



Application

04778 - 2016 Transit System Modernization

05326 - Metro Transit, Green Line Energy Recovery System, St Paul-Minneapolis (Traction Power Energy Recovery)

Regional Solicitation - Transit and TDM Projects

Status: Submitted
Submitted Date: 07/14/2016 9:07 PM

Primary Contact

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Salutation First Name Middle Name Last Name

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***** Minneapolis Minnesota 55411
City State/Province Postal Code/Zip

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Phone Ext.

Fax:

What Grant Programs are you most interested in? Regional Solicitation - Transit and TDM Projects

Organization Information

Name: Metro Transit

Jurisdictional Agency (if different):

Organization Type: Metropolitan Council

Organization Website:

Address: 560 Sixth Avenue North

***** Minneapolis Minnesota 55411
City State/Province Postal Code/Zip

County: Hennepin

Phone:* 651-602-1000
Ext.

Fax:

PeopleSoft Vendor Number METROTRANSIT

Project Information

Project Name Green Line Energy Storage Recovery System

Primary County where the Project is Located Hennepin, Ramsey

Jurisdictional Agency (If Different than the Applicant):

Normally a train brakes by using the traction motors or friction brakes (or both). In these cases, if the transfer of energy to another train - receptivity - cannot be optimized, the braking energy of the train is lost as heat. As trains are heavy and move at high speeds, the amount of energy lost every time the train slows is considerable. In order to accelerate the train, the traction motors draw "new" power from the electrical supply to generate torque at the wheels. This is an expensive use of power that can lead to power demand surges or shortages across the network.

Metro Transit seeks to add braking energy recovery systems on the Green Line light rail line. This emerging technology allows a wayside energy storage system to capture the energy generated by braking trains and apply the energy to the train's subsequent acceleration. Without this technology, the energy from one train braking can only be used if another train is simultaneously accelerating in the same area, which is typically not the case, so most of the time this braking energy is lost. The application of this technology now will not only result in reduced energy use, but will also open the door for more widespread implementation and additional energy savings through applications of this technology on future light rail lines. These energy savings will reduce operational costs linked to energy processes and lower Metro Transit's contribution to CO2 emissions and other emissions produced by electric plants.

For the Risk assessment, this equipment will require construction for installation, but it will be located adjacent to 3 of the Green Line's Traction Power Substations that have already completed an environmental analysis.

Brief Project Description (Limit 2,800 characters; approximately 400 words)

Include location, road name/functional class, type of improvement, etc.

TIP Description Guidance (will be used in TIP if the project is selected for funding)

It is included in the Metropolitan Council Comprehensive Capital Improvement Plan (C.I.P)

Project Length (Miles)

9.33

Project Funding

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

No

If yes, please identify the source(s)

Federal Amount

\$3,200,000.00

Match Amount

\$800,000.00

Minimum of 20% of project total

Project Total

\$4,000,000.00

Match Percentage

20.0%

Minimum of 20%

Compute the match percentage by dividing the match amount by the project total

Source of Match Funds

Regional Transit Capital bonds (R.T.C)

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:

2020

For TDM projects, select 2018 or 2019. For Roadway, Transit, or Trail/Pedestrian projects, select 2020 or 2021.

Additional Program Years:

2017, 2018, 2019

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

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES

	Cost
Mobilization (approx. 5% of total cost)	\$0.00
Removals (approx. 5% of total cost)	\$0.00
Roadway (grading, borrow, etc.)	\$0.00
Roadway (aggregates and paving)	\$0.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$0.00
Ponds	\$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$0.00
Traffic Control	\$0.00
Striping	\$0.00

Signing	\$0.00
Lighting	\$0.00
Turf - Erosion & Landscaping	\$0.00
Bridge	\$0.00
Retaining Walls	\$0.00
Noise Wall (do not include in cost effectiveness measure)	\$0.00
Traffic Signals	\$0.00
Wetland Mitigation	\$0.00
Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$0.00
Other Roadway Elements	\$0.00
Totals	\$0.00

