## FOUNDERS LANDING PARCEL 1 PART 201 DUE CARE PLAN

## Introduction

This document presents the Part 201 Due Care Plan (Plan) for The Founders Landing Group (FLG) Parcel 1property. The Plan was prepared to guide on-going environmental response activities as specified in Part 201 of the Natural Resources and Environmental Protection Act (Part 201).

The Plan documents known or potential risks to public health and the environment and outlines anticipated actions to be taken in response to any potential risks. The actions were identified and ranked using a risk-based priority process.

## **Property Overview**

The Property, located on a portion of the Founders Landing Development project located in the City of Marquette, Michigan (T46N, R25W, and Section 23). The Property location and boundaries are shown on Figure 1. Historic use of the Property has been industrial (railroad sidings and railroad ROW) since prior to 1906, possibly 1892. The primary historical use of the Property was transportation of petroleum products and chemicals through the railroad ROW and storage and loading of rail cars on the sidings is probable.

The Property contains underground utilities and no other structures. The City of Marquette has prepared the Property for development largely through grading, covering the Property with fill and constructing utilities through the Property and an extension of Lakeshore Boulevard along the eastern Property boundary. The intended future use of the Property is single and multi-family residences as shown in the Site Development plan (Figure 2).

Adjacent properties and features consist of Lakeshore Boulevard, City of Marquette green space and Lake Superior to the east; City of Marquette green space, Founders Landing Parcel 3 (undeveloped), Lakeshore Boulevard and the Marquette County Chamber of Commerce to the north; City of Marquette green space, Founders Landing Parcel 2 (undeveloped) and Lakeshore Boulevard to the south; and U.S. 41/South Front Street and residential development to the west

The MDEQ lists the area of the Property and adjacent properties as "The Abandoned Tank Farm Lower Harbor Part 201 Site" (Site ID of 52000029). This Site is described by the MDEQ as an Interim Response in Progress and includes land located roughly between South Front Street and Lake Superior and extending from Baraga Avenue to beyond Jackson Street. Within this Site is the Property and areas described as the North Tank Farm, South Tank Farm, and the South Rail Yard.

The North Tank Farm contains contaminated soil, groundwater and free phase product from historic petroleum product and caustic chemical storage and distribution. The

South Tank Farm contains contaminated soil and groundwater and possibly free phase product from historic petroleum product storage and distribution. The South Rail Yard property contains soil and groundwater contamination from of a leaking underground storage tank (LUST) site, a manufactured gas plant (MGP) and a railroad roundhouse.

Each of the areas within the Site has had at least a limited investigation to address environmental conditions. Of particular importance to this BEA is investigation data associated with the South Tank Farm. Soil and groundwater contamination have been documented and reported to the Michigan Department of Environmental Quality. The degree of contamination in soil and groundwater samples collected from locations within the South Tank Farm is significant but no work was identified delineating the extent of these impacts west of the South Tank Farm's western property boundary. This boundary overlaps the eastern property limits of the Property subject to this BEA (Figure 3).

A second basis for classifying the Property as a Part 201 Facility is a Property Environmental Plan figure prepared for the City of Marquette (Appendix B). This document indicates the presence of a broad swath of soil within the Property that reportedly exceeds MDEQ part 201 soil direct contact cleanup criteria. The City of Marquette has not produced the analytical data that support this delineation of contaminated soil, or whether specific remedial actions have been performed to remove these materials from the Property.

The Environmental Plan for the City of Marquette references the Health and Safety Plan for the South Rail Yard Site, which is in turn referenced in the City's Due Care Plan for the Property. The Due Care Plan specifies that notifications regarding the possible presence of hazardous substances located on-site will be made by the property owner (City) to purchasers of the property using certified mail with return receipt documentation.

Supporting this Due Care Plan are multiple information sources (reports pertaining to the former North and South Tank Farms, a subsurface exploration report for geotechnical design purposes encompassing the Property, buyer's representative knowledge and visual evidence of fill during the Property reconnaissance) indicating that the Property is built on fill, some of which contains industrial waste (coal, ash) and demolition debris. Reports associated with the Abandoned Tank Farm Lower Harbor Part 201 Site suggest that metal ion concentrations (including lead and arsenic) exceeding Part 201 direct contact criteria may be present in this historical fill material.

In March 2009, a limited due care investigation of soil quality identified areas of soil with metals concentrations exceeding Part 201 generic cleanup criteria (North Jackson Company, 2009). Ten samples were collected from three soil borings (B7-2009, B8-2009, and B9-2009) during geotechnical drilling and sampling that was performed on March 5, 2009 by Coleman Engineering.

