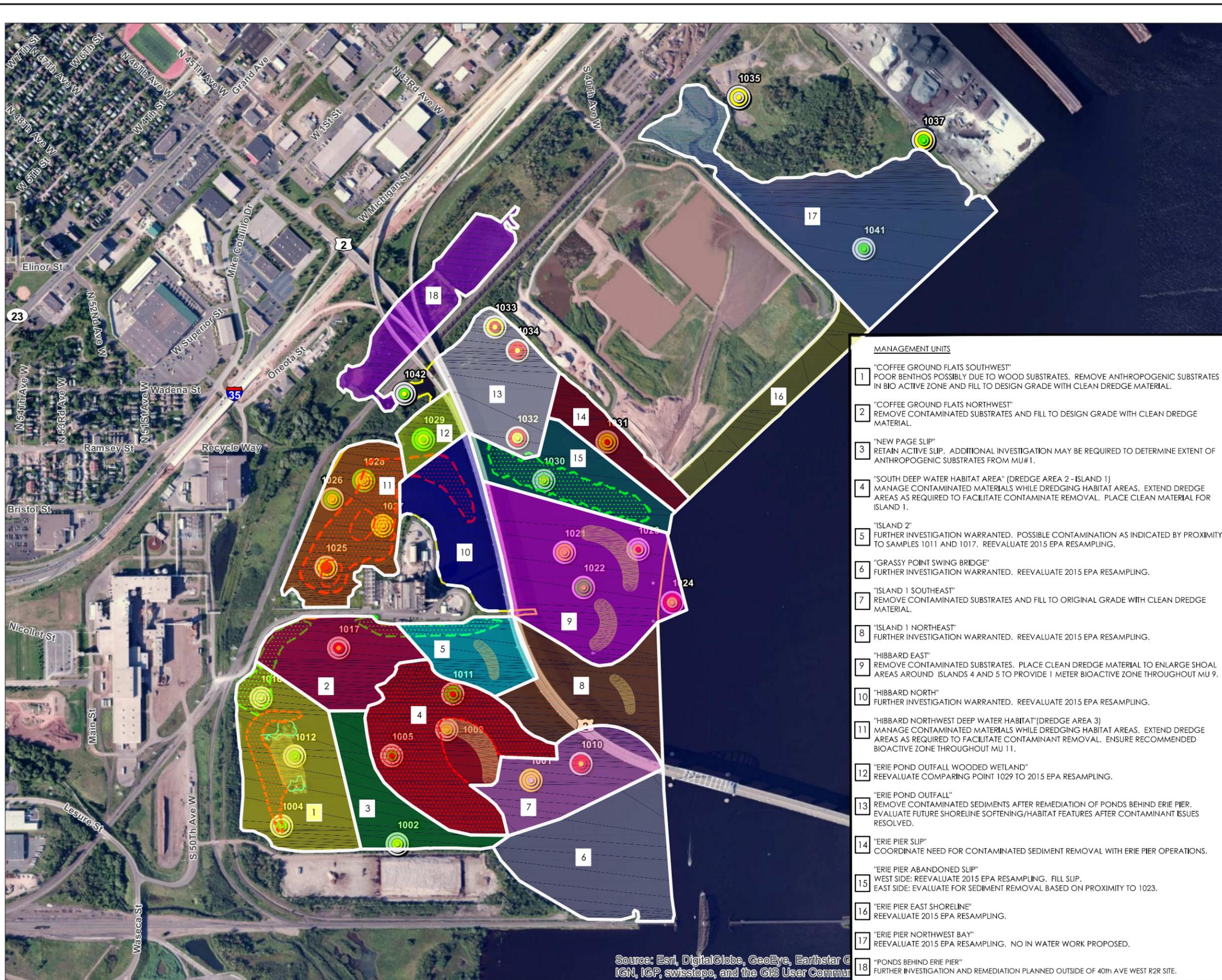


**FOCUSED FEASIBILITY STUDY REPORT
FOR
40TH AVENUE PROJECT AREA
IN THE ST. LOUIS RIVER AREA OF CONCERN**

August 28, 2015

APPENDIX H. MANAGEMENT UNIT MAP



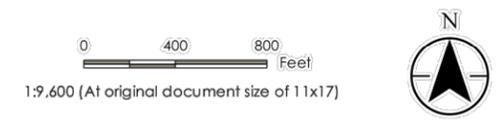
Source: Esri, DigitalGlobe, GeoEye, Earthstar ©
IGN, IGP, swisstopo, and the GIS User Commu

Figure No. **Appendix H - Figure 1**
 Title **Revised Management Units**

Client/Project
 U.S. Fish and Wildlife Service
 40th Avenue West Remediation to Restoration Project
 St. Louis River Estuary

