ENVIRONMENTAL ASSESSMENT WORKSHEET

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's website at:

<u>http://www.eqb.state.mn.us/EnvRevGuidanceDocuments.htm</u>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item, or can be addresses collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation and the need for an EIS.

1. Project title: Stewart Creek Bank Stabilization

2.	Propo	ser:
	1 1000	

Contact person: Chris Kleist Title: Program Coordinator

Address: 411 West First Street Rm 211 City, State, ZIP: Duluth, MN 55802

Phone: 218-730-4063 Fax: 218-730-5907

Email: ckleist@duluthmn.gov

3. RGU

Contact person: Charles Froseth Title: Land Use Supervisor

Address: 411 West First Street Rm 208 City, State, ZIP: Duluth, MN 55802

Phone: 218-730-5325 Fax: 218-730-5907

Email: cfroseth@duluthmn.gov

4. Reason for EAW Preparation: (check one)

Required:	<u>Discretionary:</u>
☐ EIS Scoping	☐ Citizen petition
x□ Mandatory EAW	☐ RGU discretion
	☐ Proposer initiated

If EAW or EIS is mandatory give EQB rule category subpart number(s) and name(s):

State Statute 4410.4300 Subp. 26. Stream Diversion.

5. Project Location:

County: St Louis

City/Township: Duluth, MN

PLS Location (1/4, 1/4, Section, Township, Range): (S27 T49N R15W)

Watershed (81 major watershed scale): St. Louis River GPS Coordinates: 46°42'05.99"N 92°13'05.19"W

Tax Parcel Number(s): 010-4060-00350

010-4060-00350 010-4060-00360 010-4060-00390 010-4060-00500 010-4060-00530 010-4060-00560 010-4060-00580 010-4060-00590

At a minimum attach each of the following to the EAW:

- County map showing the general location of the project;
- U.S. Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries (photocopy acceptable); and
- Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.

See attached Figures

6. Project Description:

a. Provide the brief project summary to be published in the *EQB Monitor*, (approximately 50 words).

This project will stabilize stream banks and restore the channel of Stewart Creek damaged by the 2012 flood. The City of Duluth and South St. Louis Soil and Water Conservation District will restore 588' of stream channel to a natural pool and riffle state and remove debris upstream of a culvert.

b. Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion include a description of the existing facility. Emphasize: 1) construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes, 2) modifications to existing equipment or industrial processes, 3) significant demolition, removal or remodeling of existing structures, and 4) timing and duration of construction activities.

This project is to stabilize eroded streambanks along Stewart Creek that were washed out during the June 2012 flood. See Figures 4 & 5 attached for images. Natural vegetation and appropriate sideslope grading will be used wherever possible. A more open and natural floodplain will be established above bank-full width. The stream will be realigned away from steep sensitive streambanks and a larger floodplain will be established. Please refer to Figure 2 for exact location of realignment.

Construction methods will include slope grading and stabilization using earthwork machinery, with as little work as possible done from within the actual streambed. Material removal will be completed by hand or my using small machinery. Vegetation will include hand planting of live stakes to minimize disturbance of the shoreland area.

There are no additional infrastructure needs, and no existing infrastructure will be changed as a result of this project.

Some minor debris removal of woody material that could be easily mobilized in future high flows will occur in the lower section of this project.

Construction timing will occur during the DNR's work-in-waters timeframe; between July 1 and October 1. Actual construction time is expected to be about two weeks.

c. Project magnitude:

Total Project Acreage	1.16
Linear project length	588°
Number and type of residential units	N/A
Commercial building area (in square feet)	N/A
Industrial building area (in square feet)	N/A
Institutional building area (in square feet)	N/A
Other uses – specify (in square feet)	N/A
Structure height(s)	N/A

d. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

Some parts of the City of Duluth's storm sewer and stream infrastructure sustained major damage during the June 2012 flood. While some sections of the system held together remarkably well, many areas were damaged or destroyed and required extensive repair.