The soil quality data support a conclusion that the site is a Part 201 facility based on the following:

- 1. Historical fill material encountered at all three borings contain metals parameters exceeding generic Part 201 cleanup criteria for residential and commercial land use for soil quality protective of groundwater (both drinking water and groundwater/surface water protection criteria). The parameters exceeding at least one of these criteria are barium, boron, iron, mercury and zinc. Iron is the most frequently detected parameter exceeding these criteria, in 7 of 10 samples.
- 2. Lead was also detected at the direct contact criteria of 400 mg/kg (400,000 ug/kg) in one sample.

The results indicate that the Property contains historical fill material exceeding generic Part 201 cleanup criteria. One sample of recent fill surface soil cover (B-8 2009 2.5 – 4.5 feet) placed on the property by the City of Marquette as part of its land reuse program, and also one sample of native soil located beneath the historical fill (B-9 2009 12.0 – 14.0) did not contain any parameters exceeding generic Part 201 soil quality.

Although generic criteria were exceeded, meeting the definition of a Part 201 facility, proposed Property land reuse or further technical evaluation may lead to a conclusion that all of these criteria are not applicable or that concentrations are within criteria for groundwater samples for the Property.

## **Marquette Area Soil and Groundwater Conditions**

#### **Soil Conditions**

Marquette is located near the northeastern end of the Marquette Iron Range on the Lake Superior Shore. Regional reports (prepared by the U.S. Geological Survey) classify the Marquette area soils mostly as glacial outwash and lakebed deposits. Extensive areas of shallow bedrock and bedrock outcrop (Precambrian crystalline and metasedimentary formations) are also located in Marquette. Because they are not underlain by aquifers, the areas characterized by shallow rock and rock outcrop are considered to be at much less risk to groundwater for long-term environmental impact caused by contaminant releases. Glacial outwash and lakebed deposits typically contain mostly permeable sand that is easily infiltrated from surface spills, therefore these areas are at relatively greater risk of long term-environmental impact because contaminants potentially leach through these soils to aquifers.

#### **Surface Water Conditions**

Marquette is located along the Lake Superior shore. All surface runoff and drainage in the area eventually discharges to the Lake. Small streams flow adjacent to the southern boundary of the Property. Lake Superior is the water supply source for Marquette with waterworks intakes located more than one mile offshore.

## **Groundwater Conditions**

In the Marquette area, most groundwater is contained and flows in the glacial and lakebed

deposits that are bounded by relatively impermeable bedrock. The rock boundaries form groundwater basins and flow is channeled through these basins, eventually discharging to streams, or directly as seepage to Lake Superior. Bedrock divides separate flow into individual flow basins. The general flow directions of the groundwater basins in the Marquette area are shown in Figure 1. These flow directions have been estimated from surface water flow patterns, bedrock outcrop information, water level monitoring data for specific properties in the area, and regional information on groundwater flow (USGS).

Within the basins, up to 150 feet of glacial and lakebed deposits may overlay bedrock in the Marquette area. The glacial deposits are a combination of stratified outwash deposits (sand and gravel) and unstratified glacial till (poorly sorted clay-sand-boulder mixtures). The igneous and metamorphic rocks of the area may store and transmit some water in fractures. However, fracturing is generally not extensive enough in most places to allow large quantities of water to flow in the rock.

Groundwater wells for drinking water supply are prohibited by city ordinance in Marquette.

## FOUNDERS LANDING GROUP PARCEL 1 Due Care Assessment and Cleanup Criteria Evaluation

### 1.0 Concentrated Hazardous Substance Sources

## 1.1 Containerized Hazardous Substances Present

<u>Within Criteria</u> – Abandoned containerized hazardous substances are not known to be present at the Property.

## 1.2 Free-phase Liquid Present

Within Criteria – Free-phase liquids are not known to be present on the Property.

## 1.3 Other Sources Present

<u>Action Needed</u> – The Property contains historical fill characterized by elevated concentrations of metals exceeding generic cleanup criteria protective of surface water. Groundwater quality data should be collected and evaluated to determine if impact to groundwater exceeding a level protective of surface water from these soils is occurring.

## 1.4 Sources Related to Post June 5, 1995 Release Present

<u>Within Criteria</u> – A Post-June 5, 1995 contaminant release is not known to have occurred on the Property.

## 1.5 Analysis of Source Controls

<u>Action Needed</u> – See 1.3 above.

