



520 Lafayette Road North  
St. Paul, MN 55155-4194

# Implementation Grants for Stormwater Resilience

Application  
FY 2024

Doc Type: Grant Application

**Instructions:** Read the complete *Request for Proposal (RFP)* and other associated documents before submitting this application. Section 1, Project information affects project eligibility. Unanswered questions may result in disqualification.

Check the [SWIFT Supplier Portal](#) and the Minnesota Pollution Control Agency (MPCA) [Implementation Grants for Stormwater Resilience](#) webpage for the most recent updates.

**Applications are due no later than 4:00 p.m. Central Standard Time (CST) on Thursday, April 11, 2023.**

**Submit application, workplan and budget** (as Microsoft Word and Excel documents) per the instructions listed in Section 7 and 8 of the RFP.

## 1. Project information

Organization name: City of Duluth

Organization address: 411 West First St

City: Duluth State: MN Zip code: 55802 County: St. Louis

Contact name: Ryan Granlund Title: Utility Programs Coordinator

Phone: 218-730-4088 Email address: rgranlund@duluthmn.gov

- Organization type:
- Tribal government
  - Local/Regional government (plus select one below)
    - City
    - County
    - Town/Township
    - Soil and Water Conservation District
    - Water Management Organization
    - Watershed District
    - Regional Development Commission
    - Metropolitan Planning Organization

Grant requested: \$4,990,906.48 + Matching funds: \$ 1,127,267.44 = Total project cost: \$ 6,118,173.92

<b>Project Title:</b> Palm Street Permanent Stormwater Management System		
	<b>Yes</b>	<b>No</b>
1. Is applicant the sole source of matching funds for this project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If no, explain:		

Exhibit B

		Yes	No
2.	Is applicant in compliance with Minnesota's tax and environmental regulatory requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<b>If no, explain:</b>		
3.	Does the proposed project consist of new or upgraded green and/or gray infrastructure intended to address water quantity issues, reduce the risk of localized flooding, and <b>increase resilience</b> to the impacts of Minnesota's changing climate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.	Will project follow all applicable local, state, and federal rules and obtain all necessary permits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	List permits or other approvals necessary for this project, including wetland permits as applicable, and note whether they have been secured or are anticipated:  <i>MPCA CSW Permit, Wetland Permit, Wetland Delineation, City of Duluth Erosion and Sediment Control and Shorelands Permits, FEMA Letter of Map Revision to be completed in conjunction with project</i>		
5.	Is the applicant the current landowner?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	If no, attach a letter that includes permission, interest, and commitment from the property owner for the work being completed on the property. A signature from the individual who has the power to grant permission for the proposed activities is required on the letter.  Ultimate project ownership (check one of the following): <input type="checkbox"/> On public land within applicant boundaries <input type="checkbox"/> On private property within applicant boundaries <input type="checkbox"/> Other (explain):		
6.	Will an organization involved in the project be responsible for long-term annual operation and maintenance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	If yes, what organization/department: <i>City of Duluth Public Works and Utilities</i> <b>If no, explain:</b>		
7.	Has the applicant attached:	<b>Yes</b>	<b>No</b>
	a. plans and specifications including:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> Site plans <input checked="" type="checkbox"/> Technical drawings/cross sections <input type="checkbox"/> Soil borings and/or soil infiltration testing results (if applicable) <input checked="" type="checkbox"/> Stormwater management calculations and/or model outputs		
	b. budget (including engineer's estimate of cost and non-construction costs)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	c. climate vulnerability assessments (or equivalent planning document) identifying the need for proposed project, and if applicable, feasibility study for proposed project	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	d. land use permission letter (if applicable)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	e. map (or maps) showing:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/> Drainage area (acres) <input checked="" type="checkbox"/> Impervious area (acres) <input checked="" type="checkbox"/> Existing stormwater conveyance system (including green infrastructure) <input checked="" type="checkbox"/> EJ areas- project area and the areas directly benefitting from the project <input checked="" type="checkbox"/> Structures/infrastructure protected (if applicable)		

## 2. Project details

---

1. Provide a brief narrative description of the project. Describe the identified need for this project and severity of the problem. Include project goal(s) and final deliverable(s). [limit of 500 words]:

*The proposed Palm Street Permanent Stormwater Management System project will enhance stormwater management in the Brewery Creek watershed and safeguard downstream stormwater infrastructure in Central Duluth. The project goals are to mitigate flooding and storm flows through enhanced storage and smart pond controls; improve the resiliency of downstream infrastructure against the escalating frequency and intensity of stormwater flows linked to climate change; improve maintenance, reduce adverse impacts on underserved communities; and ultimately safeguard Lake Superior.*

