City of Stoughton Riverfront Re-Development Remediation Estimates

Stoughton Wisconsin

STOUGHTON
Redevelopment Authority

TRUE NORTH
CONSULTANTS

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Overview

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- **Original Assumptions vs. Current Assumptions**
- **Volume Calculations and Tonnage Calculations**
- **Estimated Costs for Remedial Actions**
- **WEDC Brownfield Grant**
- **Final Estimates of Cost**

Original vs. Current Assumptions

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Original Assumptions:

- Assumed that all material would need to be hauled off-site for disposal.
- Assumed removing contaminated materials below most stringent WDNR cleanup levels.

Current Assumptions:

- Based on current design plans from Brink's team, most material can remain on-site vs. having to be removed. Only Remedial Action soils need to be hauled off-site.
- Have a defined remediation objective protective of WDNR direct-contact cleanup levels (less stringent).

Volume and Tonnage Calculations

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Volume

- Using defined cleanup objective protective of direct-contact exposures.
- Identifying horizontal extents of exceedances using industry standard methodologies.
- Applying depths of excavations for development and depths for direct-contact cleanup objectives.
- Simple math to calculate volume from these parameters.

Volume and Tonnage Calculations

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Tonnage

- Construction industry works in cubic yards as a measurement of soil (volume unit).
- Environmental industry works in tons of soil for disposal purposes (weight unit).
- Need for converting from cubic yards to tons.

- Industry standard for conversion is to use a number of 1.5 tons per cubic yard (tons/cy).
  - Examples:
    - Sand – 1.3 tons/cy
    - DOT Gravel – 1.5 tons/cy
    - Topsoil – 1.2 tons/cy

Volume and Tonnage Calculations

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Project Assumptions

- Industry standard is to use 1.5 tons per cubic yard (tons/cy).
- For budgeting purposes, True North recommends using 2.0 tons/cy.
- Reason for 2.0 tons/cy:
  - Allows for varying soil types
  - Allows for varying water content – wetter is heavier.
  - Allows contingency for additional soil removal if encountered during excavation.
- ALL COST estimates are based on 2.0 tons/cy.

Estimated Costs for Remedial Actions

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SUMMARY OF ASSUMPTIONS

- **Volumes calculated using specific remediation objective and excavation depths required to meet objective or development requirements.**
- **Conversion factor of 2.0 tons/cy.**
- **ONLY DEALS WITH EXPORT OF CONTAMINATED MATERIAL NECESSARY FOR REMEDIAL ACTION.**

Estimated Costs for Remedial Actions

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Volume

- Five areas requiring remedial action per WDNR
  - Three areas at the Public Works Facility
  - One area for Millfab Lead
  - One area for Roberts Electric
- Areas defined by remedial objective and depth of excavation to meet objective or development requirement.
- Table I provides summary of calculations for volume using both conversion factors (I.5 tons/cy and 2.0 tons/cy)

Estimated Costs for Remedial Actions

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Table 1
Estimated Volume of Soil to be Disposed Off-Site
Riverfront Development - Stoughton Wisconsin
May 21, 2021

Location	Area (square feet)	Depth (ft bgs)	Volume (cubic yards)	Conversion Factor (tons/cy)	Tons	Conversion Factor (tons/cy)	Tons
Public Works Facility							
Area 1	3,614	4	536	1.5	804	2.0	1,072
Area 2	1,009	8	299	1.5	448	2.0	598
Area 3	20,323	10	7,527	1.5	11,291	2.0	15,054
Subtotal					12,543		16,724
Roberts Elec (Area 4)	521	6	116	1.5	174	2.0	232
Millfab Lead (Area 5)	6,319	4	936	1.5	1,404	2.0	1,872
Total			**9,414**		**14,121**		**18,828**

Notes:

- According to Brink's team, prior to Remedial Action, the site had a net cut of approximately 5,000 cy.

- Remedial Action cleanup objectives were established to be protective of direct contact exposures.