## 2.0 Risks Due to Groundwater Contamination

## 2.1 Drinking Water Usage

Key Factors:

- The Property groundwater may be an aguifer.
- Historical fill contains potential sources of contaminants to aquifer.

- Property groundwater concentrations of metals are currently unknown.
- Water supply wells are not located on the Property.
- Drinking water supply is from the Marquette City system from Lake Superior and local city ordinance prohibits the installation of wells for water supply.
- The groundwater-to-drinking water exposure pathway is not known to present a current risk to human receptors.

<u>Relevant Pathway, Criteria not applicable</u> – Drinking water exposure pathway is reliably restricted by municipal ordinance and public system from Lake Superior.

## 2.2 Dermal Contact

## **Key Factors:**

- The Property groundwater may be an aquifer.
- The depth to groundwater is likely less than 15 feet, within the installation depth of typical utilities.
- Groundwater yield to excavations may produce significant seepage.
- Below ground utility easements are located on the Property.
- Public and private potable supply wells are not located on the Property or between the Property and the assumed Lake Superior groundwater discharge point.
- New wells cannot be installed on the Property without CCIC authorization.
- Future Property use is not governed by enforceable land use restrictions or through an approved institutional control.
- The groundwater-to-dermal exposure pathway may represent a current risk to human receptors.

<u>Relevant Pathway, Action Needed</u> – Groundwater quality data should be collected because it is currently unknown if Property groundwater contains concentrations of metals that exceed Part 201 contact criteria considered protective of public health.

## 2.3 Volatilization to Indoor Air

## **Key Factors:**

- The Property groundwater may be an aquifer.
- Property groundwater is not known to contain volatile compounds at concentrations that exceed Part 201 indoor air inhalation criteria.
- The depth to groundwater is likely greater than three meters below grade.
- No public or private potable supply wells are known to be located on the Property or between the Lake Superior groundwater discharge point.
- Supply wells cannot be installed on the Property.
- Below ground utility easements are located on the Property.
- The proposed development plan contains residential structures.
- Future Property use is not governed by enforceable land use restrictions or through an approved institutional control.
- The groundwater-to-indoor air hazard is not known to represent a current risk to human receptors.

<u>Relevant Pathway, Within Criteria</u> - Volatile chemical hazards do not exist on the Property.

## 2.4 Venting to Surface Water

## **Key Factors:**

- The Property groundwater may be an aguifer.
- Historical fill presents potential sources of contaminants.
- The aguifer likely has a hydraulic connection to Lake Superior.
- Artificial structures that could alter the aquifer-to-surface water hydraulic connection are not known to be located on the Property.
- Groundwater quality downgradient of the property is needed for contaminant concentrations to determine if Part 201 groundwater surface water interface (GSI) criteria is exceeded.

<u>Relevant Pathway, Action Needed</u> – Groundwater quality data downgradient of the Property is needed to determine if contaminant concentrations exceed Part 201 GSI criteria.

## 3.0 Risks Due to Soil Contamination

#### 3.1 Direct Contact

## Key Factors:

- Public access to the Property is not controlled.
- Historical fill present potential sources of contaminants.
- Property use is not governed by enforceable land use restrictions or through an approved institutional control.
- A soil cover has been placed over Property surface soil characterized by arsenic concentrations exceeding the residential Part 201 soil direct contact criterion.
- The impacted soil-to-dermal exposure pathway does not represent a current risk to human receptors.

Relevant Pathway, Action Needed – Surface soil contain concentrations of arsenic, copper and perhaps chromium that exceed Part 201 direct contact criteria. The impacted soils have been covered and do not represent a continuing direct contact exposure risk. Soil management during construction and property use by owners is required to maintain exposure barriers to historical fill.

## 3.2 Ambient Air Inhalation

## **Key Factors:**

- Public access to the Property is not controlled.
- Historical fill present potential sources of contaminants.
- Most Property soil is not vegetated or covered by impermeable barriers.
- Surface soil concentrations of arsenic and perhaps chromium exceed industrial and residential Part 201 particulate inhalation criteria. The surface soil has been covered with six to eight inches of soil and will be vegetated in 2001.
- Property use is not governed by enforceable land use restrictions or through an approved institutional control.
- The surface area of soil exceeding Part 201 particulate inhalation criteria is not known.
- The impacted soil-to-dermal exposure pathway represents a potential current risk to human receptors.

<u>Relevant Pathway, Within Criteria</u> – Soil concentrations of contaminants are less than inhalation risk criteria.

