Application

19831 - 2024 Unique Projects

20230 - Catalyzing a Wellness Corridor: Understanding the Technical Feasibility and Social and Economic Benefits of Connecting the Twin Cities Metro Region and Rochester with a Hyperloop

Regional Solicitation - Unique Projects

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Primary Contact

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What Grant Programs are you most interested in? Regional Solicitation - Unique Projects

Organization Information

Name: Global Wellness Connections

Jurisdictional Agency (if different):

Organization Type: In-State not for profit

Organization Website: https://globalwellnessconnections.org/

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County: Hennepin

Phone:* 763-300-7391 (Ext.)

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PeopleSoft Vendor Number

Project Information

Project Name Hyperloop Feasibility Study

Primary County where the Project is Located Dakota, Hennepin

Cities or Townships where the Project is Located: Bloomington to Rochester, inclusive, approx along Hwy 52

Jurisdictional Agency (If Different than the Applicant):

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)

Location: Twin Cities to Rochester, Minnesota, with potential terminals at Minneapolis-St. Paul International Airport (MSP), Bloomington, Rochester, and Rochester International Airport (RST). The proposed feasibility study would examine these and other potential and optimal station locations and feeder/modal connections.

Global Wellness Connections (GWC) 501(c)(3), the Cities of Bloomington and Rochester, and the University of Minnesota propose conducting a technical and economic feasibility study as the first step toward an ultra-high-speed connection between the Twin Cities and Rochester.1 Once considered science fiction, hyperloop technology is transportation's 21st-century response to a world beset by climate change. Like automobiles and airplanes in the early 20th century, hyperloop will transform how people and goods move, enabling hyper-fast connections across distances, allowing for ease of travel without the significant environmental and biological harm caused by carbon-based transportation.

Hyperloop, a carbon-neutral transportation system powered by renewable resources, uses capsules that move through reduced-pressure tubes via electromagnetic propulsion and passive magnetic levitation.2 Hyperloop Transportation Technologies, Inc. (HyperloopTT) is now the only US-based research and development company advancing hyperloop systems. GWC is working with HyperloopTT on this proposal to introduce the technology to Minnesota leaders across sectors. GWC and HyperloopTT would develop a larger public-private partnership (P3) for the proposed feasibility study.

The route between the Twin Cities and Rochester is envisioned primarily underground, using existing public rights-of-way, leaving farmlands and communities undisturbed. The feasibility study evaluates the engineering, geologic and hydrologic feasibility of underground construction between the two regions. A hyperloop from the Twin Cities to Rochester could transport people and light freight in under 15 minutes, 24/7, ultimately traveling over 700 mph.

Hyperloop projects are underway in North and South America and Europe. Several states in the US, notably the Chicago-Cleveland-Pittsburgh corridor, have projects in various stages of development.3 The first commercial line, from Venice to Padua, Italy, is on target to open for the 2026 Winter Olympics.4

A feasibility study is the first, necessary step to articulate and quantify the costs and benefits. If the study proves this connection feasible, private capital could fund design and construction.

The economic expansion and quality of life opportunities hyperloop would provide are substantial. It would be an innovation breakthrough for the region and establish Minnesota as a model for thriving amidst climate change.

(Limit 2,800 characters; approximately 400 words)

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DESCRIPTION - will be used in TIP if the project is selected for funding. See MnDOT's TIP description guidance.

Catalyzing a Wellness Corridor: Understanding the Technical Feasibility and Social and Economic Benefits of Connecting the Twin Cities Metro Region and Rochester with a Hyperloop

Include both the CSAH/MSAS/TH references and their corresponding street names in the TIP Description (see Resources link on Regional Solicitation webpage for examples).

Project Length (Miles)

85.6

to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project?

No

If yes, please identify the source(s)

Federal Amount $2,000,000.00

Match Amount $500,000.00

Minimum of 20% of project total

Project Total $2,500,000.00

For transit projects, the total cost for the application is total cost minus fare revenues.

Match Percentage 20.0%

Minimum of 20%
Compute the match percentage by dividing the match amount by the project total

Source of Match Funds Public and private partners

A minimum of 20% of the total project cost must come from non-federal sources; additional match funds over the 20% minimum can come from other federal sources

Preferred Program Year

Select one: 2026

Select 2026 or 2027 for TDM and Unique projects only. For all other applications, select 2028 or 2029.

Additional Program Years: 2025

Select all years that are feasible if funding in an earlier year becomes available.

For All Projects

County, City, or Lead Agency Global Wellness Connections

Zip Code where Majority of Work is Being Performed

For Construction Projects Only

(Approximate) Begin Construction Date

(Approximate) End Construction Date

TERMINI: (Termini listed must be within 0.3 miles of any work)

From:
(Intersection or Address)

To:
(Intersection or Address)

DO NOT INCLUDE LEGAL DESCRIPTION

Requirements - All Projects

All Projects

1. The project must be consistent with the goals and policies in these adopted regional plans: Thrive MSP 2040 (2014), the 2040 Transportation Policy Plan (2018), the 2040 Regional Parks Policy Plan (2018), and the 2040 Water Resources Policy Plan (2015).

Check the box to indicate that the project meets this requirement. Yes

2. The project must be consistent with the 2040 Transportation Policy Plan. Reference the 2040 Transportation Plan goals, objectives, and strategies that relate to the project.

Briefly list the goals, objectives, strategies, and associated pages:

System Stewardship (p58) The feasibility study and future planning efforts would examine integration with transportation systems so that hyperloop is an optimized complement for many trips and a sustainable alternative for others such as:

*linking existing transit resources at MSP and Bloomington and existing transit resources at RST and Rochester to reduce VMT for trips between the Twin Cities and Rochester,

*moving high-value, time-sensitive freight, currently transported by truck from the Twin Cities to Rochester and Mayo Clinic facilities, to the 24/7 hyperloop system, and

*reducing annual VMT on Hwy 52 to reduce maintenance and increase useful life.

Safety (p60) Lowering VMT on Hwy 52, hyperloop would contribute to Toward Zero Deaths goal. Fatigue, impaired driving, inclement weather, congestion, and other crash variables are not relevant in a hyperloop. For Hwy 52 drivers, hyperloop would reduce volume and thus crash opportunities.

Access to Destinations (p62) Hyperloop is reliable and predictable, as it travels in an entirely unimpeded "lane," primarily underground, without intersecting current traffic. Hyperloop would bring Rochester's growing economic region to the Twin Cities metro population, for whom Rochester has been mostly out of reach. Work opportunities, affordable housing options and greater prosperity could come from an intentionally inclusive approach to creating the system and could significantly benefit historically underserved populations.

Competitive Economy (p64) Launching a feasibility study alone would signify that Minnesota is serious about leading the nation in environmentally sustainable and accessible 21st-century transportation. Building an early US hyperloop route would position Minnesota to lead in this emerging industry and fortify our region for businesses to grow in an innovative culture, proactively responding to climate change and demonstrating our hard-working and innovative workforce.

Healthy Environment (p66-67) As a carbon-neutral transportation technology, hyperloop can significantly reduce Minnesota's greenhouse gas emissions, toward Minnesota's goal of bringing GHG "to 80 percent below 2005 levels by 2050." The feasibility study would quantify this benefit, and possible VMT reductions per capita, through scenario/sensitivity analyses.