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	\$0.00
Sidewalk Construction	\$0.00
On-Street Bicycle Facility Construction	\$0.00
Right-of-Way	\$0.00
Pedestrian Curb Ramps (ADA)	\$0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	\$0.00
Pedestrian-scale Lighting	\$0.00
Streetscaping	\$0.00
Wayfinding	\$0.00
Bicycle and Pedestrian Contingencies	\$0.00
Other Bicycle and Pedestrian Elements	\$0.00
Totals	\$0.00

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	\$4,000,000.00
Stations, Stops, and Terminals	\$0.00

Support Facilities	\$0.00
Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	\$0.00
Vehicles	\$0.00
Contingencies	\$0.00
Right-of-Way	\$0.00
Other Transit and TDM Elements	\$0.00
Totals	\$4,000,000.00

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	\$0.00
Subtotal	\$0.00
Other Costs - Administration, Overhead, etc.	(\$200,000.00)

Totals

Total Cost	\$3,800,000.00
Construction Cost Total	\$4,000,000.00
Transit Operating Cost Total	(\$200,000.00)

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, the 2040 Regional Parks Policy Plan (2015), 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 objectives and strategies that relate to the project.

Goal B: Security and Safety

The regional transportation system is safe and secure for all users.

Objectives:

A. Reduce crashes and improve safety and security for all modes of passenger travel and freight transport.

Strategies:

B1. Regional transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, operation.

List the goals, objectives, strategies, and associated pages:

Chapter 2, Pg. 2.20

Goal E: Healthy Environment

The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments. Electric transit modes improve local air quality and this project will reduce regional emissions from generated electrical power.

Objectives:

A. Reduce transportation-related air emissions.

B. Reduce impacts of transportation construction, operations, and use on the natural, cultural, and developed environments.

C. Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities and active car-free lifestyles.

D. Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under represented populations.

Strategies:

E1. Regional transportation partners recognize the role of transportation choices in reducing emissions and will support state and regional goals for reducing greenhouse gas and air pollutant emissions. The Council will provide information and technical assistance to local governments in measuring and reducing transportation-related emissions.

E2. The Council and MnDOT will consider reductions in transportation-related emissions of air pollutants and greenhouse gases when prioritizing transportation investments.

Chapter 2, Pg. 2.42, 2.43

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:

1. Thrive MSP 2040; Pg. 64.

4. The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of bicycle/pedestrian projects, 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.

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

5. Applicants that are not 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.

Transit Expansion: \$500,000 to \$7,000,000

Travel Demand Management (TDM): \$75,000 to \$300,000

Transit System Modernization: \$100,000 to \$7,000,000

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

8. The project must comply with the Americans with Disabilities Act.

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

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

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

10. The owner/operator of the facility must operate and maintain the project for the useful life of the improvement.

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

11. 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

12. 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

13. 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

Requirements - Transit and TDM Projects

For Transit Expansion Projects Only

1. The project must provide a new or expanded transit facility or service (includes peak, off-peak, express, limited stop service on an existing route, or dial-a-ride).

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

2. The applicant must have the capital and operating funds necessary to implement the entire project and commit to continuing the service or facility project beyond the initial three-year funding period for transit operating funds.

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

3. The project is not eligible for either capital or operating funds if the corresponding capital or operating costs have been funded in a previous solicitation. However, Transit Modernization projects are eligible to apply in multiple solicitations if new project elements are being added with each application.

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

Transit Expansion and Transit System Modernization projects only:

4. The applicant must affirm that they are able to implement a Federal Transit Administration (FTA) funded project in accordance with the grant application, Master Agreement, and all applicable laws and regulations, using sound management practices. Furthermore, the applicant must certify that they have the technical capacity to carry out the proposed project and manage FTA grants in accordance with the grant agreement, sub recipient grant agreement (if applicable), and with all applicable laws. The applicant must certify that they have adequate staffing levels, staff training and experience, documented procedures, ability to submit required reports correctly and on time, ability to maintain project equipment, and ability to comply with FTA and grantee requirements.