## 3.3 Injury to Drinking Water Use of Aquifer

**Key Factors:** 

- The Property groundwater is an aquifer.
- Historical fill presents a potential source of contamination for some metals.
- Property groundwater quality is undetermined
- Public and private water supply wells are not known to exist on the Property or between the Property and the assumed groundwater discharge point.
- Future drinking water use will be by enforceable land use restrictions or through an approved institutional control.
- The impacted soil-to-groundwater-to-drinking water exposure pathway is not considered present a current or future risk to human receptors and is reliably restricted by city supply and ordinances.

<u>Relevant Pathway, Criteria not applicable</u> – Historical fill contains elevated concentrations of metals above drinking water protection criteria. Property groundwater quality is undetermined.

## 3.4 Leaching to Groundwater and subsequent direct dermal contact

## Key Factors:

- The Property groundwater is an aquifer.
- Two dumps and stained soil represent potential sources of contaminants.
- The depth to groundwater is likely less than 15 feet, within the installation depth of typical utilities.
- Groundwater yield to excavations may produce significant seepage.
- Below ground utility easements are located on the Property.
- Surficial soils contain elevated concentrations of arsenic, cadmium and chromium.
- Property groundwater contains concentrations of arsenic, chromium and copper that exceed Part 201 contact criteria.
- The City of Marquette has previously provided notification to utility companies with easements and structures at the Property of the presence of potential exposure risks.
- The impacted soil-to-groundwater-to-dermal exposure pathway may represent a current risk to human receptors.

Relevant Pathway, Within Criteria - Soil quality are less than criteria.

## 3.5 Leaching to Groundwater and then venting to Surface Water

## **Key Factors:**

The Property groundwater is an aquifer.

- Historical fill presents potential sources of contaminants.
- Groundwater quality data is not available.
- The aquifer likely has a hydraulic connection to Lake Superior.
- Artificial structures that could alter the aquifer-to-surface water hydraulic connection are not known to be located on the Property.
- The presence of persistent or bioaccumulative substances is not known to be present in Property groundwater or surface water.
- The impacted soil-to-groundwater-to-surface water exposure pathway is not known to represent a current risk to surface water receptors.

<u>Relevant Pathway, Action Needed</u> – Property groundwater quality data is needed to asses.

## 3.6 Contaminated Soil Runoff (Direct Transport) to Surface Water

## Key Factors:

- Property surficial soils contain elevated concentrations of arsenic, cadmium and chromium.
- Property stormwater flows to a wetland adjacent to the Property.
- Most Property ground surfaces are not vegetated.
- Surface water in the adjacent wetland contains elevated concentrations of arsenic, chromium and copper.
- Available information does not suggest the presence of discernible adverse contaminated soil runoff impact to Carp or Gold Mine Creek.
- A clean soil cover has been placed over Property historical fill soils.
- The impacted soil-to-surface water exposure pathway may represent a current surface water receptor risk.

<u>Relevant Pathway, Action Needed</u> - The impacted soils have been covered and do not represent a continuing contaminated soil runoff to surface water exposure risk. Soil management needs to be performed during construction and ownership to avoid soil runoff.

### 3.7 Volatilization to Indoor Air

## Key Factors:

- Public access to the Property is not restricted.
- The Property development will contain residential structures.
- Property soil does not contain volatile compounds at concentrations that exceed Part 201 vapor inhalation criteria.

 The volatile contaminant impacted soil-to-ambient or indoor air inhalation exposure pathway is not expected to represent a risk to human receptors.

<u>Relevant Pathway, Within Criteria</u> – Property groundwater does not contain volatile compounds at concentrations that exceed Part 201 vapor inhalation criteria.

## 4.0 Risks Due to Contamination of Surface Water Sediments

<u>Relevant Pathway, Criteria not applicable</u> – Surface water sediment quality is not applicable to Parcel 1.

## 5.0 Other Risks

## 5.1 Acute Toxic Impacts & Physical Hazards

Relevant Pathway, Within Criteria – The Property is not known to contain abandoned materials classified as ignitable, corrosive or reactive as defined in the Resource Conservation and Recovery Act. Abandoned materials known to represent acute inhalation toxicity or flammability or explosivity potential are also not known to be present on the Property. Information suggesting the presence of free-phase liquids or soils containing hazardous compounds in quantities approaching the saturation limit has not been identified.

## 5.2 Ecological (terrestrial flora & fauna) & Aesthetics

Relevant Pathway, Within Criteria - No ecological or aesthetic risks are present.