Guide Land Use (p70) Hyperloop provides a rare opportunity to design and build new transportation options emphasizing density, multi-purpose land use, and equitable and accessible multimodal transportation. Understanding this potential would be foundational in the feasibility study and guide ultimate planning and development. Lastly, the primarily underground hyperloop preserves surface lands and reduces or eliminates surface disruption along the corridor.

Limit 2,800 characters, approximately 400 words

3. The project or the transportation problem/need that the project addresses must be in a local planning or programming document. Reference the name of the appropriate comprehensive plan, regional/statewide plan, capital improvement program, corridor study document [studies on trunk highway must be approved by the Minnesota Department of Transportation and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses.

List the applicable documents and pages: Unique projects are exempt from this qualifying requirement because of their innovative nature.

Exempt

Limit 2,800 characters, approximately 400 words

4. The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of transit stations/stops, transit terminals, park-and-ride facilities, or pool-and-ride lots. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding as a standalone project, but can be included as part of the larger submitted project, which is otherwise eligible. Unique project costs are limited to those that are federally eligible.

Check the box to indicate that the project meets this requirement. Yes

5. Applicant is a public agency (e.g., county, city, tribal government, transit provider, etc.) or non-profit organization (TDM and Unique Projects applicants only). Applicants that are not State Aid cities or counties in the seven-county metro area with populations over 5,000 must contact the MnDOT Metro State Aid Office prior to submitting their application to determine if a public agency sponsor is required.

Check the box to indicate that the project meets this requirement. Yes

6. Applicants must not submit an application for the same project elements in more than one funding application category.

Check the box to indicate that the project meets this requirement. Yes

7. The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is $500,000 and the maximum award is the total amount available each funding cycle (approximately $4,000,000 for the 2024 funding cycle).

Check the box to indicate that the project meets this requirement. Yes

8. The project must comply with the Americans with Disabilities Act (ADA).

Check the box to indicate that the project meets this requirement. Yes

9. In order for a selected project to be included in the Transportation Improvement Program (TIP) and approved by USDOT, the public agency sponsor must either have a current Americans with Disabilities Act (ADA) self-evaluation or transition plan that covers the public right of way/transportation, as required under Title II of the ADA. The plan must be completed by the local agency before the Regional Solicitation application deadline. For the 2022 Regional Solicitation funding cycle, this requirement may include that the plan is updated within the past five years.

The applicant is a public agency that employs 50 or more people and has a completed ADA transition plan that covers the public right of way/transportation.

The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public right of way/transportation.

(TDM and Unique Project Applicants Only) The applicant is not a public agency subject to the self-evaluation requirements in Title II of the ADA. Yes

Date plan completed:

Link to plan:

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

10. The project must be accessible and open to the general public.

Check the box to indicate that the project meets this requirement. Yes

11. The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement, per FHWA direction established 8/27/2008 and updated 6/27/2017. Unique projects are exempt from this qualifying requirement.

Check the box to indicate that the project meets this requirement. Yes

12. The project must represent a permanent improvement with independent utility. The term ?independent utility? means the project provides benefits described in the application by itself and does not depend on any construction elements of the project being funded from other sources outside the regional solicitation, excluding the required non-federal match. Projects that include traffic management or transit operating funds as part of a construction project are exempt from this policy.

Check the box to indicate that the project meets this requirement. Yes

13. The project must not be a temporary construction project. A temporary construction project is defined as work that must be replaced within five years and is ineligible for funding. The project must also not be staged construction where the project will be replaced as part of future stages. Staged construction is eligible for funding as long as future stages build on, rather than replace, previous work.

Check the box to indicate that the project meets this requirement. Yes

14. The project applicant must send written notification regarding the proposed project to all affected state and local units of government prior to submitting the application.

Check the box to indicate that the project meets this requirement. Yes

Measure 1: Significance

A. Describe the regional impact of the project. In the response, consider the following:

- *How many people does the project directly impact?*
- *What percent of the people (in a given community/area) are directly impacted?*
- *What is the project?s geographic reach?*

Response:

The regional impact of this project would be positive, sustainable, and extensive. Reaching from the Twin Cities to Rochester, a hyperloop would serve a population of over three (3) million people. Ridership estimates between the Twin Cities and Rochester will be evaluated as part of the feasibility study; however, earlier high-speed rail studies estimated some two million riders per year, including commuters, patients, caregivers, casual travelers and business travelers.

Travel time savings per passenger per trip is on the order of more than one-hour travel time saved per one-way trip. With an annual ridership of 2 million round-trip passengers, travel time savings would approach 2 million hours, or 250,000 workdays, per year. This is equivalent to nearly 1,000 full-time workers. These 2 million hours not spent commuting would be returned to the commuter; thus, the greatest benefit to the riders is time. Time not spent commuting, but being used however they choose.

While not directly impacted by construction of the project, access to an ultra-fast connection between the Twin Cities and Rochester would be available to all people in Southeast Minnesota. Direct impacts along the selected corridor would be mitigated by use of aerial construction, or underground tunnels constructed using next-generation artificial intelligence, remote sensing, and robotic labor, to ensure worker health and safety. Stations at termini would likely be underground and located at or near existing transportation resources including light rail, bus, and air travel. Preliminary travel data indicates the most favorable station locations to attract the highest number of travelers would be at MSP Airport, Bloomington South Loop, downtown Rochester, and RST Airport.

The project's geographic reach is extensive and can be described as a service area radius around the Twin Cities of perhaps 40 miles, and a service area radius around Rochester of perhaps 40 miles, for a minimum service area of about 2,500 sq. miles.

The feasibility study will examine integration with existing transportation systems so that Hyperloop is an optimized and affordable complement for many trips, and a sustainable alternative for others. For example,

*Linking existing transit resources in Bloomington, and existing transit resources in Rochester, to reduce VMT for trips between the Twin Cities and Rochester.

*Moving high-value, time-sensitive freight, currently transported by truck from the Twin Cities to Rochester and Mayo Clinic facilities, to the 24/7 Hyperloop system.

*Reducing annual VMT on Hwy 52, reducing maintenance and increasing useful life.

(Limit 2,800 characters; approximately 400 words)

B. Describe the expandability of the project. If the project requires an adequate private market response, describe the characteristics of the market it could serve beyond the initial project. In the response, consider the following:

- *How can the idea be used regionwide?*
- *If not regionwide, is it a replicable project (i.e., could it be adapted elsewhere)? Describe the extent of the potential locations.*

Response:

The Twin Cities-Rochester Hyperloop project is initially programmed to be regionwide, serving the Minneapolis/St. Paul metropolitan area and the Rochester metropolitan area. This project follows completion of a larger multi-region hyperloop feasibility study connecting Chicago, South Bend, Toledo, Cleveland, and Pittsburgh.