- Areal extents for the remedial action excavations were determined using typical industry standards and data from investigation results.

Estimated Costs for Remedial Actions

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Tonnage

- Combined areas into three "sites"
  - Public Works Site
  - Millfab Lead Site
  - Roberts Electric Site

TABLE 2 DEFINITIONS

- Quantities are imported from Table I Totals using the Conversion Factor of 2.0 tons/cy.
- Rates for Tipping (Landfill Disposal) and Transportation (Hauling material to landfill) are estimated based on past project experiences.
- "Remedial Action" task is for the export of contaminated materials from the sites.
- "Other Site Investigation" and "Closure" tasks are associated with further delineation of contamination at the sites and taking the sites to closure with the WDNR.
- Only "Remedial Action" task is eligible for WEDC Brownfield Grant.

Estimated Costs for Remedial Actions

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Table 2
Estimated Amount of Project Costs
Riverfront Development - Stoughton Wisconsin
May 21, 2021

TASKS	Public Works Site					Millfab Lead					Roberts Electric					TOTAL
	Description	Quantity	Units	Rate	Subtotal	Description	Quantity	Units	Rate	Subtotal	Description	Quantity	Units	Rate	Subtotal	
Remedial Action																
	Tipping	16724	Tons	$ 20.00	$ 334,483	Tipping	1872	Tons	$ 20.00	$ 37,446	Tipping	232	Tons	$ 20.00	$ 4,631	$ 376,560
	Transportation	16724	Tons	$ 12.00	$ 200,690	Transportation	1872	Tons	$ 12.00	$ 22,468	Transportation	232	Tons	$ 12.00	$ 2,779	$ 225,936
	Consulting	120	HR	$ 115.00	$ 13,800	Consulting	80	HR	$ 115.00	$ 9,200	Consulting	40	HR	$ 115.00	$ 4,600	$ 27,600
	Laboratory	100	SMPL	$ 250.00	$ 25,000	Laboratory	40	SMPL	$ 100.00	$ 4,000	Laboratory	10	SMPLE	$ 100.00	$ 1,000	$ 30,000
Subtotal					*$ 573,973*					*$ 73,113*					*$ 13,010*	$ 660,096
Other Site Investigation																
	Add'l Wells/Sampling	1	LS	$ 25,000.00	$ 25,000	None Needed	0	LS	$ -	$ -	None Needed	0	LS	$ -	$ -	
	Reporting	100	HR	$ 115.00	$ 11,500											
Subtotal					*$ 36,500*					*$ -*					*$ -*	$ 36,500
Closure																
	Package Prep	100	HR	$ 115.00	$ 11,500	Package Prep	40	HR	$ 115.00	$ 4,600	Post Close Mod	20	HR	$ 115.00	$ 2,300	
	WDNR Fees	1	LS	$ 2,500.00	$ 2,500	WDNR Fees	1	LS	$ 1,800.00	$ 1,800	WDNR Fees	1	LS	$ 800.00	$ 800	
Subtotal					*$ 14,000*					*$ 6,400*					*$ 3,100*	$ 23,500
Estimated Totals					$ 624,473					$ 79,513					$ 16,110	$ 720,096

NOTES:

- The Phase 1 portion of the development includes the remedial actions for three areas, two of which appear outside of the areal extents of Phase 1 portion of the development - as described to True North.

- The Phase 1 portion of the development is reflected in this cost estimate. There will be other costs associated with the Highway Trailers property which we do not have any data for at this time.

- Brink's team will likely have some thoughts on the cut/fill process. If they were at a net loss of about 5,000 cy and we are proposing removal of 9,414 cy just for this Phase, they will likely need to import the difference. .

- Using same assumptions above, but at the lower 1.5 tons per cubic yard conversion from Table 1, the Remedial Action task total would be $509,472.

- The Remedial Action task is the only task that could be eligible for the WEDC Brownfield Grant.

