

Concord Downtown Complete Streets Improvement Project

Benefit/Cost Analysis

The Concord Downtown Complete Streets Improvement Project is expected to generate significant benefits to the downtown, the central NH region, as well as the nation by providing a safe, reliable, multi-modal transportation system. By providing a more efficient and attractive transportation corridor, the project will increase commerce to the downtown core thus revitalizing an underutilized downtown commerce and residential district thereby increasing adjacent property values. Detailed benefit-cost analysis was performed by the City of Concord to determine the benefits of this project and is summarized in the attached worksheets.

Current Infrastructure Baseline

At present, Main Street is a major transportation corridor; a typical downtown urban arterial roadway with 4 lanes (2-lanes in each direction) supporting some 12,000 ADT (2011) with traffic expected to grow to over 14,800 ADT by 2023. The project area is a 12-block section some 4,200 linear feet in length with aging pavement in a state of disrepair. Downtown Concord is supported by public transportation and includes a number of bus stops along Main Street although current curb and sidewalk conditions limit the opportunity for bus shelters and barrier-free accessibility to public transportation.

The corridor includes traffic signals at Main Street's intersections with Storrs Street, Pleasant Street, and Centre Street/Loudon Road. With one of the oldest operating traffic signals in Concord, the Main Street/Pleasant Street intersection experiences congestion and delay as a result of limited functionality with its older programming. Vehicles and pedestrians experience considerable delay and conflict with one another.

The corridor also includes a number of mid-block crosswalks and with its 4-lane configuration, a number of pedestrians have been hit by vehicles over the years resulting in serious, incapacitating injuries. With on-street parking and limited overall travelway width, larger vehicles limit sight distance to back out of parking spaces and encroach upon the area typically used by bicycles. Bicyclists have noted their concern with Main Street's lack of dedicated bike lanes and often ride their bikes on the sidewalks.

Project costs are outlined below including final design, permitting, and construction. No right-of-way acquisition is needed for this project. The baseline project assumption is that once the project was approved and later placed in the outyear of Concord's Capital Improvement Program (CIP), a phased construction effort would be planned for FY2016, FY2017, and FY2018. Noting costs and limited budgeting, the project would be split into a number of smaller phases completed over a longer period of time. Downtown's residents and businesses expressed concern with that approach in that extended schedules would impact business for a longer duration and in this economy, could be fatal to some struggling companies.

Project Costs

Total project costs were compiled by the City of Concord and Hoyle, Tanner & Associates, Inc. Total estimated projects cost is \$7,850,000 including final design, permitting, construction and construction engineering.

Project Benefits

The requested TIGER 2012 funding will enable the City to complete the entire transportation system improvement program outlined in the Rethinking Main Street master plan. The project serves to facilitate a safer, more attractive, and economically thriving transportation corridor to serve the needs of downtown and the community. The proposed improvements will greatly reduce traffic accidents, improve roadway conditions to a state of good repair, and introduce a state-of-the-art snow melt system to reduce long-term winter maintenance and treatment costs. With a more reliable, multi-modal system offering more transportation choice, it is expected that private investment and reinvestment will continue in the underutilized downtown.

State of Good Repair

The Concord Downtown Complete Streets Improvement Project recognizes the deficiencies in the public infrastructure and specifically looks for solutions to not only enhance the travel experience in the community but to also provide significant benefits to the regional transportation system. Detailed operational analyses were conducted to quantify the projects' state of good repair benefits in terms of comparative operation and maintenance cost. An innovative and state-of-the-art snow melt system that uses left over steam condensation provides significant benefit. As a result of the street and sidewalk improvements as well as innovations in low energy lighting, the net present worth (2011) value of the project's operations and maintenance costs savings over a 20-year service life is \$599,097.

See the attached Expected Annual Maintenance Cost Benefit Analysis and Estimation worksheet.

Economic Competitiveness

The project focuses on improvements specifically targeted to improving the economic competitiveness of the community, region, and the nation. Detailed analyses quantified benefits in terms of vehicle travel time savings and expected increases in property value. As a result of the street and traffic signal improvements designed to reduce delay, congestion and optimize traffic operations, the net present worth (2011) value of the project's vehicle travel time savings over a 20-year service life is \$5,562,808.

Based on studies as well as that experienced in Concord on other major public infrastructure investment projects, downtown property values are expected to increase by 8% over the life of the project. Detailed review of current property values and depreciation amounts concluded that with the streetscape improvements, increase in business activity and job opportunities would have positive effects. As a result of the improvements, the net present worth (2011) value of the project's property value benefits adjacent to the project over a 20-year service life is \$3,706,194.

See the attached Expected Travel Time Savings Analysis and Estimation worksheet.

Livability

The project is founded on Smart Growth and the 6 principals of livability. A livable community is one that maintains focus on walking, biking and the use of public or alternative transportation modes. Livable communities should be accessible to all its residents and workers alike. Through this TIGER 2012 grant program, Concord will be able to improve transportation choices by reducing congestion, reducing traffic delay, and enhancing points of modal connectivity. This project provides direct connection of all transportation modes in the downtown enhancing livability for all its residents, visitors, and workers.

The project also focuses on opportunity to enhance the downtown with public art to support tourism. Adding streetscape features to what is already in the downtown adds value and promotes a sense of place and identity.

Sustainability

A considerable amount of time was spent analyzing the potential sustainability benefits associated with this project. Detailed operational analyses were conducted to quantify the projects' reduced vehicle fuel consumption, greenhouse gas emissions, and the value of street trees. As a result of the improvements, the net present worth (2011) value of the project's vehicle fuel use savings, vehicle emissions savings, and value of street tree benefits over a 20-year service life is \$929,650.

See the attached Expected Greenhouse Gas Emission and Fuel Consumption Savings Analysis and Estimation worksheet.

Safety

With the proposed lane conversation from 4-lanes to 3-lanes along Main Street, the Concord Downtown Complete Streets Improvement Project will provide safety improvements in terms of reduced incident and severity of crashes. The project also improves safety at pedestrian crosswalks and improves sight lines for parked vehicles. The net present worth (2011) value of the project's safety benefits over a 20-year service life is \$2,913,927.

See the attached Expected Crash Reduction and Safety Benefit Analysis and Estimation worksheet.