

**City of Bloomington
Department of Public Works
Preliminary Report/Feasibility Study**

Lindau Lane Improvement Project
City Project Number 2013-302
SAP 107-144-006

I. Scope of Work

The Lindau Lane Improvement Project consists of two of the five components identified to create an east-west complete street spine in the South Loop District. The two components in this improvement project are the Lindau Lane safety improvement at the northbound to eastbound ramp from Trunk Highway (TH) 77 (Cedar Ave) to Lindau Lane, and the Lindau Lane Grade Separation project between Ikea Way/ 20th Avenue and 24th Avenue (CSAH 1). These two components have been combined for construction efficiency and include the following tasks:

- A. Bridge Design
- B. Roadway / Retaining Wall Design
- C. Streetscape / Plaza Design
- D. Utility Design
- E. Mall of America (MOA) Requested Improvements
- F. Management of Traffic

A. Bridge Design

The 140-foot long by 170 foot wide bridge will consist of a two-span concrete slab superstructure with integrally cast abutments on the north and south sides of Lindau Lane. The center support is multi-column pier located in the median of Lindau Lane between the east and westbound lanes and will be protected from impacts by a crash strut running parallel to the curblines.

In the short term, the bridge will serve to connect at-grade parking on the north side of Lindau Lane to the Mall of America (MOA) located on the south side of Lindau Lane. The bridge is planned to include a landscaped pedestrian plaza with a loop road to serve as a drop-off location for either the existing bus canopy area or the proposed new MOA Phase 1C building entrance located just to the south of the bridge. In the future, the bridge will serve as support for the future retail development planned to extend on and over Lindau Lane. Provisions will be made, in coordination with the mall design team, to accommodate the additional loading imposed by the future building structure.

B. Roadway / Retaining Wall Design

The improvement project involves the profile adjustment of Lindau Lane between TH 77 and 24th Avenue, as well as the profile adjustment of the northbound 77 off ramp to eastbound Lindau Lane. The adjustment of Lindau Lane involves lowering the grade of the road approximately 20 feet in the vicinity of the bridge to allow for minimum truck clearance beneath the bridge. This roadway lowering requires the inclusion of five new retaining walls within the corridor, as well as the modification of three existing retaining walls along the MnDOT TH 77 ramps. Generally, the lane use for Lindau Lane will remain the same. Additional left turn lanes will be added to Ikea Way/20th Avenue, 22nd Avenue, and 24th Avenue to allow for improved traffic capacity in the future.

The adjustment of the northbound TH 77 ramp involves raising the profile in order to match the proposed eastbound Lindau Lane profile sooner allowing for northbound to eastbound ramp traffic to merge with southbound to eastbound traffic prior to reaching the intersection of Ikea Way. This allows for the removal of the median between eastbound traffic and a safer right-turn condition at 20th Avenue.

C. Streetscape/Plaza Design

Streetscape

Streetscape enhancements will be provided along Lindau Lane. The streetscape will serve to enhance aesthetics along the corridor and provide safe and efficient pedestrian movement along the corridor. Streetscape elements will include overstory and ornamental trees, shrub/perennial massings, ornamental street lighting, retaining wall enhancements, and ornamental metal fencing. ADA accessible sidewalks will provide pedestrian access to the pedestrian plaza and a signalized crossing at the intersection of Lindau Lane and 24th Avenue. Ornamental railings and fencing will be used to help direct pedestrians to use the sidewalks and discourage crossings of Lindau Lane at unintended locations.

Pedestrian Plaza

A pedestrian plaza will be constructed on top of the Lindau Lane bridge. The plaza will provide a grade-separated pedestrian connection between the current and proposed Mall of America (MOA) facilities to the south of Lindau Lane and parking areas to the north. In the future, the plaza area will be utilized to allow expansion of the MOA to the north side of Lindau Lane. The plaza area will include a drop-off lane and pedestrian thoroughfares separated from the vehicular way with trees in planters. The sidewalk pavements will be colored, scored concrete. The plaza will include additional pedestrian amenities such as bollards, signage site furnishings, additional landscaping, and lighting. The plaza will be ADA accessible and will serve to replace the current at-grade pedestrian crossings along Lindau Lane.