The Twin Cities-Rochester hyperloop connection will be evaluated for independent utility, without consideration of future extensions. Reasonable extensions from Rochester would include La Crosse, Madison, Milwaukee, and then connect with the Great Lakes Hyperloop in Chicago. This would eventually connect the Twin Cities and Chicago with a travel time of about 40 minutes, compared to a current drive time of about 5 hours. Ridership for this Twin Cities to Chicago corridor was studied in detail during high-speed rail economic analyses, with an estimated annual ridership (at 220 mph maximum speed) of 15.9 million passengers.5

Adaptation of the hyperloop technology and service level can extend the project from the initial connection between the Twin Cities and Rochester to La Crosse, WI; Madison and Milwaukee, WI; and Chicago, IL. The development framework to serve the initial project, including regulatory approvals, will be evaluated during the feasibility study.

(Limit 2,800 characters; approximately 400 words)

C. Describe the new approach of the project to address existing and/or emerging challenge(s). Identify the challenge(s) that the approach is trying to address and discuss how the approach was developed (e.g., replicated from another region, created a new technology/idea). Also briefly describe the risk assessment of the new approach any mitigation strategies to manage risks, and who will mitigate the risk, if needed.

Examples of challenges include:

- *Problems that have been a long-term issue where progress has been limited*
- *Lack of opportunity for an emerging technology or innovation to penetrate the Twin Cities market*
- *Leveraging connected and automated (CAV) vehicle technology and infrastructure*
- *Outdated function or effectiveness of existing infrastructure*

Response:

Rochester is experiencing unparalleled investment and growth, primarily through expansion and economic development associated with Mayo Clinic, including a $6B Destination Medical Center public-private partnership initiative currently underway with the State of Minnesota, as well as the recently announced $5B expansion of Mayo Clinic facilities in downtown Rochester.6 Such an investment is unmatched in Minnesota history.

This expansion will create several thousand jobs for which the current labor market needs to prepare for response. A fast connection via hyperloop, connecting the Twin Cities and Rochester, will effectively merge the labor markets of Minnesota's two most dynamic economic centers, providing thousands of new economic opportunities for residents across the Metro area.

Labor requirements and transportation needs associated with this planned growth are staggering. Thousands of new jobs far outstrip Rochester's and surrounding communities' available labor resources. As a city with 120,000 residents, there are currently over 100,000 jobs in the city, resulting in a commuting influx of approximately 40,000 workers per day. Many of these workers arrive via automobile, stretching capacities of highways and parking.

A hyperloop connection between the Twin Cities and Rochester would provide benefits to the entire region:

*Create an ultra-high-speed connection with a travel time of 15 minutes or less

*Effectively merge labor markets by providing safe, fast, secure transport of workers

*Provide co-located hyperloop terminals with existing transit resources

*Reduce daily commuting traffic on highways by thousands of vehicles and emissions

*Reduce surface and structured parking requirements

The proposed rigorous and comprehensive technical and economic feasibility study is the first step for a national demonstration project to employ ultra-high-speed transportation to connect and sustainably grow the two economic regions. Building a hyperloop is contingent upon a result demonstrating positive net benefit and being technologically feasible in the targeted corridor.

All hands-on deck are needed for planful action to respond to and mitigate carbon emissions and turn the curve on climate change in our lifetime. The passage of federal IIJA and IRA, and Minnesota's recently passed carbon-reduction goals, reflect the public's growing will and momentum for serious, concerted and systemic leadership and action by all levels of government.7, 8

As described in The Future of Wellbeing: Minnesota Leading the Way, research points to the Upper Midwest becoming a climate haven for national and global climate refugees in the coming decades.9 People are attracted to our region's abundance of fresh water, fertile land, economic opportunity and resources, and relatively greater insulation from the worst of the almost unlivable temperatures, wildfires and storms plaguing the southern U.S. and much of the world.10

Developing Minnesota as a 'wellness corridor' in this context requires vision, leadership, planful, thoughtful, multi-sector responses to challenges and (forced) opportunities for climate-caused disruption. With the intentional breadth and depth of engagement from communities, government, for-profit, non-profit, and academic sectors, a hyperloop has the potential to be a significant catalyst in creating this sustainable, climate-forward future.

Ideally positioned to take advantage of hyperloop early in its development, the 90-mile line from the Twin Cities to Rochester is optimal for an initial operating segment in the U.S. with projected, consistent, built-in demand between the metro areas. For example, the University of Minnesota-Rochester Chancellor noted they could double their enrollment if travel time were reduced from 90 to 15 minutes.

The feasibility study would explore and quantify the range of social and economic changes that developing, building and operating the line would provide. Companion analysis would quantify carbon reduction, changes in VMT and other transportation performance indicators, significantly boosting Minnesota's stated carbon reduction goals.

(Limit 4,200 characters; approximately 600 words)

Measure 2: Environmental Impact

A. Describe how the project will improve regional air quality.

Applicants must describe their methodology for determining the project impact. Also, provide a description of the people/groups that will receive either direct or indirect benefits from the project. Examples of benefits include:

- *Reduction of single-occupant vehicle (SOV) trips*
- *Access to electric vehicle charging stations*
- *Reduction of peak-hour auto trips*
- *Increase in non-motorized trips*
- *Increase in multiple-occupant vehicle trips*

Response:

The regional impact of this project would be positive, sustainable, and extensive. Reaching from the Twin Cities to Rochester, a hyperloop would serve a population approaching three (3) million people. Ridership estimates between the Twin Cities and Rochester will be evaluated as part of the feasibility study, although earlier passenger rail studies estimated some 1.5 to 2 million riders per year including commuters, patients, caregivers, and business travelers.

While not directly impacted by construction of the project, access to an ultra-fast connection between the Twin Cities and Rochester will be available to all residents of Southeast Minnesota.

The project's geographic reach is extensive and can be described as a service area radius around the Twin Cities of perhaps 40 miles, and a service area radius around Rochester of perhaps 40 miles.

As noted above, Rochester is a city with 120,000 residents with currently over 100,000 jobs in the city resulting in a commuting influx of workers of about 40,000 per day, many of whom arrive via automobile stretching the capacities of connecting highways as well as capacities of available parking resources.

A hyperloop connection between the Twin Cities and Rochester would provide the following benefits to the entire region:

*Create an ultra-high-speed connection between the Twin Cities and Rochester with a travel time of 15 minutes or less

*Effectively merge the labor markets of the Twin Cities and Rochester by providing a safe, fast, secure transport of workers between the Twin Cities and Rochester

*Provide hyperloop terminals in the Twin Cities co-located with existing transit resources

*Reduce single-occupant vehicle (SOV) trips

*Reduce peak-hour auto trips

*Increase non-motorized trips

*Increase multiple-occupant vehicle trips

*Reduce commuting traffic on area highways by thousands of vehicles and associated emissions each day

*Reduce surface and structured parking requirements in Rochester

(Limit 2,800 characters; approximately 400 words)

B. Describe how the project will contribute to climate change improvement. Explain how the project will reduce greenhouse gas emissions.

Response:

The International Energy Agency estimated that in 2019, the transportation sector's global carbon emissions surpassed eight gigatons.11 Transportation is the largest sector of CO2 emissions. Thus, there is a significant opportunity to reduce CO2 and curb global warming, if we crack the transportation nut.12

Each day, thousands of vehicle miles are traveled on Hwy 52 between the Twin Cities and Rochester. Many trips are commutes to and from Mayo Clinic and ancillary organizations. Some are time-sensitive, high-value express freight such as medical devices and biologics. In addition to vehicle carbon emissions, the city of Rochester must build parking capacity for commuting workers and arriving patients and visitors, contributing to heat sinks. And, Hwy 52 requires perpetual maintenance, given VMT and the freeze-thaw cycle stresses on pavement. Maintenance materials, vehicles, and other operational factors also contribute to CO2 emissions.

