environmental leadership for the community and the province and was delivered in a cost effective way. The distribution had 20-plus tie-ins impacting six different stakeholders in the area who relied heavily on tourism, so construction was constrained to accommodate the area stakeholders. Continuous and proactive communication and coordination was critical to ensure minimal community impact and achieve all project milestones and objectives.

The project scope included the design and build of the Wastewater Treatment Plant, Potable Water Treatment Plant, and distribution pipeline complete with storage reservoirs. The WWTP used a modified Biological Nutrient Removal process combined with membrane filtering to meet the stringent Provincial Park effluent criteria; construction required the old facility to be completely retrofitted and integrated into the new facility, while maintaining operation of the existing WWTP. The PWTP was a new build with critical tie-ins to the old distribution system, and included construction of two new underground 740,000 gallon water reservoirs. The reservoirs each required deep excavation in challenging mountain side conditions and involved expansions to existing facilities that remained in service during construction. Connecting the end user to the water supply was 8 miles of distribution pipeline weaved through various stakeholder properties and across five different streams/rivers. This project increased the plant's throughput as well as improved the wastewater treatment process in order to comply with strict regulatory requirements.

Project Highlights

- Stantec-designed facility
- Stringent design and construction criteria
- DBFOM P3 water sector project
- Many stakeholders requiring water supply through construction

Regina Wastewater Treatment Plant

In 2018, EPCOR completed the City of Regina's Wastewater Treatment Plant upgrade project through a P3 (DBFOM). Located in southern Saskatchewan, the Project is one of Canada's largest water infrastructure projects and was delivered on time and under budget. EPCOR was responsible for operating and maintaining the existing assets during the construction and commissioning of new process units, providing equipment isolation, and managing tie-ins and shutdowns.

In addition, EPCOR is responsible for the plant's ongoing operation after substantial completion with an operating term of 30 years. EPCOR provided the City of Regina with over $75M of competitively priced financing with a 27.5-year tenor through corporate financing. An independent value-for-money analysis of the Project by Deloitte calculated a total savings of approximately 20% to the City of Regina under the DBFOM contracting versus traditional municipal procurement, with nearly $100 million net present value (NPV) life-cycle savings attributable to risk transfer, construction cost and operational efficiencies with EPCOR.

2018: ISO 14001: 2015 certified environmental management system

2017: Western Canada Water "Exceptional Municipal Project Award"

2014: Canadian Council Public-Private Partnerships "C.W. Chuck Wills Award" for Innovation & Excellence in the municipal sector

Project Highlights

- Stantec-designed facility
- DBFOM P3 water sector project
- Long-term O&M contract (30 years)
- Treats more than 6.5 billion gallons of wastewater each year

Darlington Demineralized Water Treatment Plant

The project includes the design, build, finance, operation, and maintenance of a new water treatment plant that will supply ultra-pure demineralized water to the Darlington Nuclear Generating Station. EPCOR is the lead developer, financier and operator for this project and Stantec is the designer and engineer on record. The water treatment plant will treat raw water from Lake Ontario has a peak capacity of approximately 3 MGD. Due to the criticality of the nuclear generating station, the new WTP is required to provide a highly reliable supply of demineralized water utilizing innovative and proven technologies to support the station on a continuous basis (24/7/365).

Project Highlights

- Stantec-designed facility
- DBFOM water sector project
- Long-term O&M contract (30 years)
- Best-in-class treatment technologies including UF, RO, CEDI and mixed bed polishing

Technologies employed at this facility include ultrafiltration, reverse osmosis, granular activated carbon, continuous electrodionization and mixed bed polishing. Construction of this facility is underway and is planned to be commissioned in late 2023.

Financial Strength

EPCOR has significant experience with and the ability to structure and raise competitively priced financing for the Project. EPCOR secures required financing for projects through EPCOR Utilities Inc., a stand-alone corporation and operates at arm's length from its sole shareholder (the City of Edmonton) with a fully independent Board of Directors.

EPCOR funds annual capital to its existing water and wastewater-related regulated assets; in 2021 alone, EPCOR successfully delivered and financed over $700M in capital projects. In addition, since 2005, EPCOR has delivered over $300M worth of DBFOM projects in Canada and maintained all financing needs for those facilities over time. As a result, EPCOR is confident it can deliver the financing needs for the Project at a competitive price. **Table 3** displays DBFOM projects EPCOR has successfully delivered since 2005 as the project lead, operator, and financier.