In cases such as this site on Stewart Creek, the upstream washout of the DWP trail deposited a large volume of rock and debris in the stream channel immediately downstream. This material changed the course of the stream, pushing it against exposed and highly-erodible streambanks. See Figures 4 & 5 for images of the bank washouts. This project proposes to re-create the stream channel near its original location, stabilize sections of streambank that were damaged, and remove some debris as needed.

The project will be carried out by a partnership between the City of Duluth and the South St Louis Soil and Water Conservation District. Benefitting parties are the City of Duluth, the State of Minnesota, and private landowners in the neighborhood.

e.	Are future stages of this development including development on any other property planned or
	likely to happen? \square Yes $x\square$ No
	If yes, briefly describe future stages, relationship to present project, timeline and plans for
	environmental review.

This project is proposed as a single-phase repair/restoration.

f. Is this project a subsequent stage of an earlier project? \Box Yes $x\Box$ No If yes, briefly describe the past development, timeline and any past environmental review.

N/A

7. Cover types: Estimate the acreage of the site with each of the following cover types before and after development:

	Before	After		Before	After
	-			3 1	
Wetlands	0	0	Lawn/landscaping	0.1	0.1
Deep	0.1	0.1	Impervious	0	0
water/streams			surface		
Wooded/forest	0.96	0.96	Stormwater Pond	0	0
Brush/Grassland	0	0	Other (describe)		
Cropland	0	0			
	N.		TOTAL	1.16	1.16

8. Permits and approvals required: List all known local, state and federal permits, approvals, certifications and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure. All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules, Chapter 4410.3100.

Unit of government	Type of application	Status
MN Pollution Control Agency	Stormwater CA Permit	to be submitted
City of Duluth Planning	EAW	in-process
State of MN DNR	EAS Application	to be submitted
US Army Corps of Engineers & MnDNR	Water/Wetland Projects	to be submitted

^{*}Submitted to request coverage under the state Flood Damage Repair General Permit and under the federal Regional General Permit

Cumulative potential effects may be considered and addressed in response to individual EAW Item Nos. 9-18, or the RGU can address all cumulative potential effects in response to EAW Item No. 19. If addressing cumulative effect under individual items, make sure to include information requested in EAW Item No. 19

9. Land use:

- a. Describe:
 - i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, prime or unique farmlands.

The current land use is public, undeveloped and forested. The public land adjoins several parcels of residential property.

Plans. Describe planned land use as identified in comprehensive plan (if available) and any other applicable plan for land use, water, or resources management by a local, regional, state, or federal agency.

The property is zoned R-1 and the future land use is designated as preservation.

ii. Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.

Stewart Creek is a Minnesota Department of Natural Resources designated trout stream. The land is considered to be in the Cold Water shoreland.

Definition of a Coldwater river: Rivers including trout streams and their tributaries.

b. Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.

The project will improve the overall health of this trout stream, reduce the likelihood of streambank washouts of this magnitude in the future, reduce impact on downstream infrastructure, and improve the aquatic habitat of this trout stream. This project is compatible with the City's Unified Development Code (UDC) zoning.

The land is zoned R-1 (Traditional Residential). Purpose: An R-1 district is established to accommodate traditional neighborhoods of single-family detached residences, duplexes and townhouses on moderately sized lots. This district is intended to be used primarily in established neighborhoods. Many of the dimensional standards in this district require development and redevelopment to be consistent with development patterns, building scale, and building location of nearby areas.

Future land use is preservation.

c. Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.

N/A

10. Geology, soils and topography/land forms:

a. Geology - Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.

No known geologic hazards are present in this area. Depth to bedrock varies across the site, but is generally shallow.

b. Soils and topography - Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability or other soils limitations, such as steep slopes, highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading.

44.6% Urban land-Amnicon-Rock outcrop complex, 0 to 18 percent slopes 55.4% Ahmeek-Rock outcrop Fluaquents, frequently flooded, complex, 0 to 50 percent slopes

c. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.

This project will enhance surface and groundwater connectivity by slowing the flow of the water through a natural pool and riffle system. Soil loss will be lessened by the improved streambank and riparian vegetation and an adequate floodplain bench.