Hyperloop, in contrast, is a zero-emission transportation technology. Propelled through reduced- pressure tubes at airplane speeds, capsules are powered by renewable energy. The Twin Cities - Rochester line is envisioned to be built primarily underground ? no at-grade crossings, avoiding disturbance of farmland and communities. Transporting people and express freight, 24/7, a hyperloop would divert cars and trucks from Hwy 52, as well as reduce some air transport. The proposed feasibility study would quantify VMT, air quality gains, and carbon reductions, among other benefits.

The HyperloopTT technology consists of a capsule enclosed in a pressure-reduced tube (10 Pa) using electromagnetic propulsion via linear motors and employing next generation magnetic levitation using permanent magnets. This results in greatly reduced air resistance (aerodynamic drag), and elimination of friction with no capsule contact with the guideway. With these reductions in aerodynamic drag and friction, the capsule is able to achieve speeds of over 600 mph with virtually no emissions.

Using permanent magnets in a unique array, the magnetic levitation technology requires no energy input for levitation. Levitation can occur at rest with no movement of the capsule, and with no energy input.

Electricity to power the linear motors and vacuum pumps will be provided by solar energy resources. On-board rechargeable batteries provide capsule power during travel, with quick change-out of batteries if needed during station stops.

(Limit 2,800 characters; approximately 400 words)

C. Describe how the project will improve surface or ground water quality and management. Examples of improvements include:

- *Reduction of stormwater runoff and improvements to on-site stormwater management*
- *Improvements to the resiliency of infrastructure in response to stormwater events*

Response:

The hyperloop project would have minimal impact on surface water resources since most construction is proposed underground. Where surface facilities, including stations, tunnel portals, and maintenance facilities would be constructed, appropriate stormwater runoff and stormwater management best practices would be observed.

The hyperloop project would likely be constructed underground in tunnels constructed either with tunnel boring machine technologies or next-generation robotic construction. Evaluation of groundwater resources and potential for intersection with groundwater resources will be evaluated during the feasibility study, with recommendations for further evaluation, if necessary, during the subsequent preliminary engineering phase.

Excavated soil or rock will be removed from the tunnel in order to continue advancing. This tunnel spoil material will be classified and relocated to a site authorized and approved for deposit by appropriate authorities. Reuse of the excavated material will be evaluated during the planning phase. The disposal plan for tunnel spoil material will include appropriate handling and disposal practices as determined by permit requirements.

Tunnel structures will be designed to maximize passenger safety and comfort including emergency ingress and egress. Tunnel structures will be designed and constructed to prohibit infiltration of either surface or groundwater.

(Limit 2,800 characters; approximately 400 words)

D. Describe how the project will make other environmental improvements. Examples of other environmental elements include:

- *Protection of or enhancement to wildlife habitat or movement*
- *Protection of or enhancement to natural vegetation, particularly native vegetation*
- *Reductions in or mitigation of noise or light pollution*

Response:

Unlike traditional highway or infrastructure projects, the hyperloop will avoid, to the maximum extent practicable, impacts on the natural and built environments including wildlife habitat and movement, and natural vegetation, particularly native vegetation. This will be achieved by aerial construction or underground tunnel construction techniques where the surface remains relatively undisturbed.

Tunnel construction would consist of underground construction using traditional tunnel boring machines, or next-generation robotic tunnel construction using artificial intelligence, remote sensing, and robotic labor to ensure worker health and safety and increase advance rates over traditional methods. Compared to traditional surface transportation construction, this approach will serve to:

*Protect or enhance wildlife habitat or movement

*Protect or enhance natural vegetation, particularly native vegetation

*Reduce or mitigate impacts of noise or light pollution

Stations at termini will likely be underground and located at or near existing transportation resources including light rail, bus, and air travel. These underground stations will provide vertical circulation for passengers in accordance with ADA requirements, with lighting and security features to promote safe use by all passengers.

Surface access will be provided at several locations along the underground route for several purposes including but not limited to ingress and egress from the capsule systems, access for communications, vacuum, and electrical networks, and maintenance access. These surface facility locations will be programmed during the feasibility study to evaluate potential impacts along the corridor with detailed investigations during the preliminary engineering phase.

Prior to construction, this project would be subject to environmental review under the National Environmental Protection Act (NEPA) and applicable local and state requirements.

(Limit 2,800 characters; approximately 400 words)

Measure 3: Racial Equity

A. Describe how the project will improve connectivity and access to places and opportunity for black, indigenous, and people of color (BIPOC) communities. Examples of improvements include:

- *Better connecting people to places, but also demonstrating an understanding of the places people want to go*
- *Connecting communities where known gaps exist (document why connection is needed and where that documentation was sourced from)*
- *Outreach to, and involvement from, BIPOC communities in project selection, development, or delivery*

Response:

In the Twin Cities, as in other car-centric metro areas, black, indigenous and people of color (BIPOC); people with disabilities; people with limited wealth; and people without access or the ability to drive a car are constrained in where they live, work, study, access health care, buy food, engage in social and recreational activity, and find solitude. The quality-of-life ramifications of these constraints are becoming more understood academically. However, these consequences have been felt for generations by those living within them.

Population surveys, focus groups, interviews, and public meetings have been extensive in the Twin Cities Metro region. There are longitudinal, point-in-time and project-specific reports documenting mobility barriers that disproportionately affect people of color and other populations.

The Met Council's Travel Behavior Survey details travel patterns and modeshare among population segments, and the Council's engagement efforts for the Green Line LRT provide best practices for authentic community engagement. MnDOT launched an Advancing Transportation Equity project, which included in-depth interviews with organizations representing communities experiencing known inequities in transportation and mobility. MnDOT's ongoing Rethinking I-94 is another substantial effort to meaningfully involve communities of color at the outset of project planning and design.

The hyperloop feasibility study would include a thorough 'lit review' of the demographic data, qualitative information, engagement processes and best practices from the Twin Cities metro region at the intersection of transportation and mobility for BIPOC and other under-served communities. We would gather this information from public agencies, nonprofits, advocacy organizations, and academic institutions. We would then conduct supplemental interviews for additional research, look-backs, and current assessments.

A project goal is to use the hyperloop feasibility study to understand and quantify where we could significantly mitigate transportation inequity by spurring new intermodal connections between the Twin Cities-Rochester hyperloop and other modes. What are these opportunities, and what would be the costs and benefits? We would be expansive in understanding the economic and quality-of-life potential for the region's traditionally underserved communities, and gather input from them on how they would measure progress.

The feasibility study's robust public engagement work, informed by previous projects, would include deep participation from BIPOC community organizations. We would provide accessible community meetings and other in-person and virtual engagement options across the Met Council's geographic region, Rochester, and communities in between.