Table 3: EPCOR DBFOM Project Examples

Project	Year	EPCOR's Role	Total Capital Cost
Samsung Water Treatment & Reclamation	2022	Lead, O&M, Financier	Confidential
Darlington WTP	2020	Lead, O&M, Financier	$48M
Trans Mountain Pipeline Electrical Assets	2019	Lead, Maint., Financier	$76M
Vista Ridge Pipeline P3	2018	O&M, Financier	$930M
Regina WWTP	2014	Lead, O&M, Financier	$117M
Evan Thomas WTP & WWTP	2012	Lead, O&M, Financier	$24M
Town of Taber WWTP	2009	Lead, O&M, Financier	$14M
Britannia Mine WTP	2005	Lead, O&M, Financier	$19M

EPCOR presently owns and operates over $13.2B of utility assets and has become one of North America's most efficient operators of utility infrastructure. S&P Global Ratings' current credit rating for EPCOR is A- / Stable and DBRS Morningstar's current credit rating for EPCOR is A (low) / Stable. Preserving EPCOR's strong investment-grade credit rating remains a corporate priority.

Stantec

Stantec Industrial Water and Wastewater Practice

Stantec – Top Ranked Water and Wastewater Treatment Consultancy

#1 / #2
International Wastewater and Water Firm
ENR 2021

#1
Most Sustainable Corporations in North America
Corporate Knights 2021

#1
Architecture/ Engineering Firm
ENR 2021

With over 5,000 dedicated water and wastewater staff distributed across six geographic operations in our Water business, Stantec is the world's largest international wastewater and second largest international water consultancy based upon Engineering News Record (ENR) 2021 Rankings.

Stantec's global Water business strategy leverages regional Delivery Centers to support and enable Locally focused indigenous engineering capabilities to produce high-quality designs consistent with our global standards that are tailored for the project specific requirements.

Our project delivery approach brings a combination of procedures, methods, systems, and tools that have been tested, proven, and implemented in numerous other projects and programs around the world. We work to align with our client partners to apply this global know-how and best practices at the local and project level. This means we continue to build our best practices on lessons learned, while local staff ensure design deliverables meet local client requirements in a cost-effective manner.


Long Beach Municipal Urban Stormwater Treatment

San Diego Pure Water Program


Metropolitan Water Potable Reuse Project

Stantec is a World Leader in Wastewater Treatment Technology

Stantec has designed over 2,500 wastewater treatment plant projects over the company's 60-year history. The firm is a North American leader in biological nutrient removal (BNR) technology having designed the first BNR plant in North America in Kelowna, British Columbia, Canada in 1982. Since then, the firm has designed over 150 BNR plants around the world. Stantec process engineers were instrumental in the development of much of the science and technology of BNR including swing zones, primary sludge fermentation, and nutrient recovery. The Stantec experience covers a range of effluent nitrogen (2 mg/L to 10 mg/L) and effluent phosphorus (<0.05 mg/L to 1 mg/L) limits. Notable Stantec BNR projects include the Bonnybrook BNR facility in Calgary which is the largest cold weather BNR plant in the world, the 29 MGD Little Patuxent WWTP in Howard County Maryland, and the Robert W. Hite WWTF in Denver.

Stantec is also a global leader in tertiary treatment and wastewater reuse. The City of San Diego retained Stantec to provide As-Needed Technical Support and Program Management services for the Pure Water San Diego Program in recognition of the firm's industry leading expertise. Pure Water is a phased, multi-year program that uses proven technology to produce a safe, reliable, and cost-effective water supply for the city using highly treated wastewater. At full implementation in 2035, the Pure Water Program will provide one-third of San Diego's water supply locally and will reduce the City's Ocean wastewater discharges by nearly 50%. The 30 MGD North City Pure Water Facility, which is a critical part of the overall program, produces purified water through a five-step advanced purification process that includes: ozonation, biologically activated carbon filtration, microfiltration, reverse osmosis, and UV disinfection/advanced oxidation. Stantec is also providing process engineering services for the Long Beach Municipal Urban Stormwater project as well as the Metropolitan Water Reuse project in California that will convert wastewater into municipal drinking water.

Industrial Water and Wastewater Treatment Services for the High-Tech Market

Stantec offers extensive experience with water and wastewater treatment for the High-Tech market. A description of Stantec's recent relevant experience is summarized below.

Confidential Client – Taylor Texas

Stantec has completed the process design and is engaged in the detailed design for the wastewater pre-treatment, post treatment, and wastewater recycling systems for a new semiconductor fab in Taylor, Texas. The total design flow for the new facilities in 10.5 MGD. The pre-treatment design includes fluoride removal, hydrogen peroxide quenching, advanced oxidation, moving bed biofilm reactor (MBBR), ion exchange, ammonia stripper, lime softening, and pH control. Seven individual process streams are being pre-treated including IWW1, IWW2, AWW, AKWW, OWW, CuCMP, and UPW reject. The pre-treated wastewater from the IWW2, OWW, and AKWW streams are combined for treatment in a membrane bioreactor (MBR) with a four stage Bardenpho configuration. The MBR treated and remaining pre-treated process streams (IWW1, AWW, and UPW reject) are combined, equalized, and then treated via reverse osmosis (RO). RO concentrate is directed to an evaporator-crystallizer producing a salt product for landfill disposal. The high-quality effluent stream will be suitable for direct river discharge and recycling within the semiconductor process.