NOTE: For silica sand projects, the EAW must include a hydrogeologic investigation assessing the potential groundwater and surface water effects and geologic conditions that could create an increased risk of potentially significant effects on groundwater and surface water. Descriptions of water resources and potential effects from the project in EAW Item 11 must be consistent with the geology, soils and topography/land forms and potential effects described in EAW Item 10.

11. Water resources:

- a. Describe surface water and groundwater features on or near the site in a.i. and a.ii. below.
 - i. Surface water lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within 1 mile of the project. Include DNR Public Waters Inventory number(s), if any.

Stewart Creek is a Minnesota Department of Natural Resources designated trout stream that flows through the site and is the focal point of this project.

Lake Superior is an Outstanding Resource Value Water (ORVW) and is about eight miles northeast of the project site.

ii. Groundwater – aquifers, springs, seeps. Include: 1) depth to groundwater; 2) if project is within a MDH wellhead protection area; 3) identification of any onsite and/or nearby wells, including unique numbers and well logs if available. If there are no wells known on site or nearby, explain the methodology used to determine this.

There are no wells located in or near this project area. Depth to groundwater varies across the site.

- b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects in Item b.i. through Item b.iv. below.
 - i. Wastewater For each of the following, describe the sources, quantities and composition of all sanitary, municipal/domestic and industrial wastewater produced or treated at the site.
 - 1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.
 - 2) If the wastewater discharge is to a subsurface sewage treatment systems (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.
 - 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods and identify discharge points and proposed effluent limitations to mitigate impacts. Discuss any effects to surface or groundwater from wastewater discharges.

No wastewater will be produced or discharged in the area.

ii. Stormwater - Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control or stabilization measures to address soil limitations during and after project construction.

Since the amount of impervious will not change, we do not anticipate the volume of stormwater produced to change. However, since a natural channel will be re-established in the area and riparian vegetation restored we anticipate that overland flow will receive some more natural filtration than it currently does before it reaches Stewart Creek. Temporary sediment and erosion control BMPs will be employed during project construction as shown in detail on the engineering drawings and construction Stormwater Pollution Prevention Plan (SWPPP). Permanent controls rely primarily on establishing a healthy vegetative cover.

iii. Water appropriation - Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.

This project will not result in any water appropriation from Stewart creek, either during construction or permanently.

iv. Surface Waters

a) Wetlands - Describe any anticipated physical effects or alterations to wetland features such as draining, filling, permanent inundation, dredging and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed, and identify those probable locations.

No wetland features will be altered by this project. The location of the material staging, laydown and excess soil stockpile area will be outside of the riparian zone and 100 year floodplain. Per plans, the contractor must install silt fence around the area after the exact in-field location is approved by the project engineer.

b) Other surface waters- Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.

This project proposes to re-establish a natural stream channel and stabilize streambanks that were severely damaged during the June 2012 flood. See images in Figures 4 & 5. The natural stream channel is only a few feet wide, extremely shallow and rocky, and any watercraft access is virtually impossible under any flow condition.

During construction, flow in Stewart Creek will temporarily be diverted around the active project reach. A baseflow of up to ten cubic feet per second will be maintained within Stewart Creek downstream of the project reach using pumping or passive gravity flow to bypass the construction area. To accommodate in-stream construction activities, temporary water diversion sequencing will be used with energy dissipation measures on the downstream end of the diversion. The dewatering activity impact will be minimized by placing the inlet and outlets as close to active construction as possible.

12. Contamination/Hazardous Materials/Wastes:

a. Pre-project site conditions - Describe existing contamination or potential environmental hazards on or in close proximity to the project site such as soil or ground water contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.

N/A Hazardous contamination conditions do not exist.

b. Project related generation/storage of solid wastes - Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.

Any solid waste generated during construction will be carried off site and disposed of properly.

c. Project related use/storage of hazardous materials - Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spill or release of hazardous materials. Identify measures to avoid, minimize or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.

The only potential hazardous spill would be a small amount of vehicle fuel from motorized tools used during construction. Small capacity canisters will be used, and fueling will occur at least 100 feet from any body of water.

d. Project related generation/storage of hazardous wastes - Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize or mitigate adverse effects from the generation/storage of hazardous waste including source reduction and recycling.