*This project is vital and long overdue for the City. The downstream Brewery Creek stormwater system, dating back to the 1880s, is composed of lengthy segments of blue stone and brick tunnels, making it one of Duluth's oldest systems. Its vulnerability to erosive stormwater flows is compounded by its location beneath private property, posing significant risks to the City's system, Lake Superior, and private properties in the Central and East Hillside communities—both designated as Environmental Justice communities.*

*Without upstream mitigation projects like the Palm Street Permanent Stormwater Management System, the downstream infrastructure remains vulnerable to damage. Repairs to the downstream tunnel system are exceptionally challenging and costly due to the heavily urbanized watershed and private property ownership, often adversely impacting the surrounding underserved communities.*

*Stormwater management within this watershed has been identified as crucial during the development of the 2023 Duluth Stormwater Management Plan, the Watershed Priority Matrix, and the Brewery Creek Tunnel assessments. This importance is underscored by observations of damaging flooding in 1972, 2012, and 2023, impacting Hillside communities. Efforts to store stormwater and attenuate flood flows serve as vital resilience improvements. Recent events in September 2023 resulted in damage to roads, sidewalks, utilities, homes, and businesses, temporarily closing the I-35 Interstate Tunnels, emergency services, and local streets due to surcharging of the Brewery Creek tunnel.*

*The project is enhancing its stormwater management infrastructure, focusing on reconstructing a stormwater sedimentation basin near Blackman Avenue and Palm Street. This initiative will replace an inadequate, undersized basin from the 1980s with a new, holistic system that increases storage capacity and integrates smart technology for improved functionality and performance.*

*Smart pond technology is a significant advancement in stormwater management, detaining stormwater to reduce peak flows during large storms and prevent flooding downstream. Smart controls optimize performance by managing water levels based on real-time data and weather forecasts. Improved maintenance practices, including a sediment forebay and maintenance vehicle access bench, will ensure long-term functionality and sustainability, preventing clogging and maximizing system effectiveness.*

*The construction and improvements will be a significant advancement in sustainable stormwater management, ensuring resilient, climate change-adapted infrastructure for Duluth. The project's substantial scope and funding request reflect its specific, unique, and urgent investment needs, promising substantial safety benefits for the surrounding community, along with the health of the watershed, and Lake Superior. The project will deliver detailed design, final plans, specifications, bidding, and construction administration and inspection services, ensuring that the Palm Street Permanent Stormwater Management System is constructed and implemented to meet the project goals.*

2. Identify the following:
- a. type of stormwater management practice: *Reconstruction of wet sediment basin, implementation of smart pond controls and improved maintenance design increase flood mitigation and stormwater treatment.*
  - b. expected resilience improvement(s) (include quantitative benefits such as storage volume added, inundation depth reduction, pipe capacity increase, rate control improvements etc): *Refer to the attached drainage report which summarizes the in-place condition as well as the improved stormwater performance for the current and forecasted conditions. By utilizing smart pond technology to dewater the pond in advance of forecasted storm events, the effective storage of the pond is increased by approximately 3.6 acre-feet. The drainage models for the proposed condition reflect a significant decrease in flow rates for storm events smaller than 1 inch and the 2-year event and modest reductions for larger events. These reductions allow the new stormwater system to capture and treat these events more effectively than the current basin design. The system's ability to retain entire storm events without discharge will enhance sedimentation, particularly benefiting smaller events with higher pollutant loads. Additionally, the system's reduced flow rates will lessen the need for downstream storm tunnel maintenance, benefiting a neighborhood with many residents below the poverty line. The climate resilience model indicates that the proposed system will also help mitigate future increased discharge rates for small, high-frequency storm events while continuing to remove pollutants, debris, and sediment.*
  - c. acres in drainage area: 362 acres
  - d. description of the watershed: *Brewery Creek starts in areas of historically undeveloped wetland areas and flows towards Lake Superior primarily in two reaches that confluence on Marshall School property located near Rice Lake Rd before descending down the hillside. Brewery Creek experiences high rates of runoff and the watershed is characterized by high ratios of impervious surface in the middle and lower reaches. The existing natural channels are highly erodible and while Brewery Creek is not a special or impaired water, it serves a significant importance as a primary natural drainage system in Duluth.*
  - e. description of current stormwater conveyance system (if existent) in the project area, including relevant existing green infrastructure: *The upgradient portions of Brewery Creek watershed is primarily ditch and culvert conveyance in a relatively dense neighborhood settings for this type of drainage infrastructure. The system transitions to an underground storm sewer that was built midcentury and drains urban area with high ratios of impervious. This portion of the system lack any effective stormwater management. Further downgradient the stormwater system transitions to the Brewery Creek Tunnels which are mostly large diameter, built in-place infrastructure constructed in a non-contiguous fashion between the early 1900s to present and is approximately 4,900ft in length. This portion is highly vulnerable to flood flows due to age and nature of construction.*
  - f. project alternatives considered: *Refer to attached drainage report. The drainage report summarizes and compares the pre-existing condition, no-build (no improvement) scenario of the current basin, and the proposed model (both current and projected for climate change effects). The model shows that the no-build alternative, while feasible does not meet any of the project goals of mitigating flooding, improving the resiliency of downstream infrastructure against the escalating frequency and intensity of stormwater flows linked to climate change, improving maintenance, reducing adverse impacts on underserved communities.*
3. Is the project intended to provide future climate resilience and reduce existing localized flooding? Or is it designed to address only future climate resilience?