## 6.0 References

Beckett & Raeder, 2003. South Rail Yard Development Phase I. Prepared for the City of Marquette, Michigan. August 13, 2003.

Coleman Engineering Company. 2003. Report of Subsurface Exploration for Proposed Lower Harbor Housing Development, Marquette, Michigan. Prepared for Beckett & Raeder, Inc., July 2003.

Geraghty & Miller. 1993. Draft Phase 1 Remedial Investigation Report for the Abandoned South Tank Farm Site Marquette, Michigan. Prepared for Texaco Refining & Marketing, Inc., October 1993.

Geraghty & Miller. 1994. Feasibility Study and Remedial Action Plan for the Abandoned South Tank Farm Site, Marquette, Michigan. Prepared for Texaco Refining & Marketing, Inc., June 1994.

North Jackson Company. 2008. Baseline Environmental Assessment Founders Landing Parcel 1. Prepared for Founders Landing Group.

North Jackson Company. 2009. Memorandum of Soil Quality Sampling Results for Founders Landing Parcel 1. Prepared for Founders Landing Group

STS Consultants. 1995. Feasibility Study and Remedial Action Plan, Lower Harbor Tank Farm Complex, Marquette, Michigan. Prepared for Wisconsin Central Ltd and The Dow Chemical Company.

Trimedia Consultants. 2001. Phase 1 Environmental Site Assessment of the Wisconsin Central, LTD. Lakeshore Boulevard Extension Property, Marquette Michigan. Prepared for City of Marquette, August 20, 2001.

Trimedia Consultants. 2002. Baseline Environmental Assessment, City of Marquette Grant Fund – Lakeshore Boulevard Extension Project, Marquette Michigan 49855. Vols I, II, III. Prepared for City of Marquette, June 25, 2002.

Trimedia Consultants. 2003. Health and Safety Plan. City of Marquette Former South Rail Yard Site, South Lakeshore Boulevard. Prepared for City of Marquette, August 25, 2003.

Trimedia Consultants. 2005. Construction Documentation Report, Abandoned Tank Farm Lower Harbor, Marquette, Michigan, Weston Project Number 20082.006.010. Prepared for Weston Solutions of Michigan, March 16, 2005.

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Trimedia Consultants. City of Marquette Due Care Plan. Published at: http://www.mqtcty.org/city\_website/WebsiteGeneral/PDF/Current\_Projects/Founders/due\_c are\_plan.pdf. Prepared for the City of Marquette

## **FOUNDERS LANDING GROUP PARCEL 1 Environmental Assessments and Response Actions**

## **Completed Response Actions**

- 1. City of Marquette BEA 2001
- 2. City of Marquette Due Care Plan 2001
- 3. City of Marquette soil cover 2003
- 4. City of Marquette Utility worker notifications (verify date)
- 5. Founders Landing Group BEA 2008
- 6. Soil Quality Sampling 2009
- 7. Soil Management Plan 2009 (Attachment A)
- 8. Founders Landing Group Due Care Plan 2009

## Anticipated Response Actions

- 1. Groundwater and Surface water quality limited assessment.
- 2. Implement soil management plan during construction activities.
- 3. Utility work and easement holder notification verification or resubmitted.
- 4. Due Care assessment and plan updates as necessary with development activities.

#### Attachment A

## Soil Management Plan Founders Landing Parcel 1

#### 1.0 Introduction

The procedures in this plan should be followed in order to mitigate unacceptable exposure risks to contaminated soil and to avoid exacerbation of existing site conditons. This plan is prepared in conjunction with a Property Part 201 Due Care Plan prepared as specified in applicable rules specified in Part 201 of the Natural Resources and Environmental Protection Act, Act 451 of 1994, as amended.

Soil excavation is necessary and expected during the installation of building foundations. Some removal of historical fill has been recommended by geotechnical engineering studies in order to ensure stable and safe structural conditions. The historical fill material has been identified through site assessment sampling and previous environmental assessment data to contain some inorganic compounds (metals) at concentrations that meet or exceed certain generic cleanup concentrations specified in Part 201. These include:

- 1. Drinking water Protection Criteria (Aluminum, Barium, Chromium (total species), iron, and lithium)
- 2. Groundwater/surface water interface protection criteria (Barium, Lithium, and mercury)
- 3. Direct Contact Criteria (Lead)

In order to ensure that unacceptable exposure risks to soil excavated for construction this soil management plan will be used.