N/A No hazardous materials will be generated by this project.

13. Fish, wildlife, plant communities, and sensitive ecological resources (rare features):

a. Describe fish and wildlife resources as well as habitats and vegetation on or in near the site.

Aquatic and riparian habitat on the site is fair and was worsened by the June 2012 flood. This project would have the multiple benefits including: stabilizing the existing exposed streambanks, moving the stream channel away from the banks and opening up a floodplain, improving the aquatic habitat and fish passage, improving riparian vegetation. Proposed channel modifications should greatly improve stream structure from a habitat standpoint including creation of more natural riffle-pool structures, addition of root wads along the bank, and vegetation to shade the stream.

Currently, vegetation in the project area consists of woody upland and lowland forest abutting private property with established turfgrass lawn and landscaping.

b. Describe rare features such as state-listed (endangered, threatened or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB ______) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe the results.

We are not aware of any rare features on the site. We have requested a natural heritage review from the Minnesota DNR. We anticipate the potential to encounter Blanding's turtles on the site and will ensure that contractors working on the project are able to identify and handle these rare creatures.

c. Discuss how the identified fish, wildlife, plant communities, rare features and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species. Fish, wildlife, and plant habitats will be improved by this project. All necessary precautions will be taken to avoid spreading invasive species.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

In-stream work will be done with close coordination with the Minnesota Department of Natural Resources (DNR) to avoid trout spawning impacts. No work will occur within restricted dates to protect the resident brook trout population.

In-stream work shall be completed with as little disturbance to the stream as possible. Stream diversion will be used for this purpose as described above in Part II.b.iv(b). Material stockpiles adjacent to the stream shall be stabilized per the project construction SWPPP. Sediment capturing devices shall be placed outside of the streambed to ensure continued fish passage during construction. Any necessary dewatering shall be minimized with the intake and outlet as close to the active work area as possible to lessen the area disturbed.

14. Historic properties:

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include: 1) historic designations, 2) known artifact areas, and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

N/A – No historic structures affected by this project.

15. Visual:

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

N/A Vistas and views will not be impacted by this project.

16. Air:

a. Stationary source emissions - Describe the type, sources, quantities and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health or applicable regulatory criteria. Include a discussion of any methods used assess the project's effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.

N/A

b. Vehicle emissions - Describe the effect of the project's traffic generation on air emissions. Discuss the project's vehicle-related emissions effect on air quality. Identify measures (e.g. traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.

Unnecessary construction vehicle idling will be minimized and controlled by on-site inspector. Hours of construction operation shall be limited to between 7am and 5pm.

c. Dust and odors - Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.

N/A Dust and odors will be minimal and incidental.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area, 2) nearby sensitive receptors, 3) conformance to state noise standards, and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Vehicle noise will be controlled as much as possible. All vehicles shall meet noise and emission standards.

18. Transportation

a. Describe traffic-related aspects of project construction and operation. Include: 1) existing and proposed additional parking spaces, 2) estimated total average daily traffic generated, 3) estimated maximum peak hour traffic generated and time of occurrence, 4) indicate source of trip generation rates used in the estimates, and 5) availability of transit and/or other alternative transportation modes.

No additional parking spaces shall be created; no impacts on traffic are expected.

b. Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW. Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: http://www.dot.state.mn.us/accessmanagement/resources.html) or a similar local guidance,

N/A

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

N/A

- 19. Cumulative potential effects: (Preparers can leave this item blank if cumulative potential effects are addressed under the applicable EAW Items)
 - a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.
 - b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.
 - c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.
- **20.** Other potential environmental effects: If the project may cause any additional environmental effects not addressed by items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

RGU CERTIFICATION. (The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.)

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively.

• Copies of this EAW are being sent to the entire EQB distribution list.