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

Measure A: Project Location Relative to Jobs, Manufacturing, and Education

Existing Employment within 1/4 (bus stop) or 1/2 mile (transitway station) buffer 143592

Post-Secondary Enrollment within 1/4 (bus stop) or 1/2 mile (transitway station) buffer 167934

Existing employment outside 1/4 or 1/2 mile buffer to be served by shuttle service (Letter of Commitment required)

Upload the "Letter of Commitment" on the 'Other Attachments' Form.

Existing Post-Secondary Enrollment outside 1/4 or 1/2 mile buffer to be served by shuttle service (Letter of Commitment required)

Upload the "Letter of Commitment" on the 'Other Attachments' Form.

Explanation of last-mile service, if necessary (Limit 1,400 characters; approximately 200 words):

Upload Map 1467821895207_Population Summary and Reginal Economy Map.pdf

Measure B: Transit Ridership

Select multiple routes

Existing transit routes directly connected to the project 2, 3, 6, 7, 16, 21, 22, 30, 62, 63, 65, 67, 83, 84, 87, 94, 129, 134, 262, 902-METRO Green Line

Planned Transitways directly connect to the project (mode and alignment determined and identified in the 2040 TPP) Southwest LRT (METRO Green Line Extension), Bottineau LRT (METRO Blue Line Extension), Snelling Avenue BRT (A Line), Gateway BRT (METRO Gold Line)

Upload Map 1467821968971_Transit Connections Map.pdf

Response

Met Council Staff Data Entry Only

Average number of weekday trips 0

Measure: Usage

Existing Transit Routes on the Project 2, 3, 6, 7, 16, 21, 22, 30, 62, 63, 65, 67, 83, 84, 87, 94, 129, 134, 262

Measure A: Project Location and Impact to Disadvantaged Populations

Select all that apply:

Projects service directly connects to Area of Concentrated Poverty with 50% or more of residents are people of color (ACP50). Yes

Projects service directly connects to Area of Concentrated Poverty Yes

Projects service directly connects to census tracts that are above the regional average for population in poverty or population of color Yes

Projects service directly connects to a census tract that is below the regional average for population in poverty or populations of color, or includes children, people with disabilities, or the elderly

Response (Limit 2,800 characters; approximately 400 words)

According to the Metropolitan Council policy related to Title VI states; "The Metropolitan Council pledges that you will have access to all its program, services and benefits without regard to race, color, national origin, sex, age, disability or socio-economic status." The major advantage of the Metro Transit Green Line Energy Recovery System, St Paul-Minneapolis (Traction Power Energy Recovery) is to ensure that Metro Transit, to the best of its ability, promotes the efficient use of regenerative energy and energy saving which inherently reduces global warming (reduce CO2 gas). This will not only benefits the low-income populations, people of color, children, people with disabilities, and the elderly, but it will benefit the entire community.

Upload Map 1467818568459_Socio-Economic Conditions.pdf

Measure B: Affordable Housing

City/Township

Number of Stops in City/Township

Minneapolis	4.0
St. Paul	14.0
	18

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

City/Township	Number of Stops in City/Township	Total Number of Stops	Score	Number of Stops/Total Number of Stops	Housing Score Multiplied by Segment percent
		0	0	0	0

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

Total Number of Stops in City	18.0
Total Housing Score	0

Measure A: Project Elements that Reduce VMT/SOV Trips and Improve Energy Efficiency

Metro Transit's Energy Storage System Project has goals of storing energy from decelerating trains and using it for accelerating trains while reducing energy, emission and demand costs. Without the Traction Power Energy Storage System, the energy generated by a braking vehicle would be simply converted into waste heat. Because, as a rule, such synchronization of braking and powering cannot be coordinated, the energy storage system stores the energy generated during braking and discharges it again when a vehicle is powered. This greatly reduces primary energy demand in traction power substation. However, in addition to this energy saving, the energy storage system contributes to the reduction of CO₂e emissions.