*This project will provide climate resilience and reduce existing localized flooding. The attenuation of flood flows within the Palm St project location will reduce downgradient runoff rates. Brewery Creek Tunnel surcharged twice last September of 2023 when Duluth saw back to back localized heavy rain events two weeks apart. The City of Duluth is projected to see a 20% increase in precipitation depth on average using mid to late century emissions scenarios. The new system's ability to retain stormwater reduces peak flows during these expected increases in large storm events, preventing surcharging of the downgradient system. Improved maintenance practices ensure the long-term functionality and sustainability and provides on-going benefits*

4. Number of structures and infrastructure that will be protected (i.e., reduced flood risk) by the proposed project:
- Number and type of residential structures (e.g., single family, small multifamily, large multifamily): *672 residential properties comprised of a mix of single family residential, to large multifamily residential properties. Additionally, there are 5 qualified low-income rental properties within the zone positively impacted by this project.*
  - Number and type of commercial structures (e.g., small commercial, manufacturing facility, warehouse, etc.): *92 small commercial parcels are within project impact area, which includes one grocery store whose property is situated over the existing Brewery Creek Tunnel. This grocery store also serves as the only accessible grocery store for much of the adjacent neighborhoods.*
  - Number and type of public facilities: *80 parcels are identified as containing public facilities, most of which are schools or places of worship. The Marshall School property is not a public facility, but is a vital educational intuition for Duluth. Brewery Creek flows through Marshall School property and is one of the remaining natural stream channels within the urban limits of the creek corridor. This section serves as the classroom for daily school-forest activities and is an important asset for school programming. The natural channel and surrounding school ski trails were impacted heavily in September 2023 by flood flows. Additionally, Myers-Wilkins Elementary is protected by the project as many of the primary access points for both vehicle and pedestrian traffic cross the Brewery Creek Tunnel system.*
  - Number and type of critical infrastructure: *The Essentia Health campus is within this watershed and downgradient of the proposed project. There are 22 parcels within this campus, which remains a vital asset to Northern Minnesota and Duluth alike. 6<sup>th</sup> Avenue East is a primary access corridor to Essentia Health, St. Luke's Campus along with jobs and services in downtown Duluth. Brewery Creek tunnel runs parallel with and under 6<sup>th</sup> Avenue East for approximately 900 ft. The importance of protecting this infrastructure cannot be overstated.*
  - In what ways will the project improve public safety (alleviate flooded roads/intersections, protect bridges from failure due to heavy rain events, etc)? *The project will protect downgradient properties and infrastructure by providing flood storage within the watershed and reducing hydraulic stress on the vulnerable Brewery Creek Tunnel. This project is the first meaningful step to reduce runoff rate and volume towards the downgradient tunnel and neighborhoods, which will alleviate surcharging events at 7<sup>th</sup> Avenue East 3<sup>rd</sup> St Alley and potential failure at vulnerable sections of the tunnel. The Brewery Creek tunnel has failed and surcharged in past flood events, causing transportation disruptions along emergency/hospital routes and damage to properties both public and private.*
  - Is there potential for negative downstream impacts? How was this determined? *A drainage report was prepared by LHB Engineering Consultants, which details downstream rate control metrics. This was determined using HydroCAD hydraulic modeling software. These outputs show a decrease in runoff rate downgradient which will provide a downstream benefit.*
5. Describe how resilience to climate change was accounted for in project design. How were projected precipitation events used to size the proposed project (e.g., does the project consider future precipitation, including projected scenarios for climate change at end of estimated project life)? To what extent will the project reduce predicted frequency of localized flooding? Attach any relevant model outputs or vulnerability assessments. [limit of 400 words]:

*Substantial stormwater management within this watershed is a priority based on the 2023 Duluth Stormwater Management Plan (funded by the MPCA Planning Grants for Community Stormwater Resilience), Strategy 5 of the Duluth Climate Action Work Plan, Brewery Creek Tunnel assessments, and observations of previous flood damage. With MPCA partnership on implementation of this project, it becomes a financially feasible action towards addressing resiliency actions associated with the [Climate Action Workplan, including Goal 2.4](#) to “develop a stormwater management plan that integrates resilience”. In particular, this project achieves the sub-goals of 2.4 by a) prioritizing improvements in high-risk neighborhoods with vulnerable populations and b) reducing stormwater runoff flow and volume.*

*City of Duluth consulted with LHB Engineering to provide a drainage report detailing the anticipated rate reductions the project could reasonable achieve, using current Atlas-14 precipitation depth tables and an anticipated 20% increase in precipitation. The 20% increase was identified as a most feasible increase for the Duluth region, considering UMN data for middle and end of century moderate and high emissions scenarios during the development of the Plan.*

*One particularly notable feature of this system is the Smart Pond controls that will be integrated into the design. This will allow City of Duluth Public Works and Utilities to adjust to conditions and make future modifications to the operation of the stormwater management system. This type of system is leading edge and will put Duluth in the position to manage increased precipitation events with up to date technology well into the future as rates of precipitation change from periods of drought to periods of flooding.*

- a. *Design storm: This project provides for significant attenuation of the 1-year and 2-year events, and moderate attenuation at higher flow events. This is a step towards flood attenuation in the watershed and will be the first of a number of projects for rate and flood control. This project serves as the first substantial improvement to stormwater management within this watershed.*
  - b. *Climate projection methodology: UMN Atlas-14 Considering Down-Scaled Climate Projections and current Atlas-14 tables*
  - c. *Proposed infrastructure lifespan: 50 years, middle to end of century*
6. Using the [MPCA's criteria and interactive mapping tool](#) (recently updated on the MPCA website), will the proposed project or the direct benefit from the project be located in one or more MPCA identified environmental justice (EJ) areas of concern? Yes No

If yes:

- a. On a map, show the project location and the area directly benefitting from the project within an EJ area(s).

- b. Were EJ communities consulted during planning? Yes No

*If yes, describe; if no, explain why not: The City's engagement with these communities has been ongoing and urgent, particularly in the wake of the recent and significant storm events that have caused damage and burdens within these communities. This project is a direct response to those past events, aiming to provide a more robust, holistic system that can prevent such damage and negative impacts in the future. Additionally, the City of Duluth is actively engaged with Hillside community advocates and organizations around stormwater resilience among other topics that help uplift community access and equitability.*

- c. Is the project primarily intended to serve EJ communities? Yes No

*If yes, how will these communities be kept informed of construction progress, etc.?*

*Community impacts will remain relatively low considering the scale, nature and location of the project. None-the-less City of Duluth Engineering staff will inform adjacent property owners and residents of construction schedules and environmental or access interruptions surrounding the work area. The primary impacts will consist of service disruptions to a back-frontage road for businesses along the Central Entrance Corridor. Efforts will be made to stage construction and maintain primary access to reduce potential service disruptions.*

*The City of Duluth will also actively engage with downgradient community members and organizations to spread awareness and education regarding the project outcomes to provide stormwater resilience within the watershed. The City will accomplish this through partnerships with established community advocates and organizations (including the Zeitgeist Center for Arts and Community, see letter of support). Additionally, staff will inform Marshall School of any anticipated downstream interruptions or nuisance conditions created by the construction of the project given the significance of the stream to their student programing.*

7. Describe any co-benefits of the project:

- a. *storage and reuse/drought protection: The smart pond controls allow for the option to release attenuated flows at periods of drought to help maintain downstream hydrology. By utilizing these smart controls, the pond can regulate its outflow based on real-time data, such as water levels, weather forecasts, and drought conditions. This*

*ensures that water is released in a controlled and sustainable manner, helping to mitigate the impacts of drought while also maximizing the pond's capacity for flood control and water quality improvement.*