Project Location
 T49N, R14W, S07, 08; 17; 18
 C. of Duluth, St. Louis Co., MN

193702726
 Prepared by MCP on 2014-11-21
 Technical Review by XXX on 2014-XX-XX
 Independent Review by XXX on 2014-XX-XX



- Legend**
- Management Units
 - Island Or Shoal
 - Fill Area
 - Cut Area

- MANAGEMENT UNITS**
- 1 "COFFEE GROUND FLATS SOUTHWEST"
POOR BENTHOS POSSIBLY DUE TO WOOD SUBSTRATES. REMOVE ANTHROPOGENIC SUBSTRATES IN BIO ACTIVE ZONE AND FILL TO DESIGN GRADE WITH CLEAN DREDGE MATERIAL.
 - 2 "COFFEE GROUND FLATS NORTHWEST"
REMOVE CONTAMINATED SUBSTRATES AND FILL TO DESIGN GRADE WITH CLEAN DREDGE MATERIAL.
 - 3 "NEW PAGE SLIP"
RETAIN ACTIVE SLIP. ADDITIONAL INVESTIGATION MAY BE REQUIRED TO DETERMINE EXTENT OF ANTHROPOGENIC SUBSTRATES FROM MU# 1.
 - 4 "SOUTH DEEP WATER HABITAT AREA" (DREDGE AREA 2 - ISLAND 1)
MANAGE CONTAMINATED MATERIALS WHILE DREDGING HABITAT AREAS. EXTEND DREDGE AREAS AS REQUIRED TO FACILITATE CONTAMINATE REMOVAL. PLACE CLEAN MATERIAL FOR ISLAND 1.
 - 5 "ISLAND 2"
FURTHER INVESTIGATION WARRANTED. POSSIBLE CONTAMINATION AS INDICATED BY PROXIMITY TO SAMPLES 1011 AND 1017. REEVALUATE 2015 EPA RESAMPLING.
 - 6 "GRASSY POINT SWING BRIDGE"
FURTHER INVESTIGATION WARRANTED. REEVALUATE 2015 EPA RESAMPLING.
 - 7 "ISLAND 1 SOUTHEAST"
REMOVE CONTAMINATED SUBSTRATES AND FILL TO ORIGINAL GRADE WITH CLEAN DREDGE MATERIAL.
 - 8 "ISLAND 1 NORTHEAST"
FURTHER INVESTIGATION WARRANTED. REEVALUATE 2015 EPA RESAMPLING.
 - 9 "HIBBARD EAST"
REMOVE CONTAMINATED SUBSTRATES. PLACE CLEAN DREDGE MATERIAL TO ENLARGE SHOAL AREAS AROUND ISLANDS 4 AND 5 TO PROVIDE 1 METER BIOACTIVE ZONE THROUGHOUT MU 9.
 - 10 "HIBBARD NORTH"
FURTHER INVESTIGATION WARRANTED. REEVALUATE 2015 EPA RESAMPLING.
 - 11 "HIBBARD NORTHWEST DEEP WATER HABITAT"(DREDGE AREA 3)
MANAGE CONTAMINATED MATERIALS WHILE DREDGING HABITAT AREAS. EXTEND DREDGE AREAS AS REQUIRED TO FACILITATE CONTAMINANT REMOVAL. ENSURE RECOMMENDED BIOACTIVE ZONE THROUGHOUT MU 11.
 - 12 "ERIE POND OUTFALL WOODDED WETLAND"
REEVALUATE COMPARING POINT 1029 TO 2015 EPA RESAMPLING.
 - 13 "ERIE POND OUTFALL"
REMOVE CONTAMINATED SEDIMENTS AFTER REMEDIATION OF PONDS BEHIND ERIE PIER. EVALUATE FUTURE SHORELINE SOFTENING/HABITAT FEATURES AFTER CONTAMINANT ISSUES RESOLVED.
 - 14 "ERIE PIER SLIP"
COORDINATE NEED FOR CONTAMINATED SEDIMENT REMOVAL WITH ERIE PIER OPERATIONS.
 - 15 "ERIE PIER ABANDONED SLIP"
WEST SIDE: REEVALUATE 2015 EPA RESAMPLING. FILL SLIP.
EAST SIDE: EVALUATE FOR SEDIMENT REMOVAL BASED ON PROXIMITY TO 1023.
 - 16 "ERIE PIER EAST SHORELINE"
REEVALUATE 2015 EPA RESAMPLING.
 - 17 "ERIE PIER NORTHWEST BAY"
REEVALUATE 2015 EPA RESAMPLING. NO IN WATER WORK PROPOSED.
 - 18 "PONDS BEHIND ERIE PIER"
FURTHER INVESTIGATION AND REMEDIATION PLANNED OUTSIDE OF 40TH AVE WEST R2R SITE.



- Notes**
1. Coordinate System: NAD83 MN State Plane North
 2. Data Sources Include: Stantec
 3. Orthophotography: Esri



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