Response (Limit 2,100 characters; approximately 300 words)

Each energy traction power system reduces propulsion consumption (kWh) by 5% of the total propulsion energy, or 850,000 kWh, according to the proposed system specs. Metro Transit will install three systems along the Green Line LRT, one system in 2017 and two additional systems in 2018. This project will reduce carbon emissions and criteria pollutants, as well as reduce the energy intensity (kWh/rider) of the Green Line LRT. Metro Transit consistently seeks opportunities to move more passengers using less energy and this project will support that goal. We anticipate reduction of the following gasses in (tons):

CO₂ reduced = 1,64.40 tons

NO_x reduced = 2.05 tons

NO₂ reduced = 8.70 tons

CH₄ reduced = 0.66 tons

SO₂ reduced = 3.75 tons

This Calculation is based on the EPA's EGRID2012 Summary Tables for Criteria Pollutants (see attachment)

Measure A: Travel Time

Current Passenger Travel Time (Minutes)	37.0
Proposed Passenger Travel Time (Minutes)	37.0
Reduction in Travel Time	0%

Measure B: Operating Costs

Current Annual Transit Operating Costs	1931802.0
Proposed Annual Transit Operating Costs	1738621.8
Reduction in Operating Cost	10.0%

Description of how the proposed cost change was determined (Limit 2,800 characters: approximately 400 words).

The current and proposed annual operating costs shown above is only the electrical cost associated with powering the Light Rail Vehicles at electrical rates conservatively estimating a 10% reduction in electric cost. We are anticipating up to a 15% reduction of costs based on reports from other transit agencies, such as SEPTA (Philadelphia) and MBTA (Boston), who are implementing a similar energy storage systems. It does not include the entire operating cost of the Green Line.

Measure C: Improvements and Amenities

One reason some customers are attracted to public transportation is the environmental benefits of leaving their personal vehicle at home to reduce their own footprint on the environment. Installing the Green Line Energy Storage System will further reinforce Metro Transit's commitment to the environment by operating its system more efficiently. Keeping overall operational costs down will also help to keep fares at the current level, which benefits all customers. Some other benefits and advantages of the system are;

Response (Limit 2,800 characters; approximately 400 words)

- Good cost performance ratio
- Very high peak power
- High rated power
- Refitting of existing systems
- Simple technical solution in means of a high availability

Measure A: Roadway, Bicycle, and Pedestrian Improvements

Response (Limit 2,800 characters; approximately 400 words) N/A

Transit Projects Not Requiring Construction

If the applicant is completing a transit or TDM application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.

Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment

1) Project Scope (5 Percent of Points)

Meetings or contacts with stakeholders have occurred

100%

Stakeholders have been identified

40%

Stakeholders have not been identified or contacted

Yes

0%

2)Layout or Preliminary Plan (5 Percent of Points)

Layout or Preliminary Plan completed

100%

Layout or Preliminary Plan started

50%

Layout or Preliminary Plan has not been started

Yes

0%

Anticipated date or date of completion

02/01/2018

3)Environmental Documentation (5 Percent of Points)

EIS

EA

PM

Document Status:

Document approved (include copy of signed cover sheet)

100%

Document submitted to State Aid for review

75%

date submitted

Document in progress; environmental impacts identified; review request letters sent

50%

Document not started

0%

Anticipated date or date of completion/approval

4)Review of Section 106 Historic Resources (10 Percent of Points)

No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge

100%

Historic/archeological review under way; determination of no historic properties affected or no adverse effect anticipated

80%

Historic/archeological review under way; determination of adverse effect anticipated

40%

Unsure if there are any historic/archaeological resources in the project area Yes

0%

Anticipated date or date of completion of historic/archeological review:

Project is located on an identified historic bridge

5)Review of Section 4f/6f Resources (10 Percent of Points)

4(f) Does the project impacts any public parks, public wildlife refuges, public golf courses, wild & scenic rivers or public private historic properties?

6(f) Does the project impact any public parks, public wildlife refuges, public golf courses, wild & scenic rivers or historic property that was purchased or improved with federal funds?