- b. *infiltration: Duluth is characterized by clay soils, bedrock, and steep topography leading to Lake Superior. Due to these geological features, groundwater recharge and infiltration are not, for the most part, primary focuses of stormwater projects in the Duluth area. Instead, stormwater management efforts are more appropriately targeted toward managing peak flow through volume capture and detention, reducing flows and velocities, and mitigating flooding as the proposed project intends.*
  - c. *groundwater recharge: Duluth is characterized by clay soils, bedrock, and steep topography leading to Lake Superior. Due to these geological features, groundwater recharge and infiltration are not, for the most part, primary focuses of stormwater projects in the Duluth area. Instead, stormwater management efforts are more appropriately targeted toward managing peak flow through volume capture and detention, reducing flows and velocities, and mitigating flooding as the proposed project intends.*
  - d. *new community amenity: The project will replace outdated infrastructure with a modern, efficient system. This upgrade not only improves the functionality of the stormwater management system but also enhances the aesthetic appeal of the surrounding area. To further emphasize this amenity benefit, the City plans to showcase the project on its website. This will provide an opportunity for education and awareness regarding the importance of ongoing improvements and maintenance to stormwater infrastructure. By highlighting the project's features and benefits, the City aims to engage the community in understanding and supporting efforts to protect water quality through innovative stormwater management practices.*
  - e. *pollutant treatment: The improvement is expected to provide significant attenuation of water quality for both the 1-inch and 2-year storm events which are the primary pollutant generating events associated with total suspended solids (TSS), phosphorous, and other stormwater pollutants. The system is expected to achieve normal removal efficiencies of around 80% for TSS, 20%-60% for phosphorus, and varying levels for other pollutants, debris. By effectively capturing and treating stormwater runoff, the project will help reduce the amount of pollutants entering water bodies, ultimately improving water quality and enhancing the overall health of the watershed.*
  - f. *impervious surface/heat island reduction: Where practical, the project will place vegetation around the edges or within the system itself. This vegetation can help absorb sunlight, reducing the amount of heat absorbed by the surrounding area and providing some cooling effect. The presence of water in the system can lead to evaporation, which can have a cooling effect on the immediate area.*
  - g. *increased tree canopy: The City will look to integrate plantings and trees that provide canopy and shade cover at the perimeter of the system, along the creek, as well as along the streets affected by construction.*
8. Provide quantitative justification of how the project is cost-effective, as applicable:
- a. *Will the project leverage other funding to provide a greater match (e.g., self funding, federal, nonprofit, or philanthropic grant)?: The project match is self-funded through the use of stormwater utility user fees and staff time as in-kind match.*
  - b. *Are future savings anticipated to result from the proposed project (describe how, and how much)?: Yes, future savings are anticipated from the proposed project. By reducing the potential for downstream damage to the Brewery Creek tunnel system, which dates from the 1880s and runs beneath private homes and property, the project is expected to prevent or defer prohibitively expensive repairs or replacements. These repairs often disproportionately fall on residents and property owners in Environmental Justice communities who can least afford them. By implementing this project, the city aims to avoid these costly repairs and the associated financial burdens on the community.*
  - c. *Will funding be used for water quantity project costs (e.g., stormwater pipe upsizing) paired with concurrent stormwater/drinking water/ wastewater project(s) receiving SRF funding where climate resiliency costs are ineligible? If applicable, describe: Not at this time but the City is actively looking for opportunities to better manage and provide for water quantity controls and BMPs in the watershed (see response to question d, below).*
  - d. *Will project be paired with concurrent Capital Improvement Project to include resilient stormwater improvements? If applicable, describe: Yes, the project will be paired with a concurrent Capital Improvement*

*Project. MnDOT has a currently planned major reconstruction of the Central Entrance Corridor (S.P. 6933-99), which directly discharges to the proposed stormwater system. The City has met and is actively partnering with MnDOT to manage stormwater associated with the project, and this Palm Street Permanent Stormwater Management System project was discussed as one such opportunity. Again, the need for this project is urgent, as MnDOT's planned project is currently in design. Ideally, the stormwater project would be completed before MnDOT's project goes to construction to ensure that both projects are effectively integrated and that stormwater management is optimized.*

- e. *Other: The project aims to improve existing infrastructure through retrofit. This provides significant cost savings due to reduced burden of construction site work, excavation and land or right-of-way acquisition.*
9. How old is the relevant existing infrastructure that is being repaired, replaced, or supplemented (if applicable)? Is it beyond its expected lifespan? Is the project a necessary upgrade or replacement of outdated and/or failing infrastructure?