D. Utility Design

Storm Sewer Improvements

The storm sewer improvements will consist of both a shallow storm sewer system and a deep storm sewer system serving Lindau Lane. Much of the existing storm sewer in Lindau Lane will be removed, including the 48-inch trunk storm sewer. The shallow storm sewer system will collect Lindau Lane drainage from the Ikea Way and 22nd Avenue intersections. The trunk storm sewer will be increased to 72 inches for hydraulic purposes from TH 77 to 24th Avenue. The 72-inch trunk storm sewer will be rerouted to the north side of the bridge abutment between Ikea Way and 22nd Avenue because of the lowered profile, and return to the center of Lindau Lane from 22nd Avenue to 24th Avenue. The diversion structure in 24th Avenue will be removed and replaced. In addition, a 48-inch storm pipe will be constructed for hydraulic purposes on the north side of Lindau Lane from 22nd Avenue to 24th Avenue. The shallow storm sewer system will drain the proposed Pedestrian Plaza, improvements to the existing MOA parking lot north of Lindau Lane, and portions of the MOA Expansion Phase 1C.

The deep storm sewer system will collect Lindau Lane drainage between Ikea Way and 22nd Avenue in the lowered profile. A new 36-inch trunk storm sewer will run from the sag point of the lowered profile to the east within the eastbound lanes of Lindau Lane. The 36-inch storm sewer will be jacked under 24th Avenue and tie into a new 36-inch storm being constructed under City Project No. 2012-501. This project will construct a 36-inch trunk storm sewer on the east side of 24th Avenue from Lindau Lane to Killebrew Drive and is currently under construction, with an anticipated completion date of about June 2013. The deep storm sewer system will also drain the abutment and retaining wall foundation drainage systems.

Storm sewer improvements will also include the removal and replacement of the storm sewer system draining the northbound TH 77 to eastbound Lindau Lane ramp. This system will reconnect to MnDOT's TH 77 storm sewer system.

Sanitary Sewer Improvements

The sanitary sewer improvements will consist of constructing a 12-inch sanitary sewer from an existing manhole in the southwest corner of Lindau Lane and Ikea Way, under 20th Avenue, to the southwest corner of MOA Expansion Phase 1C. This sewer will provide the future sanitary service to the Phase 1C improvements.

The existing 15-inch sanitary sewer later at the northeast corner of Lindau Lane and Ikea Way will be removed and reinstalled to accommodate storm sewer improvements and the construction of a retaining wall. Other sanitary sewer improvements will consist of reconstructing several sanitary sewer manholes impacted by lowered grades.

Water Main Improvements

The water main improvements consist of the removal of a 12-inch water main that runs from the MOA loop under Lindau Lane to the west side of Ikea Way. The proposed water main improvements consist of the construction of a new 12-inch and 16-inch water main loop in 20th Avenue, Lindau Lane, and 22nd Avenue. This loop will allow for the future removal of the MOA water main in the ring road for Phase 1C improvements. At 20th Avenue, a 12-inch water main will connect to the existing 12-inch water main that runs on the east side of Ikea Way and connects to water main in American Boulevard. At 22nd Avenue, a 12-inch water main will be stubbed to the north for a future 12-inch water main connection on the north side of Lindau Lane that will serve future MOA development north of Lindau Lane.

The Bloomington Utility Division would like the 16-inch water main from 20th Avenue around the west side of the MOA to connect to the existing 16-inch water main that crosses TH 77 and has allocated funds for this additional water main construction.

Existing MOA hydrants will be salvaged and reinstalled in approximately the same location. Two additional fire hydrants are proposed at eastbound and westbound approaches to the bridge along Lindau Lane.

Private Utilities

Xcel Energy will be required to relocate or lower its six feeder duct bank that serves as the primary service to the MOA. This lowering or relocation will need to occur before March 2013. The duct bank construction has been completed, but Xcel Energy still needs to pull the wires through. This is anticipated to begin in January 2013 and be complete by March 2013.

CenterPoint Energy has three services to the MOA that will need to be relocated or lowered. Two of the services are services to an anchor tenant that are not interruptible. The third and larger service is interruptible with a redundant service on the south side of the MOA.

Both CenturyLink and Comcast Cable have empty facilities that will need to be relocated.

The private utility companies propose a joint trench on the north side of Lindau Lane within an existing 30-foot drainage and utility easement. This joint trench will include Xcel Energy, CenterPoint Energy, CenturyLink, and Comcast Cable.