The entire property is underlain by the historical fill material and source of the inorganic elements listed above was the historical fill used for construction of railroad sidings and operation of railroad right-of-way. The City of Marquette covered the entire property with clean fill from an outside source prior to sale of the property to Founders Landing Group. Underlying the historical fill are native beach and lakebed recent unconsolidated sand formations, and Precambrian crystalline bedrock.

#### 2.0 Soil Characteristics

The historical fill containing metals at concentrations exceeding generic cleanup criteria is readily distinguishable using standard field methods for physical characteristics.

Historical fill with metals concentration exceeding generic cleanup criteria (described above) consists of dark reddish brown, silty fine sand (USCS classification SM to SP-SM) sized texture with fragments and clasts of coal, limestone, brick, wood, ash, and clinkers. The overlying clean fill and native soils below are dominantly well sorted fine-to medium-grained quartz sand, light reddish brown color (unsaturated) to brown (water saturated). The historical fill also has an apparent relative density that is very loose to loose in comparison to the underlying sand.

## 3.0 Soil Management During Construction Activities

Soil may be excavated at Parcel 1 during foundation excavation, utility installation, grading, and other construction related activity. Whenever soil is being excavated or exposed, the contractor performing the work shall continuously inspect, characterize, monitor, and document the soil excavation activities. Special care must be taken to properly manage the historical fill material described in Section 2.0. Excavated historical fill material shall be managed in a manner to minimize dispersal, mixing, and exposure of the soil to the environment. The following activities shall be performed:

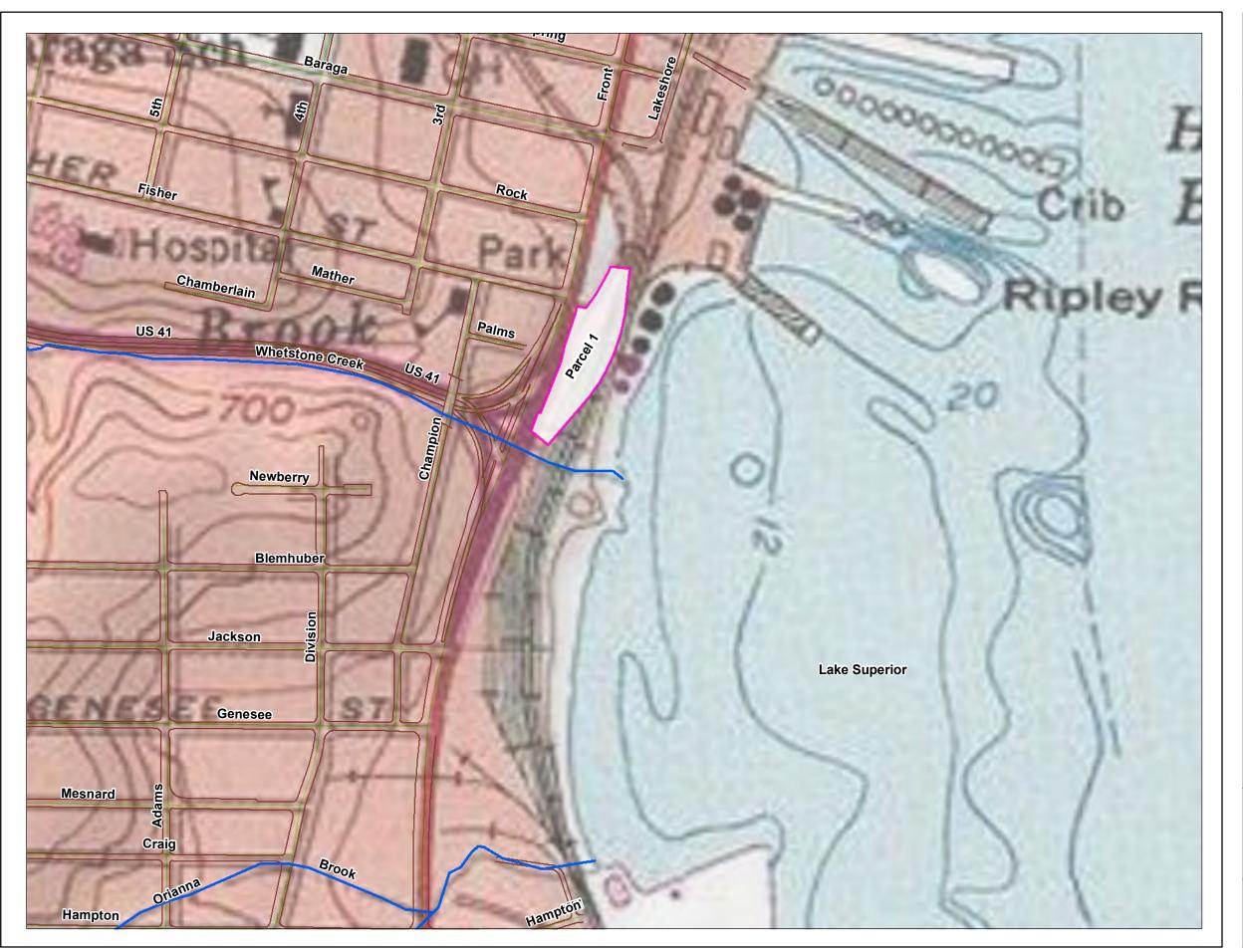
- 1. **Soil Classification**. Historical fill material excavated and exposed should be identified on the basis of its physical characteristics described in Section 2.0. Visual-manual soil classification procedures and data in accordance with ASTM-D2488-00 shall be performed as part of this characterization.
- 2. **Soil Handling and Relocation**. If the historical fill material cannot be returned to the place of its excavation and covered with clean fill it should be managed according to the following procedures.
  - ➤ Temporary stockpiles. Soil shall be placed at a location within Parcel 1 as directed by the site manager or owners. The location should be properly contained with erosion control features including silt fencing and/or berms to prevent run-on and runoff from precipitation. If stockpiled temporarily, the stockpile should be covered with secured plastic sheeting except for when the soil is being handled. The sheeting covering the stockpile shall be adequately secured with sandbags or by other means to prevent the sheeting from becoming dislodged. The sheeting shall be free of rips or tears and inspected daily with any damaged sheeting immediately replaced with new sheeting. Construction caution tape should be used to provide notice to public or site workers to keep of off the stockpile.
  - ➤ **Relocation**. Final location of the historical fill shall be placed in a manner that minimizes risk of erosion including creating final slopes not greater than 2%, and