(Limit 2,800 characters; approximately 400 words)

B. Describe how the project will remove or lessen barriers to movement, participation, or cultural recognition. Examples of improvements include:

- *Physical barriers being addressed (directly or indirectly)*
- *Cultural barriers being addressed (language, etc.)*
- *Engagement barrier being addressed (improving systemic outreach issues)*

Response:

The feasibility study, and the potential to build and launch an entirely new transportation mode, gives the Twin Cities metro region and Minnesota an opportunity to meaningfully build with the diversity of populations who would be served, directly and indirectly, by a hyperloop. For example, the project team anticipates robust participation throughout the feasibility study, design, construction, and operation. There would be substantial ancillary business development, providing opportunities to create new BIPOC-owned business. And there would be the ridership benefits: greater mobility, access to well-paying employment, affordable housing, and other quality of life benefits that would come from joining the two economic regions.

GWC would engage communities at the planning outset, similar to the LRT and Rethink 94 efforts, to ensure that these new opportunities are planned and designed to improve accessibility to all, and to level parity of access, where feasible. Finally, as carbon-based transportation disproportionately and adversely affects communities of color, a hyperloop would mitigate some of this historic and ongoing health and wellness disparity.

The project team has learned from experience on other projects, which have in good faith sought out participation from BIPOC communities, that many public, private, and nonprofit organizations in Minnesota have been similarly motivated, in recent years, and collectively have unintentionally created an engagement burden on people of color. That is, there is a cost to provide one's time and energy to civic engagement, even for a good cause; and all the more so for people with stretched resources, limited mobility, limited childcare options, etc. The project team's public engagement efforts would be sensitive to this, and not only provide payment for time and input, but would work with community-based facilitators to provide a greater sense of equitable engagement and comfort.

Contracts for public engagement would be written with current best practices, and post-project evaluations from other similar efforts, as guides to ensure that we are creating an inclusive, integrated project from the beginning and into the future. We will build regular ongoing evaluation into the work and make course corrections as indicated. We fundamentally understand that transportation is about providing people with options for mobility, to be able to get to places that are important to them, as efficiently and safely as possible. This basic quality of life component has never been as accessible to people with lower wealth; and that has disproportionately affected BIPOC communities, people with disabilities, and the aged. We hope to help Minnesota turn the curve on this disparity, with this feasibility study.

(Limit 2,800 characters; approximately 400 words)

C. Describe how the project will contribute to quality-of-life improvements for BIPOC communities. Examples of improvements include:

- *Placemaking or strengthening a sense of place*
- *A sense of safety or security*
- *Job creation, increased economic development*
- *Access to green space and recreation*
- *Improved public health (excluding environmental impacts discussed in criterion two)*

Response:

A hyperloop route from the Twin Cities to Rochester would improve affordable housing, transportation, employment, and other economic necessities, primarily because the line would create a larger economic hub, essentially joining the two dynamic economic regions. For example, Eric Jolly, president and CEO of the Saint Paul and Minnesota Foundations, noted, "If we knew there would be a fast connection between the economies of Rochester and the Twin Cities, we'd know exactly where the most affordable housing could go." Jolly immediately saw how a hyperloop connection could give more people access to livable communities.

Minnesota's major industry clusters - healthcare, medical devices, a variety of manufacturing, agriculture, and nutrition, to name a few - are all seeking workers.13,14 Traditionally under- represented communities are systematically, geographically, cut off from the prosperity that should be America's promise. Creating a more tightly knit transportation network that isn't car-dependent would provide greater mobility, and access to good work and other quality-of-life resources, starting in the target region, and expanding throughout the upper Midwest and beyond. In addition, building a hyperloop, itself, would create significant opportunities across industries.

The feasibility study process would include robust engagement at the outset from affected communities, and communities whose mobility options could be expanded with the development of a hyperloop and a more robust network of connected modes. Evaluation of the costs, risks, and benefits would include the specific impacts on BIPOC communities and other traditionally underserved populations, and people with more-limited transportation and mobility options. This analysis would be integral to the project, not an add-on. BIPOC and other communities would be engaged at the outset to guide this process, to understand their priorities, current barriers, and success measures. We would contract with representative affiliation organizations and BIPOC professionals for public engagement and other study objectives, for their time, knowledge, and expertise.

(Limit 2,800 characters; approximately 400 words)

Measure 4: Multimodal Communities

A. Describe how the project improves multiple non-single-occupant vehicle (SOV) modes within the system (e.g., transit, biking, walking, carpooling). Examples of improvements include:

- *Creating interconnectivity between modes*
- *Creating structures or facilities that serve multiple modes*
- *Improvements to multimodal trip planning or ease of use*

Response:

The Twin Cities, its metropolitan region, and Greater Minnesota are significantly expanding transit, bike, and pedestrian infrastructure. There is steady work and success on breaking out of the single-occupant-vehicle hold on passenger transportation. Hyperloop technology provides one more climate-sustainable option that would intentionally integrate with other sustainable modes such as ped, bike, LRT, bus, and BRT.

The feasibility study would examine options for feeder transit lines to stations, and ancillary transportation needs and opportunities that would affect communities along and surrounding the Twin Cities-Rochester route.

The study also would examine hyperloop for sustainable express-freight transportation, including changing freight patterns and creating opportunities to optimize freight and passenger transport between the Twin Cities and Rochester. For example, the western suburbs are populated with medical device manufacturers; Plymouth is home to one of the largest concentrations of medical device companies in the country. Hyperloop could provide a faster, cheaper, and more efficient option for moving time-sensitive, fragile devices to Rochester, than is now available.

As the Twin Cities-Rochester line would connect with other planned hyperloop routes, e.g., initially to La Crosse, Madison, Milwaukee, Chicago, and points east, hyperloop would provide a sustainable option for distance transportation. Hyperloop would essentially knit cities and communities that are currently hours away, by surface transportation, into larger, economic, social, and cultural hubs - accessible to travelers in fractions of current travel times at a competitive, affordable cost.

With hyperloop, we foresee significant multimodal connectivity improvements throughout the Twin Cities metropolitan region, from across the Metro region; on the route to Rochester; and beyond, as the hyperloop network extends east of Minnesota.

Specifically, the feasibility study will consider integration of hyperloop stations with existing Metro transit systems to enable riders from across the Metro area to transit to the nearest hyperloop station and proceed to Rochester. Hyperloop stations in Rochester will similarly consider integration with pedestrian, bike, bus, air, and planned BRT facilities.

It is anticipated that the hyperloop access to these transportation modes will be underground to avoid surface disruptions and ease right-of-way access. Vertical circulation for passengers and express freight will be included with capacities based on specific-location demand.

Design and development of hyperloop would be planned with these connections at the forefront, to ensure that first-mile and last-mile mobility is efficient, reliable, and accessible to everyone.

(Limit 2,800 characters; approximately 400 words)

B. Describe the land use and development strategies that the project directly influences or supports that help create walkable, bikeable, and transit-friendly communities. Examples of strategies include:

- *Contributing to the growth of dense, mixed-use communities or neighborhoods*
- *Addressing the outcomes and goals in Thrive MSP 2040 and the 2040 TPP*
- *Reducing demand or need for automobile parking infrastructure (e.g., shared parking arrangements, parking management techniques)*

Response:

Traditional transportation infrastructure projects require significant surface right-of-way to accommodate planned roadway or transit construction, as well as consideration for surface water management, turn lanes, exit ramps, and other provisions. Hyperloop employs underground construction to mitigate surface impacts and minimize potential environmental impacts. Further, use of underground construction fully eliminates at-grade crossings or the need to construct grade separations.