WEDC Brownfield Grant

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WEDC Brownfield Grant

- Applied for by Brink's team for Remedial Action task for the following sites:
  - Public Works Site
  - Millfab Lead Site
  - Roberts Electric Site

TABLE 3 ASSUMPTIONS and CLARIFICATIONS

- Quantities are imported from Table 2 Totals.
- Costs are only for Phase I portion of the development.
- "Remedial Action" task is for the export of contaminated materials from the sites.
- "Other Site Investigation" and "Closure" tasks are associated with further delineation of contamination at the sites and taking the sites to closure with the WDNR.
- Only "Remedial Action" task is eligible for WEDC Brownfield Grant.
- Maximum award from the WEDC is now $250,000.

WEDC Brownfield Grant

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Table 3
WEDC Grant and Estimated Cost Explanation
Riverfront Redevelopment - Stoughton - Phase 1 ONLY
May 21, 2021

TASKS	Estimated Costs	WEDC GRANT Reimbursement	TOTAL
REMEDIAL ACTION			
Contaminated Soil Tipping Fee Total	$ 376,560.00	$ (250,000.00)	$ 126,560.00
Contaminated Soil Transportation Fee Total	$ 225,936.00	$ -	$ 225,936.00
Consulting	$ 27,600.00	$ -	$ 27,600.00
Laboratory	$ 30,000.00	$ -	$ 30,000.00
Remedial Action Subtotal	$ 660,096.00	$ (250,000.00)	$ 410,096.00
OTHER SITE INVESTIGATION			
Public Works Add'l Well/Sampling	$ 25,000.00	$ -	$ 25,000.00
Reporting	$ 11,500.00	$ -	$ 11,500.00
Other Site Investigation Subtotal	$ 36,500.00	$ -	$ 36,500.00
CLOSURE			
Package Prep Public Works and Millfab Lead Sites	$ 16,100.00	$ -	$ 16,100.00
Post Closure Modification Roberts Electric Site	$ 2,300.00	$ -	$ 2,300.00
WDNR Fees	$ 5,100.00	$ -	$ 5,100.00
Closure Subtotal	$ 23,500.00	$ -	$ 23,500.00
TOTAL	$ 720,096.00	$ (250,000.00)	**$ 470,096.00**

Notes:

- Matching costs for the grant include the acquisition cost of $400K and other eligible costs (e.g., infrastructure replacement - $1.8M).

Final Estimates of Cost

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Summary of Costs for Phase I Portion of Development

- Three separate sites are included in Phase I portion of development.
- Remedial Actions are required at each site by the WDNR.

- Total Quantity of Soils Estimated to be Removed:
  - 9,414 cubic yards equaling 18,828 tons

- Estimated Costs for Remedial Action: $660,096
- Assumed WEDC Grant Award Amount: $250,000
- Total Other Costs for Investigation/Closure: $60,000
- Total ESTIMATED Cost for project: $470,096