covering with either a synthetic (e.g. asphalt or concrete) or vegetated soil cover. The location of the relocated historical fill within the property shall be surveyed and documented relative to a site specific or standard land surveying coordinate system. A final soil cover consisting of no less than 12 inches of clean fill material shall be placed above the soil.

- 3. **Documentation**. The contractor shall prepare a report documenting the excavated soil classification procedures conducted during the project, and all soil relocation activities. The report shall include the following information:
  - 1. A summary of field soil classifications
  - An estimate of the volume of excavated historical fill material.
  - 3. Identification on a map with survey coordinates of the relocation of materials.
  - 4. Documentation and description of soil or synthetic cover placement
  - 5. Documentation including photographs that clearly identify the location of the relocated soil, temporary stockpiles and demonstrate the effective containment of the excavated materials.

## 4.0 Health and Safety

Each contractor has the responsibility to manage its operations in a safe manner in compliance with all State and Federal occupational safety and health requirements. The contractors will strictly adhere to its site safety and health plan addressing the safety and health of all personnel involved in the work. At a minimum, the safety and health plan shall conform to the provisions of 29 CFR Parts 1910 and 1926, in particular 1910.120 Hazardous Waste Operations and Emergency Response; EPA Standard Operating Safety Guides, July 1988; NIOSH/OSHA/USCG/EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, October 1985.



# Figure 1 FOUNDERS LANDING Site Vicinity Map Parcel 1



Data Sources:
Barry J. Polzin AIA, Architect
Michigan Center for Geographic Information
USGS Quadrangle