This underground construction includes use of easements rather than expropriation of necessary rights-of-way, providing the landowner with just compensation without impact or disruption to surface lands. This avoids protracted corridor access permission and associated project delays. Well-designed and constructed tunnel alignments are more costly than surface alignment construction; however, the reduction or elimination of impacts on the built and natural environments promotes continued regional environmental stewardship.

In this manner, higher density communities and neighborhoods can offer greater access to high-capacity, ultra-high-speed transit service without detrimental surface impacts or disruptions.

In addition, commuting workers can arrive at hyperloop stations using existing transit systems, travel quickly to their destination, and not require parking facilities at the destination terminal, thus reducing dependence on surface and structured parking facilities. This is a key advantage when Rochester workers can commute to the Twin Cities ? regardless of weather conditions ? and are able to do so safely, quickly, and affordably, without requiring parking facilities in the Twin Cities. The reverse is also true for commuters originating in the Twin Cities and working in Rochester, or the occasional traveler in either direction that would otherwise have driven their own vehicle and required parking capacity at or near their destination.

These numerous advantages of a hyperloop system fit well with the Met Council's Thrive MSP 2040 Plan indicators, including:

*Stewardship - the average number of jobs reachable by 30-minute transit will increase significantly

*Prosperity - the share of commuters that travel less than 20 minutes to work will increase significantly

*Equity - access to additional housing alternatives will increase significantly

*Livability - access to many more livable community alternatives

*Sustainability - access to carbon-free transportation using renewable energy resources promotes reduction in surface water contamination from roadway runoff and leadership by example to reduce climate impacts from transportation systems.

(Limit 2,800 characters; approximately 400 words)

C. Describe how the project supports first- and last-mile solutions for people connecting to places they need to go. Describe the destinations the project will connect and their level of demand. Examples of strategies include.

- *Mobility hubs and centralized connections for multiple modes*
- *Increasing shared trips/shared mobility*
- *Access to job centers not located on fixed transit routes*

Response:

Hyperloop projects support first- and last-mile solutions by locating passenger stations directly at existing multimodal transit stations or final destinations, eliminating the need for additional transportation links. This is possible by configuring the hyperloop systems in underground tunnels, constructed below any conflicting utilities or foundations, and allowing for straight, flat approaches with minimal deviations.

When convenient connections to final destinations are not possible, the hyperloop station would be constructed at an existing transit station location to result in a fully integrated mobility hub. Hyperloop stations would serve as centralized connections for multiple modes including auto, bus, BRT, light rail, and/or air, resulting in shared mobility among various modes and increasing system-wide efficiencies.

Access to job centers or locations not located on any fixed transit routes would be evaluated during hyperloop route studies to serve job center location(s) through existing transit station(s) and last-mile alternatives, or by identifying the potential hyperloop/existing station location to serve the greatest number of customers. From that location, last-mile connections can consist of walking, biking, or ride-share services, if no other transit service is available.

(Limit 2,800 characters; approximately 400 words)

Measure 6: Partnerships

A. Describe the number of stakeholder groups that have helped or will help develop the project and their role in the project?s delivery. In the response, consider the following:

- *How many partners will be involved in the project?*
- *Will there be public/private partnerships (or 4P; Public, Private, Philanthropic, and People)*
- *What percent or number of partners are small or minority-owned businesses (e.g., disadvantaged business enterprise [DBE], targeted group business [TGB], Met Council underutilized business [MCUB])*
- *Are businesses or partners locally owned or run?*

Response:

Global Wellness Connections is rich in decades of public, academic, nonprofit, and for-profit sector experience. GWC's central ethos is to facilitate cross-sector and cross-industry collaboration to advance Minnesota as the world's Wellness Corridor, responding to and thriving amidst climate change. Exploratory consultations with over 200 cross-sector Minnesota organizations in the past several years confirmed that this idea resonates.

In 2022, GWC organized the Future of Wellbeing research effort. This yearlong process engaged over 100 professionals, in person and remotely, from across Minnesota's public, private and nonprofit sectors. Volunteer participants from leading Minnesota industry clusters such as healthcare, agriculture, nutrition, and natural resources were invited. We wanted to learn how 'wellbeing' and health are understood from these varied perspectives and how Minnesota can bridge often siloed spaces to advance greater wellbeing for all Minnesotans.

Participants were animated by the idea that Minnesota/the upper-Midwest are becoming climate havens. This trend will increase as climate change renders other areas unlivable. Through iterative, facilitated conversations, participants said they want Minnesota to plan across sectors for this migration so that we can absorb climate refugees in a thoughtful, productive, and sustainable manner and ensure that existing disparities aren't exacerbated. They want to participate in this work. GWC takes this direction seriously; wants to reconvene participants in some manner for the feasibility study; and can draw on the Future of Wellbeing experience of working with partners and consultants, reaching out more broadly and deeply across the region to engage the public.

Planning a hyperloop from the Twin Cities to Rochester would require significant and authentic public engagement and support at the outset. The region has experienced and learned from past inter-city connection efforts. Although a hyperloop's primarily underground structure, if feasible, would mitigate some expected opposition, individuals, organizations, and communities must understand and value this connection for it to work.

GWC has laid the groundwork to familiarize organizations and leaders with the hyperloop concept, including members of Minnesota's Legislature and Congressional delegation. We've met with various reactions, from skepticism to bright-eyed excitement. We understand the significant education and engagement work necessary. We will build cross-sector partnerships and coalitions needed for successful implementation.

(Limit 2,800 characters; approximately 400 words)

B. Identify the funding partners and amounts of local match provided.

Response:

See the budget for the feasibility study (Attachment 2). It reflects planned contractual partnerships with the U.S.-based Hyperloop Transportation Technologies, Inc., the University of Minnesota, and independent private sector partners and contributors to the feasibility study. GWC would facilitate an advisory team of public and private partners and stakeholders to provide guidance and oversight for the study.

GWC requests a $2 million grant. We'll raise the balance, surpassing the 20 percent required match, from public and private organizations in Rochester and the Twin Cities, demonstrating project support. Note: Funds allocated by the Legislature as 'matching funds' may also be available.

GWC and HyperloopTT will establish a public-private partnership (P4) to raise or contribute $500,000 to fund the balance of the feasibility study budget, leveraging a $2 million grant from the Met Council. To some extent, the Met Council grant will make the prospect of building a hyperloop in Minnesota fully real and within reach, pushing through some skepticism that Minnesota is actually up to accomplishing this, and reticence to be 'the first bird off of the wire' to support exploring this new technology.

That said, at the time of this proposal's submission, GWC is in conversations with Bloomington Port Authority to serve as a partner and public fiscal agent, as potential host to a Twin Cities terminal. Conversations with other potential partners, including those represented by the attached letters of support, continue to broaden and deepen.