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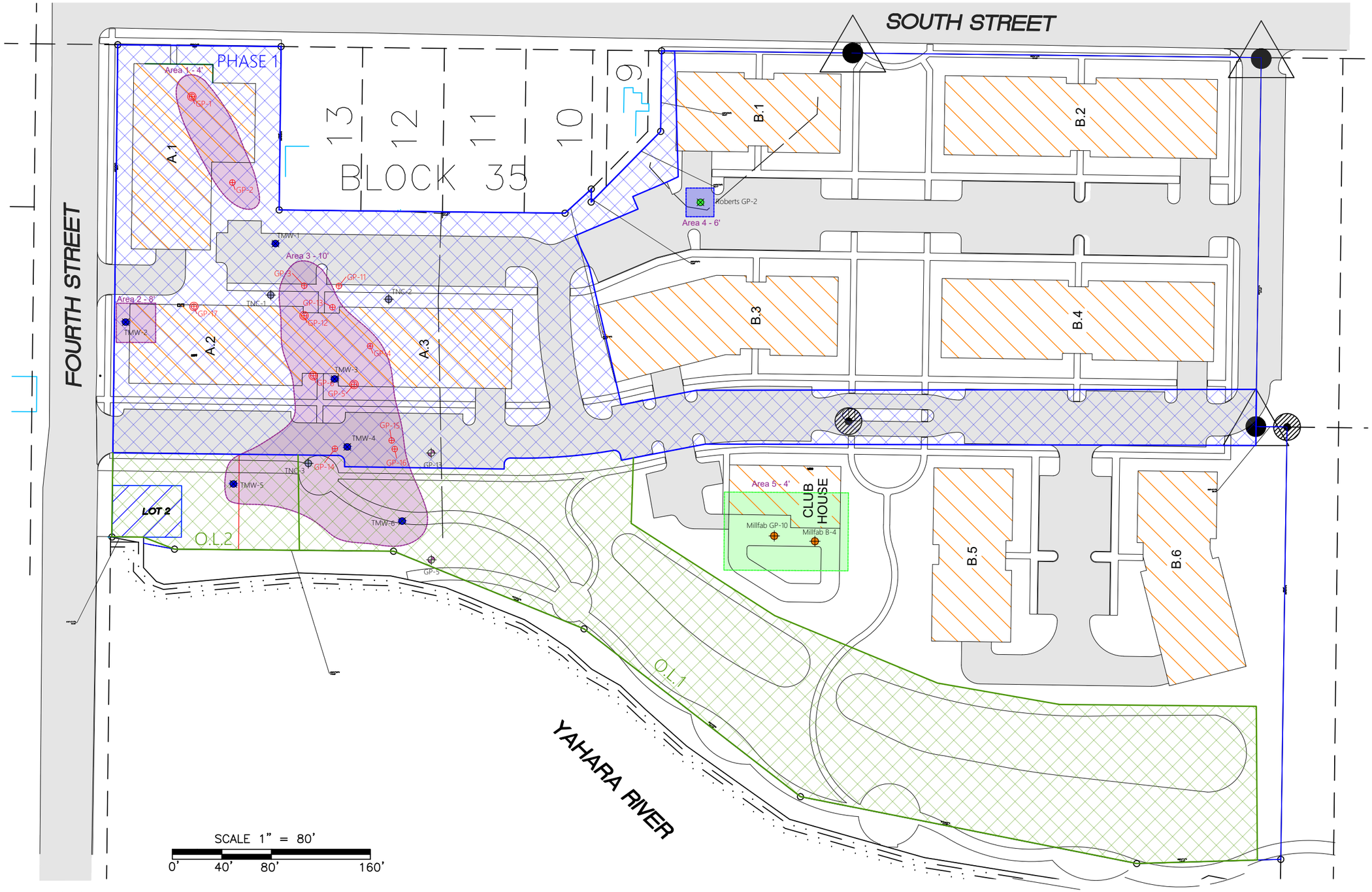

PHASE I DEVELOPMENT & REMEDIAL ACTION AREAS

TRUE NORTH CONSULTANTS
525 Junction Road, Suite 1900
Madison, Wisconsin 53717

Site Location: STOUGHTON PUBLIC WORKS GARAGE
501 & 515 SOUTH 4TH STREET
STOUGHTON, WI 53589

Client: CITY OF STOUGHTON
207 S FORREST STREET
STOUGHTON, WI 53589

Figure: S-1.1

Project Number: T220051

Date: APRIL 2021

LEGEND

- EXISTING BUILDING
- PROPOSED BUILDING
- IRON STAKE FOUND
- SURVEY NAIL FOUND 7/8" X 24" REBAR 2.04 LBS/FT PLACED
- PROPOSED CLEAN-UP OBJECTIVE OF 800 ug/kg OF ANY SINGLE PAH
- Millfab - PROPOSED CLEAN-UP OBJECTIVE OF 300 mg/kg OF TOTAL LEAD
- Roberts - PROPOSED CLEAN-UP OBJECTIVE OF 100 mg/kg OF TOTAL LEAD