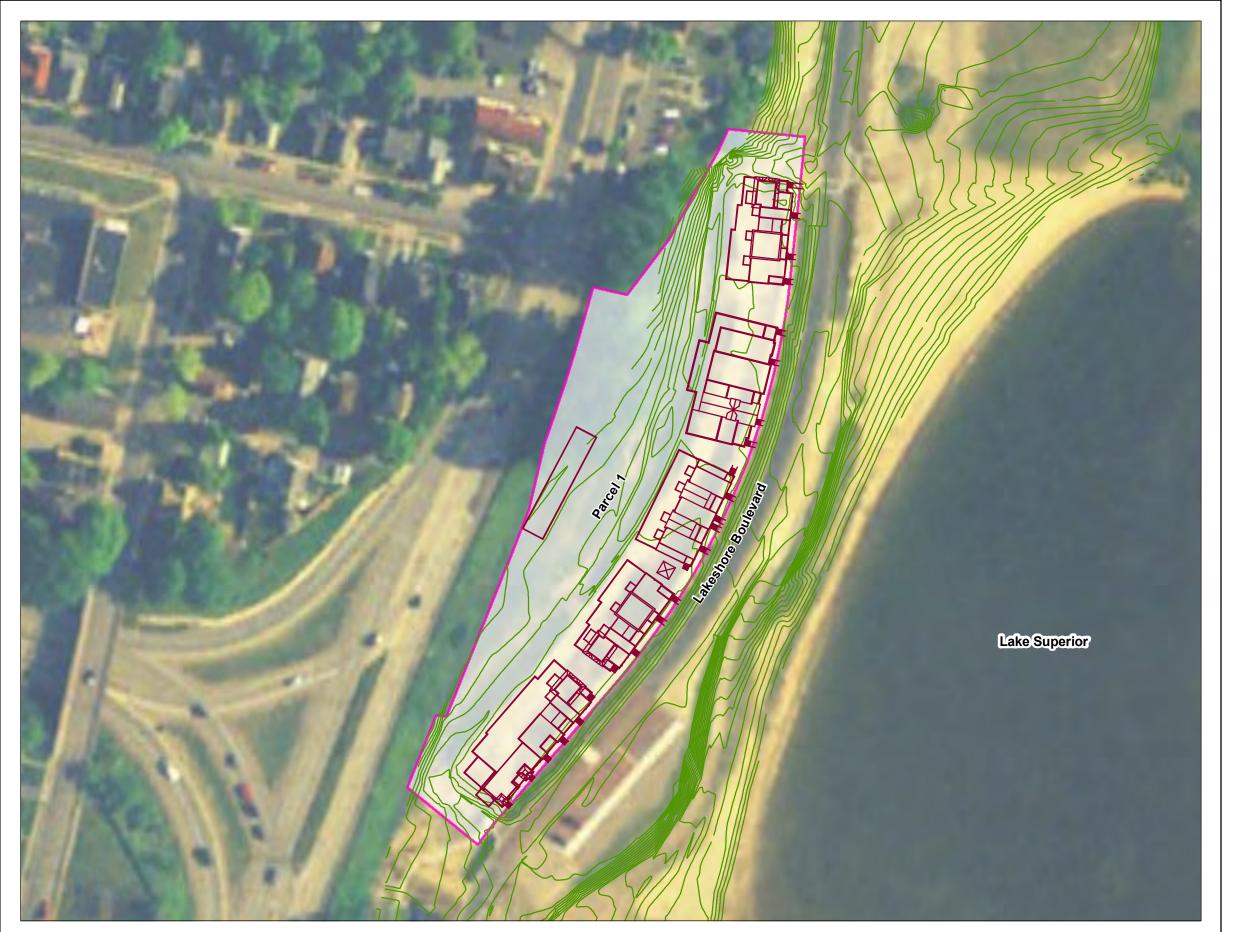
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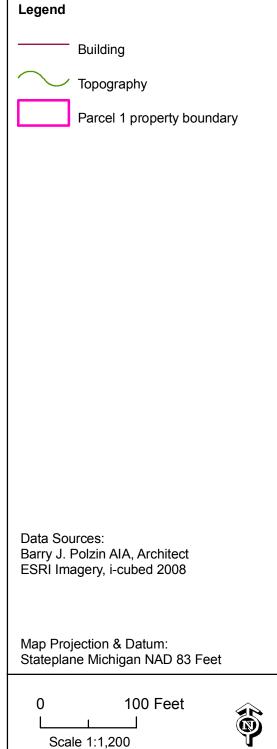


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# Figure 2 FOUNDERS LANDING Site Development Plan



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# Figure 3 FOUNDERS LANDING Parcel 1 and Historical Soil Quality Data

## Legend

- ▲ FLG 1 GPS point for BEA (2008)
- RI Soil sample (STS, 1995) (804) Lead concentration (mg/kg)
- City of Marquette BEA Soil
  Sample (Tri-Media, 2002)
  (517) Lead concentration (mg/kg)
- 2009 Soil Boring



Wisconsin Central LTD. Sample Grid



Parcel 1 property boundary



Area of known soil contamination Marquette South Rail Yard Phase I (Beckett & Raeder, 2003)

#### Notes:

Current Part 201 direct contact criterion for lead is 400 mg/kg.

GPS data accuracy +/- 30 feet.

All soil sample locations estimated.

## Data Sources:

Barry J. Polzin AIA, Architect ESRI Imagery i-cubed 2008 Garmin Hand-held GPS data by North Jackson Company

Map Projection & Datum: Stateplane Michigan NAD 83 Feet

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