(Limit 2,800 characters; approximately 400 words)

Attachments

File Name	Description	File Size
202312071451 (1).pdf	Letter of support from Mayor Kim Norton, City of Rochester, for GWC's Hyperloop Feasibility Study	548 KB
Bloomington_lett.pdf	City of Bloomington, letter of support for GWC's Hyperloop feasibility study	623 KB
Endnotes_GWC Hyperloop application - Google Docs.pdf	Endnotes to cited information sources or further explanation	84 KB
Global Wellness Connections grant support letter.pdf	Mayo Clinic support letter	57 KB
Greater MSP_lett.pdf	Greater MSP, letter of support for GWC's Hyperloop feasibility study	456 KB
GWC Hyperloop One-Pager - Google Docs.pdf	One-pager, summary document of GWC-Hyperloop project application	66 KB
Mark?s letter of support! - donnajgkoren@gmail.com - Gmail.pdf	Mark Ritchie, Expo Educ. Fund's letter of support for GWC's Hyperloop feasibility study	542 KB
Metropolitan Council Letter, Fisher (1).pdf	Letter of support from Tom Fisher, U of M College of Design for GWC's Hyperloop feasibility study	65 KB
Project Budget v6.090623dk GWC.xlsx - Google Sheets.pdf	GWC-Hyperloop feasbility study Project budget, detailed	120 KB

ROCHESTER
OFFICE OF
THE MAYOR

City of Rochester
201 4th Street SE - STE 281
Rochester, MN 55904-3782

Phone: 507-328-2700
Fax: 507-328-2727

December 7, 2023

Dear Metropolitan Council, Technical Advisory Board:

The City of Rochester supports Global Wellness Connections' grant application for a technical and economic feasibility study to examine a potential ultra-high-speed, carbon-neutral hyperloop connection between the Twin Cities and Rochester. As the proposed anchor city on the south end of this route, we are excited at the prospect of better understanding, through the feasibility study, the potential for essentially joining the two economic regions.

The economic and quality of life benefits from joining the two regions with a 12-minute transportation mode seem abundant. Greater access to well-paying work, more affordable housing for workers and families, and economic development in the form of new ancillary businesses related to a hyperloop are among the questions that will be researched in the feasibility study. A feasibility study is necessary to quantify the benefits, examine the risks, and conduct the necessary technical analysis.

If the results of the feasibility study are positive, the public-private partnership created by this endeavor would facilitate *private* investment funding for construction of a future line. Public investment for the feasibility study demonstrates Minnesota's readiness as a state to be a transportation leader in this 21st-century transportation technology.

Climate change is bearing down upon the planet, and Minnesota and the upper-midwest are not immune. Minnesota must do our part to contribute to both mitigation and resilient adaptation.

Hyperloop projects are in various stages of development across the United States, and a passenger route is set to open in Italy, for the 2026 Winter Olympics. This transportation technology is here. Building an early route of a carbon-neutral hyperloop network would significantly contribute to decreasing Minnesota's carbon emissions, while potentially providing social, health, and economic benefits. And it would position Minnesota as a national leader in significantly reducing transportation's carbon emissions, as well as creating a sustainable, equitable blueprint for hyperloop implementation. We support a feasibility study to better understand this potential.

Thank you for your consideration,

Kim Norton, Mayor
City of Rochester, Minnesota

CITY OF
BLOOMINGTON
MINNESOTA

December 6, 2023

Elaine Koutsoukos, TAB Coordinator
Transportation Advisory Board
390 North Robert Street
St. Paul, MN 55101

Dear Transportation Advisory Board, Technical Advisory Committee:

I am writing on behalf of the City of Bloomington and the Bloomington Port Authority in support of the grant application of Global Wellness Connections for funding a technical and economic feasibility study of the potential for an ultra-high-speed, carbon-neutral hyperloop connection between the Twin Cities and Rochester, Minnesota.

A feasibility study is necessary to quantify the benefits, examine the risks, and conduct the necessary technical analysis of such a potential connection by high-speed underground rail between the Minneapolis – St. Paul region and Rochester, Minnesota. If the results of the feasibility study are positive, it would facilitate private investment funding for construction of a future line.

Public investment for the feasibility study demonstrates our readiness as a state to be a transportation leader in this 21st-century transportation technology and allow for the creation of a true multi-modal transportation system between these two vitally important economic areas of our state.

Climate change is bearing down upon the planet, and Minnesota and the upper-midwest are not immune; and we must do our part to contribute to both mitigation and resilient adaptation. Building an early leg of carbon-neutral hyperloop network would significantly contribute to decreasing Minnesota's carbon emissions, while potentially providing social, health, and economic benefits. The economic and quality of life benefits from joining the two regions with a 12-minute carbon-free mode of transportation seem abundant, with racial equity a significant factor in such a line, as there would be the ability to get to good paying jobs which don't need to be accessed by motor vehicle.

Thank you for your consideration of this grant application.

Sincerely,

Jamie Verbrugge
City Manager
City of Bloomington, MN

JAMIE VERBRUGGE • CITY MANAGER
800 W. OLD SHAKOPEE ROAD, BLOOMINGTON MN 55431-3027
H 952-563-8780 FAX 952-563-8754 MN RELAY 711

Endnotes
Attachment 1

[1] The City of Bloomington, through its economic development entity, the Bloomington Port Authority; University of Minnesota: The Hubert H. Humphrey School of Public Affairs, College of Design, and the Minnesota Geological Survey, as of this proposal's submission. Broader engagement from other areas of the U of M is anticipated.

[2] https://www.hyperlooptt.com/technology/

[3] https://www.glhyperloopoutreach.com/

[4] https://www.hyperlooptt.com/2022/hyperloop-advances-in-italy/

[5] "Midwest High Speed Rail Association, The Economic Impacts of High-Speed Rail: Transforming the Midwest." AECOM, Economic Development Research Corp, Siemens. May 2011

[6] https://dmc.mn/ and https://www.mprnews.org/story/2023/11/28/mayo-clinic-unveils-plans-for-a-new-5-billion-campus-in-downtown-rochester

[7] The Infrastructure Investment and Jobs Act (IIJA) https://mn.gov/mmb/budget/iija/ and the Inflation Reduction Act (IRA) https://www.mprnews.org/story/2023/08/12/making-sure-minnesota-gets-its-share-of-green-energy-money

[8] https://climate.state.mn.us/minnesotas-climate-action-framework

[9] https://lab2.future-iq.com/wp-content/uploads/2022/09/The-Future-of-Wellbeing-web.pdf

[10] https://www.nytimes.com/2023/03/10/realestate/duluth-minnesota-climate-change.html?searchResultPosit ion=2

[11] https://www.iea.org/search?q=2022%20emissions%20transportation

[12] https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation

[13] https://www.enterpriseminnesota.org/wp-content/uploads/2022/11/EMN-State-of-Manufacturing-2022-Presentation_Final_.pdf (Slide 12)

[14] https://mn.gov/deed/data/current-econ-highlights/job-vacancies.jsp

MAYO CLINIC

December 22, 2023

Dear Metropolitan Council, Technical Advisory Board:

Mayo Clinic supports the Global Wellness Connections' grant application for a technical and economic feasibility study to examine a potential ultra-high-speed, carbon-neutral hyperloop connection between the Twin Cities and Rochester. We appreciate the foresight and leadership to explore emerging transportation methods and technology that can better connect two of the state's economic and innovation hubs.