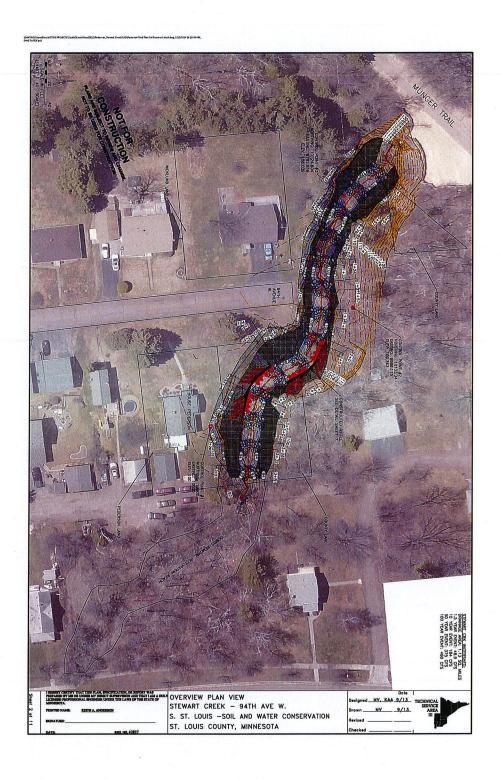
Signature Date MAPCO 10, 2014

Title

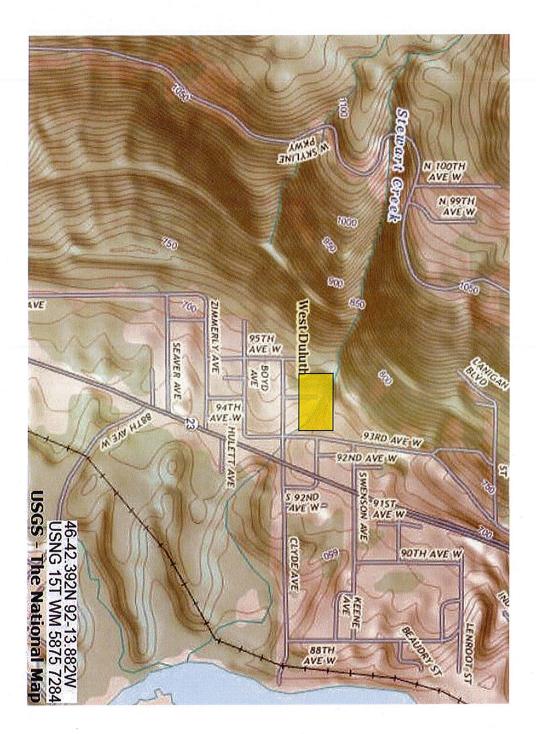
Project Location Map Stewart Creek Bank Stabilization Figure 1



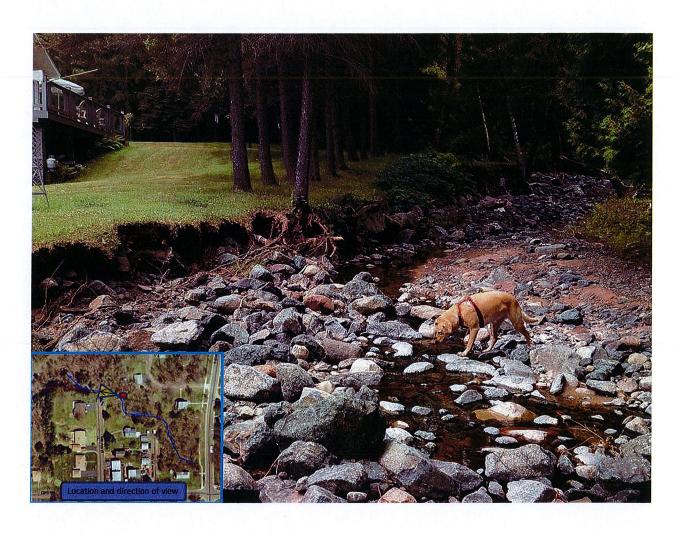
<u>Project Location Map</u> Stewart Creek Bank Stabilization Figure 2



Project Location MapStewart Creek Bank Stabilization
Figure 3



Project Location Image Stewart Creek Bank Stabilization Figure 4



View from mid-project looking upstream

<u>Project Location Image</u> Stewart Creek Bank Stabilization Figure 5



View from the upper project area looking downstream