E. MOA Requested Improvements

On October 21, 2012 the City, Bloomington Port Authority and MOAC entered into an agreement titled, *2012 Improvement Funding Agreement between MOAC, and the City of*

Bloomington and the Bloomington Port Authority. This agreement outlines the MOAC requested design and improvements for areas both north and south of Lindau Lane. These improvements include retaining wall modifications and ring road modifications. In addition, the improvements also include additional water main, sanitary sewer and storm sewer utilities for future development. The agreement has provisions that allow MOAC to select which improvements are built once the project is bid. For the purposes of this feasibility study, all the improvements included in the agreement are included.

F. Management of Traffic

Maintaining safe and convenient access during construction is a core project goal. A detailed Traffic Management Plan (TMP) will be developed to outline the interaction of the construction activities with the area traffic, adjacent construction activities, emergency services and MnDOT. The TMP will also outline responses to specific scenarios that may affect how traffic operates in and around the construction zone. This TMP will utilize in-place dynamic message signs, as well as, temporary portable message signs and temporary wayfinding signs in order to route pedestrian and vehicle traffic to and through the area as efficiently as possible.

II. Project Cost Estimate

The following is a summary of the estimated project costs for the Lindau Lane Grade Separation Project:

A. Bridge	\$5,000,000
B. Roadway/Retaining Walls	\$12,000,000
C. Streetscape/Plaza	\$2,000,000
D. Utilities	\$3,025,000
E. MOA Requested Improvements	\$780,000
F. Management of Traffic	\$700,000
Construction Subtotal	\$23,505,000
Contingency (10%)	\$2,243,000
Associated Project Costs (25%)	\$6,417,000
Total Cost	\$32,165,000

The 24th Avenue Storm Sewer Project (City Project 2012-501) is work that is required in advance of this project, but funded as part of the Lindau Grade Separation project. The 24th Avenue Storm Sewer Project is currently underway and the actual costs are anticipated to be less than what was estimated in the feasibility study (approved by the City Council on August 20, 2012). Costs for the 24th Avenue Storm Sewer project were further reduced due to constructability reasons and pipe and two manholes were moved

from the 24th Avenue Storm Sewer project to the Lindau Lane Grade Separation project. The original cost estimate was \$5,300,000 and the cost estimate to complete the project is now approximately \$3,175,000.

III. Project Funding

The following is a summary of the project funding:

	Lindau Grade Separation	24 th Avenue Storm Sewer	Total
DEED	\$9,500,000	\$1,000,000	\$10,500,000
TIF	\$19,825,000	\$2,175,000	\$22,000,000
Fund 435 (L&L)	\$1,000,000		\$1,000,000
Fund 510 (water)	\$875,000		\$875,000
Fund 530 (storm)	\$185,000		\$185,000
MOA Assessment	\$780,000		\$780,000
	\$32,165,000	\$3,175,000	\$35,340,000

IV. Special Assessments

As outlined in the *2012 Improvement Funding Agreement between MOAC, and the City of Bloomington and the Bloomington Port Authority*, dated October 21, 2012, and as specifically requested in paragraphs 9 and 10 of the above mentioned agreement, MOA requests the design of the improvements described above in Section I.E. Should there be funds available from the DEED grant or matching funds available through TIF or Fund 435 (Liquor and Lodging), these improvement costs may be paid for through these other sources. However, if those funding sources are depleted through other project costs, as outlined in the agreement, then Lot 1, Block 1 MALL OF AMERICA 6TH ADDITION and Lot 1, Block 1 MALL OF AMERICA 7TH ADDITION will be assessed up to \$779,581.

V. Design and Construction Schedule

It is proposed that construction begin approximately April 2013 and end in June 2015. Since this project may be constructed in parallel with a new MOA Phase 1C improvement, the construction timeline may be adjusted somewhat due to coordination between the projects.

It is expected that the entire roadway will be substantially complete and ready for use in fall 2014. Final landscaping and paving activities for final completion may take place in spring 2015.

In 2013, Lindau Lane will be closed to all traffic between Ikea Way/20th Avenue and 24th Avenue. Access to Ikea Way and 20th Avenue will be maintained from TH 77. In 2014, Lindau Lane will be closed between TH 77 and 22nd Avenue. Access to 22nd Avenue will be maintained from 24th Avenue. During both years of closure, the TMP will be in place to guide the area's visitors to their destinations.

Plans, specifications and TMP for the project will be completed by SRF Consulting Group, Inc., and their subconsultants. Construction observation and administration will be performed by SRF and their subconsultants, with coordination from the City of Bloomington Engineering Division.