Taiwan Semiconductor Manufacturing Company (TSMC) – Phoenix, Arizona

Stantec is working with a Taiwanese partner to deliver the design of the wastewater pre-treatment and reclamation facilities for TSMC's new semiconductor fab in Phoenix, Arizona. The total 4 MGD facility includes fluoride precipitation, pH neutralization, ammonia stripping and capture, ion exchange, reverse osmosis, activated carbon

filtration, TMAH removal, sludge thickening and dewatering, and advanced oxidation of azole compounds. RO treated wastewater is being recycled within the semiconductor fabrication process. Stantec is also assisting with expediting the building and industrial discharge permits for this new facility.

Two Advanced Wastewater Treatment Facilities ($500 M), Confidential Industrial Client, Location Confidential

Stantec was selected by a global semiconductor manufacturer to design and construct two advanced wastewater treatment facilities using biological nutrient removal/membrane bioreactor technology (BNR/MBR) combined with advanced treatment processes and zero liquid discharge. The highly complex, difficult-to treat industrial waste required intensive bench and pilot scale testing conducted by Stantec's internal Research Group to customize a treatment solution to meet rigorous discharge requirements. Near 100% uptime requirements for the full-scale facilities necessitated full redundancy and elimination of single points of failure throughout the facilities.

The first plant is in the Middle East and has a capacity of 3.3 MGD. The second facility is in the Pacific Northwest. The 9.95 MGD facility includes emergency and equalization basins, a pretreatment chemical process, BNR/MBR, odor control, ion exchange, high-recovery reverse osmosis, zero-liquid discharge brine concentration and crystallization, solids dewatering, and chemical stabilization.

Northrop Grumman Wastewater Treatment System Re-Design Engineering Study, BWI Campus, Baltimore, Maryland.

Stantec was awarded a project to provide an engineering study to re-design the existing wastewater treatment plant at the Northrop Grumman BWI Campus in Baltimore, MD. The facility manufactures and assembles electronic components and microchips for space applications. The existing treatment system covers two floors of a building and operating costs are high. The objective of the study was to modify the treatment process to reduce operating costs and modify both the process design and physical layout to reduce the footprint by approximately 50%. The project also included the process design of modifications to the water reclaim system which recycles treated wastewater back to the plating process to increase the volume of reclaim water.

Stantec evaluated the existing treatment process and identified several options to reduce operating costs and footprint. Options included the replacement of the pretreatment microfiltration system with more efficient ultrafilters, utilization of ion exchange technology to replace the existing cyanide oxidation

process, adding reverse osmosis to the pretreatment train to reduce the plant influent volume, upgrades in instrumentation, and modifications to the process flow and tank sizes in the system. Several wastewater treatment system design alternatives were completed that have the potential to reduce the footprint by at least 50% and operating costs by 30 – 40%. The wastewater reclaim system was modified to increase the recycled wastewater volume by 20% by adding a second stage reverse osmosis system and upgrading controls and sensors.

Honeywell Aerospace Manufacturing Facility, Torrance CA

Stantec conducted a water assessment and recommended eight measures to reduce water use at this Honeywell Aerospace Manufacturing Facility. The project included completion of the detailed design of two water conservation and reuse measures and our team managed contractors during the construction phase. Our team provided a three-month commissioning and optimization phase that resulted in increased water savings of seventeen million gallons per year. This project received the Environmental Excellence Award by the Industrial Environmental Association (IEA).

Apple Engineering Services to Optimize Wastewater Treatment System Operation and Performance, Supply Chain Manufacturing Hubs, China

Stantec was awarded a project in support of Apple's Clean Water Program (CWP) to provide engineering services to optimize the operation and performance of wastewater treatments systems at Apple supply chain manufacturing sites in China. The contract manufacturing facilities manufacture and assemble all components of Apple's phone, tablet, and laptop computer product lines. One of the goals of the CWP is to increase the reliability of wastewater treatment systems and reduce the risk of noncompliance with discharge permit limits.

Stantec completed Unit Process Guidelines (UPGs) for twenty-seven wastewater treatment processes currently in use at Apple contract manufacturing sites. The treatment processes were broken down into the following categories:

- Chemical Precipitation
- Biological
- Filtration
- Reuse
- Sludge Treatment

The UPGs were designed to identify critical process parameters that are indicators of wastewater treatment performance and develop measures to mitigate potential operating problems. Guidelines included monitoring equipment and ranges for key operating parameters, maintenance procedures, technology selection criteria, and some equipment specifications. The UPGs were incorporated into Apple's CWP guideline manual and distributed to contract manufacturing plants in China.

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our sites and the great communities
where Project Copper will thrive.

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