No Section 4f/6f resources located in the project area

100%

No impact to 4f property. The project is an independent bikeway/walkway project covered by the bikeway/walkway Negative Declaration statement; letter of support received

100%

Section 4f resources present within the project area, but no known adverse effects

80%

Project impacts to Section 4f/6f resources likely coordination/documentation has begun

50%

Project impacts to Section 4f/6f resources likely coordination/documentation has not begun

30%

Unsure if there are any impacts to Section 4f/6f resources in the project area Yes

0%

6)Right-of-Way (15 Percent of Points)

Right-of-way, permanent or temporary easements not required Yes

100%

Right-of-way, permanent or temporary easements has/have been acquired

100%

Right-of-way, permanent or temporary easements required, offers made

75%

Right-of-way, permanent or temporary easements required, appraisals made

50%

Right-of-way, permanent or temporary easements required, parcels identified

25%

Right-of-way, permanent or temporary easements required, parcels not identified

0%

Right-of-way, permanent or temporary easements identification has not been completed

0%

Anticipated date or date of acquisition

7)Railroad Involvement (25 Percent of Points)

No railroad involvement on project Yes

100%

Railroad Right-of-Way Agreement is executed (include signature page) 100%

Railroad Right-of-Way Agreement required; Agreement has been initiated

60%

Railroad Right-of-Way Agreement required; negotiations have begun

40%

Railroad Right-of-Way Agreement required; negotiations not begun

0%

Anticipated date or date of executed Agreement

8)Interchange Approval (15 Percent of Points)*

**Please contact Karen Scheffing at MnDOT (Karen.Scheffing@state.mn.us or 651-234-7784) to determine if your project needs to go through the Metropolitan Council/MnDOT Highway Interchange Request Committee.*

Project does not involve construction of a new/expanded interchange or new interchange ramps Yes

100%

Interchange project has been approved by the Metropolitan Council/MnDOT Highway Interchange Request Committee

100%

Interchange project has not been approved by the Metropolitan Council/MnDOT Highway Interchange Request Committee

0%

9)Construction Documents/Plan (10 Percent of Points)

Construction plans completed/approved (include signed title sheet)

100%

Construction plans submitted to State Aid for review

75%

Construction plans in progress; at least 30% completion

50%

Construction plans have not been started

Yes

0%

Anticipated date or date of completion

08/01/2018

10) Letting

Anticipated Letting Date

04/01/2019

Measure: Cost Effectiveness of Emissions Reduction

Total Annual Operating Cost: \$8,160.00

Total Annual Capital Cost of Project \$160,000.00

Total Annual Project Cost \$168,160.00

The annual operating cost is calculated based on internal maintenance staff doing a monthly inspection of the systems.

Assumption Used (Limit 1400 Characters; approximately 200 words):

The life expectancy of this system is not included in the FTA list, but we anticipate the system's life expectancy to be 25 years which matches the FTA guideline on a traction power substation.

(Limit 1400 Characters; approximately 200 words)

Points Awarded in Previous Criteria

Cost Effectiveness \$0.00

Other Attachments

File Name	Description	File Size
Green Line Energy Recovery System Emission Reduction Info..pdf	Green Line LRT Energy Projections	41 KB
Green Line ERSS Letter 1.pdf	Authorization Letter	27 KB

Regional Economy

Results

WITHIN ONE MI of project:

Total Population: 202459
Total Employment: 357389
Mfg and Dist Employment: 21975

Postsecondary Students:
167934



○ Project Points

— Project



Created: 7/6/2016
LandscapeRSA5



For complete disclaimer of accuracy, please visit
<http://giswebsite.metro.state.mn.us/gissitenew/notice.aspx>



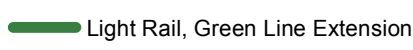




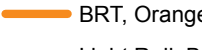
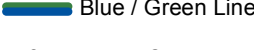

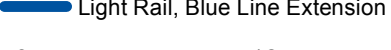


Results

Transit within QTR mile of project:
 2 3 6 7 16 21 22 30 53 54 61
 62 63 64 65 67 68 70 71 74 75 83
 84 87 94 111 113 114 118 120 121 122 129
 250 252 262 263 264 265 272 275 288 294 350
 351 353 355 361 364 365 375 417 452 465 475
 480 484 489 490 579 652 684 695 698 860 902
 921
 *East 7th
 *Lake
 *Robert
 *Gold Line