Thank you for your consideration,

Erin C. Sexton
Senior Director, External Relations

GREATER MSP
Minneapolis Saint Paul Regional Economic Development Partnership

December 7, 2023

Dear Metropolitan Council Technical Advisory Board:

The GREATER MSP Partnership is supportive of the Global Wellness Connections' grant application for a technical and economic feasibility study to examine a potential ultra-high-speed, carbon-neutral hyperloop connection between the Minneapolis-Saint Paul region and Rochester.

In the past several years, GREATER MSP and GWC have partnered on several projects to plan for long-range, sustainable, equitable growth for Minnesota and our region. In 2022, GREATER MSP co-sponsored The Future of Wellbeing project, initiated by GWC. Last year, GWC supported our efforts to secure a federal EDA grant. We currently are working together on another GWC initiative, to expand international transportation options for Minnesota's medical device sector.

We look forward to this continued, growing partnership, and working with GWC and their public- and private-sector partners on the technical and economic feasibility study for a high-speed connection between our region and Rochester.

The economic and quality-of-life benefits from connecting the two regions with a 12-minute transportation mode seem abundant, including greater access to good jobs, more affordable housing options for workers and families, and economic development in the form of new ancillary businesses related to a hyperloop. Additionally, a high-speed, carbon neutral transportation link would enhance the State's resilience in the face of a changing climate. A feasibility study is necessary to quantify the benefits, examine the risks, and conduct technical analysis.

If the results of the feasibility study are positive, the public-private partnership created by this endeavor would facilitate private investment funding for construction of a future line. Public investment for the feasibility study demonstrates Minnesota's readiness as a state to be a transportation leader in this 21st-century transportation technology. The hyperloop being constructed in Italy to support the 2026 Olympic Games is evidence this transportation technology is real and ready for deployment.

Thank you for your consideration,

Peter Frosch
Chief Executive Officer
GREATER MSP Partnership

400 Robert Street North I Suite 1600 I Saint Paul, Minnesota 55101 I 651.287.1300

Project name

Catalyzing a Wellness Corridor: Understanding the Technical Feasibility and Social and Economic Benefits of Connecting the Twin Cities Metro Region and Rochester via Hyperloop

Applicant

Global Wellness Connections 501(c)(3)

Location

Dakota and Hennepin Counties, with benefits to surrounding areas and down to Rochester and surrounding areas, roughly the route of Hwy 52

Requested award amount $2 million **Project cost** $2.5 million

Project description

Global Wellness Connections, the Cities of Bloomington and Rochester, and the University of Minnesota propose conducting a technical and economic feasibility study as the first step toward an ultra-high-speed connection between the Twin Cities and Rochester.

A route between the Twin Cities and Rochester is envisioned primarily underground, using existing public rights-of-way, leaving farmlands and communities undisturbed. The feasibility study would evaluate the engineering, geologic and hydrologic feasibility of underground construction between the two regions. A **carbon-neutral** hyperloop from the Twin Cities to Rochester could transport people and light freight in under 15 minutes, 24/7, ultimately traveling over 700 mph.

The feasibility study is proposed as a robust public-private partnership.

Benefits

- Create an ultra-high-speed connection between the Twin Cities and Rochester
- Effectively merge the labor markets of the Twin Cities and Rochester by providing a safe, fast, secure transport of workers and high-value freight, such as medical devices and time-sensitive biologics, between the Twin Cities and Rochester
- Catalyze development and greater accessibility to affordable housing, sustainable work, and other significant quality of life factors, that have been disproportionately less accessible to BIPOC populations, people with disabilities or limited access to cars, and the aged, because of more-limited mobility options
- Provide hyperloop terminals in the Twin Cities co-located with existing transit resources, and spur additional and integrated transit along the Hwy 52 corridor and across the Metro region
- Reduce single-occupant vehicle (SOV) trips and peak-hour auto trips; increase multiple-occupant vehicle trips and increase non-motorized trips
- Reduce commuting traffic on area highways by thousands of vehicles, and associated preservation costs; **reduce associated greenhouse gas emissions**, every day
- Reduce surface and structured parking requirements in Rochester.

Met Council Letter.docx Open with Google Docs

World's Fair Bid Committee Educational Fund

November 10, 2023

Mark Ritchie, Chair
World's Fair Bid Committee Educational Fund
1813 Girard South
Minneapolis, MN 55403

Dear Metropolitan Council, Technical Advisory Board,

I have spent the better part of four decades traveling back and forth between the Twin Cities and Olmsted County, both for business reasons and to visit with family who farm near Rochester. Each decade it has become more difficult and time-consuming to make this trip by personal automobile but new options have not yet emerged.

I write in strong support for the grant application for a technical and economic feasibility study developed by the Global Wellness Connection non-profit association. Their proposed examination of the feasibility of an ultra-high-speed, carbon-neutral hyperloop connection between the Twin Cities and Rochester would be a crucial step towards finding a solution to the terrible lack of connection between our two metropolitan areas.

There could be many benefits from connecting these (and other) regions with a 21st century mode of travel. Staffing needs at Mayo and Twin Cities healthcare facilities comes to mind. Reducing climate and air quality impacts is another set of potential benefits. A feasibility study is a logical next step in solving this problem.

Minnesota, and our whole region, are going to be under great pressure to do something positive in regards to both sustainable transportation and reducing our carbon footprint. For these and other practical reasons, like wanting to drive less without losing mobility, I strongly support the GWC's grant proposal.

Sincerely,

Mark Ritchie

Mark Ritchie, Chair
World's Fair Bid Committee Educational Fund

UNIVERSITY OF MINNESOTA

Twin Cities Campus

Minnesota Design Center
College of Design

110 Northrop Memorial Auditorium
84 Church Street SE
Minneapolis, MN 55455

www.designcenter.umn.edu
612-625-9000
mdc@umn.edu

November 13, 2023

Metropolitan Council
390 Robert St. North
St. Paul, MN 55101-1805

Dear Metropolitan Council Technical Advisory Board,

I am writing to support Global Wellness Connections' grant application for a technical and economic feasibility study to examine a potential ultra-high-speed, carbon-neutral hyperloop connection between the Twin Cities and Rochester.

The economic and quality of life benefits from joining the two regions with a 12-minute transportation mode seem abundant. Greater access to well-paying work, more affordable housing for workers and families, and economic development in the form of new ancillary businesses related to a hyperloop are among the questions that will be researched in the feasibility study. A feasibility study is necessary to quantify the benefits, examine the risks, and conduct the necessary technical analysis.

If the feasibility study results are positive, the public-private partnership created by this endeavor would facilitate *private* investment funding to construct a future line. Public investment for the feasibility study demonstrates our readiness as a state to be a transportation leader in this 21st-century transportation technology.

Climate change is bearing down upon the planet, and Minnesota and the upper-Midwest are not immune. And we must do our part to contribute to both mitigation and resilient adaptation. Building an early leg of a carbon-neutral hyperloop network would significantly decrease Minnesota's carbon emissions while potentially providing social, health, and economic benefits. We support a feasibility study to understand this potential better.

Thank you for your consideration,

Thomas Fisher
Professor and Director

Global Wellness Connections

Preliminary Technical and Economic Feasibility Study

~~Feasibility study budget for a hyperloop connecting the~~
Twin Cities to Rochester, Minnesota

Confidential Business Information

Program Budget

[redacted]