*The existing Palm St Pond was built in 1986 as part of the construction of Central Entrance by MNDOT. The pond was turned over to the City of Duluth for ownership shortly after construction and has seen no significant improvements or retrofits to date. The system is nearly 40 years in age and was not designed to mitigate current or future weather events.*

10. Describe the estimated timeline for this project and what the applicant has done to ensure the project is viable (e.g., overall— how ready is the project for construction, how complete are the plans, what planning, or site investigation work has been completed already, what else is needed before construction can begin, how long are those things anticipated to take, how much time is needed for completion of construction, etc.). Attach feasibility study if applicable.

*Design plans are 95% complete at time of application, subject to final refinement during the summer of 2024. Site investigation and survey is completed as part of the construction design phase. The previously identified permits and approvals will be secured after project award during 2024, prior to project start. A Letter of Map Revision will be completed in conjunction with the project to correct FEMA flood maps within the watershed. Wetland delineation will be performed during the growing season window in 2024. Soil borings will be completed in Summer of 2024. The process for permitting and approvals will be completed by March of 2025. A Request for Bid (RFB) will be advertised on the final project design. The successful bidder will be chosen in accordance with City of Duluth Purchasing Department policy. The project will be prepared to advertise, bid, and award as soon as 2025 or, at the latest, spring 2026. Construction will be completed over a 6-month period in the Spring/Summer following award. The project will be inspected full time by Duluth Engineering, and As-Built drawings will update City of Duluth utility mapping in Winter of 2025/2026 for accurate locating and maintenance planning for the built infrastructure.*

### 3. Experience and qualifications

1. List the individuals from your organization who will be involved in the proposed project, including their job titles and specific roles and qualifications:

**Brad Scott, Senior Engineer, Public Works and Utilities, Engineering Division, City of Duluth:**

Brad Scott, P.E., is a licensed engineer in Minnesota with over 25 years of experience in construction and engineering, specializing in site design, transportation, and utility projects. He is well-versed in all phases of project delivery, from initial scoping to final design and construction. Brad has a successful track record of managing complex, interdisciplinary projects, with demonstrated success in project management, agency coordination, and fostering effective stakeholder relationships.



**Jacob Oetterer, Senior Engineering Technician, Public Works and Utilities, Engineering Division, City of Duluth :**

Jacob Oetterer is the team's CADD designer. During construction he will be the project inspector. Jacob has an A.S. in engineering and has been an Engineering Technician for 14 years. His earlier years were spent with St. Louis County as a surveyor and bridge safety and construction inspector. Later, he joined Northland Consulting Engineers where his primary focus was designing using Autodesk's Civil 3D. His involvement there was heavy in roadway, utility, stormwater, and private development where his skills were honed in overcoming design obstacles and coordinating with various engineering disciplines. Some of Jacob's design projects include a 52-acre campus design for the City of Mora's school district, State Aid designs for the City of Silver Bay and the City of Hermantown, and many more various projects in size within Duluth and the surrounding area.

**Tom Johnson, Senior Engineer, Public Works and Utilities, Engineering Division, City of Duluth:** Tom's engineering focus is on the stormwater utility and his duties include FEMA flood plain management, permitting all stormwater management requirements for all development in the City and planning and implementing infrastructure projects. Tom will serve as the technical expert and will serve as a core member of the City of Duluth Engineering Team on this project. He brings 12 years of experience working on stormwater infrastructure in the City, including establishment of the City's stormwater utility. Before the City, he spent 10 years at LHB on stormwater design.

**Ryan Granlund, Utility Programs Coordinator, Public Works and Utilities, Engineering, City of Duluth:** Ryan's role offers critical knowledge in the administration and reporting needs of grant funded programs. Ryan will serve as the main contact for program related needs and will perform project and grant administration to ensure project success. He also brings 6 years of field knowledge in stormwater issues in the City, as he is the main liaison to all reported stormwater incidents and problems. He manages the City of Duluth Stormwater Permit, including heavy emphasis on all things related to stormwater pollution prevention, public engagement and utility resilience.

2. Will anyone outside your organization be responsible for work performed?  Yes  No

If yes, provide name of organization(s) and contact information, brief description of their relevant experience and qualifications related to the proposed project, and describe the role(s) of the outside organization(s) in the project: *The RFB process will result in the selection of a licensed and bonded contractor who retains the necessary experience and qualifications to perform work within the City of Duluth. The City of Duluth will hire a qualified Engineering consultant to complete tasks related to the Letter of Map Revision.*