Transit within HALF mile of project:
 2 3 6 7 14 16 21 22 30 53 54
 61 62 63 64 65 67 68 70 71 74 75
 83 84 87 94 111 113 114 118 120 121 122
 129 134 250 252 262 263 264 265 272 275 288
 294 350 351 353 355 361 364 365 375 417 452
 465 475 480 484 489 490 579 652 684 695 698
 860 901 902 921
 *East 7th
 *Lake
 *Robert
 *Gold Line

*indicates Planned Alignments

	Project Points		Blue Line	Planned Alignments		Light Rail, Green Line Extension
	Project		Green Line		Arterial BRT	
Transitway			Northstar Line		BRT, Orange Line	
	Blue / Green Line		Red Line		Light Rail, Blue Line Extension	



NCompass Technologies



Created: 7/6/2016
 LandscapeRSA3



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Results

Project located IN
 Area of Concentrated Poverty
 with 50% or more of residents
 are people of color (ACP50):
 (0 to 30 Points)



- Project Points
- Project
- Area of Concentrated Poverty > 50% residents of color

- Area of Concentrated Poverty
- Above reg'l avg conc of race/poverty



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 LandscapeRSA2



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<http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



NCompass Technologies

Green Line LRT Energy Projections

Year	Elec - Propulsion	Elec - Utility	Utility reductions	Propulsion Reduction	Total Electricity	Ridership	kwh/rider
2016	17,000,000	7,147,126			24,147,126	11,000,000	2.20
2017	16,150,000	7,147,126		5% Propulsion Reduction	23,297,126	11,110,000	2.10
2018	14,450,000	7,147,126		10% Propulsion Reduction	21,597,126	11,221,100	1.92
2019	14,450,000	7,147,126			21,597,126	11,333,311	1.91

Energy projections calculated by Metro Transit and Environmental Services staff using historical data trends and ridership projections from Transit's Finance Department.

Project Emission Reductions (tons)

Year	CO ₂	N ₂ O	CH ₄	SO ₂	NO _x
2017	549.47	2.90	0.22	1.25	0.68
2018	1098.94	5.80	0.44	2.5	1.37
Total	1648.40	8.70	0.66	3.75	2.05

Calculated using the EPA's EGRID2012 Summary Tables for Criteria Pollutants

Each energy traction power system reduces propulsion consumption (kWh) by 5% of the total propulsion energy, or 850,000 kWh, according to the proposed system specs. Metro Transit will install three systems along the Green Line LRT, one system in 2017 and two additional systems in 2018. This project will reduce carbon emissions and criteria pollutants, as well as reduce the energy intensity (kWh/rider) of the Green Line LRT. Metro Transit consistently seeks opportunities to move more passengers using less energy and this project will support that goal.



July 14, 2016

Elaine Koutsoukos
TAB Coordinator
390 N. Robert St.
St. Paul, MN 55101

RE: Regional Solicitation Applications

Dear Ms. Koutsoukos;

Metro Transit is submitting a Transit Modernization application to add braking energy recovery systems on the Green Line light rail line. This emerging technology allows a wayside energy storage system to capture the energy generated by braking trains and apply the energy to the train's subsequent acceleration.

This letter corresponds to general solicitation requirements in Section IV, required attachments:

- Metro Transit will have jurisdiction over the transit way in the project.
- Metro Transit will provide the required minimum 20% local match through Metropolitan Council Regional Transit Capital, Motor Vehicle Sales Tax revenues or other eligible non-federal funds available to Metro Transit in the program year.
- The project includes Metro Transit commitment to operate the system for its expected useful life.

We look forward to developing the project. Please contact me with any questions or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. J. Lamb'.

Brian J. Lamb
General Manager

CC: Mary Gustafson, Manager of Grants

A service of the Metropolitan Council