

Improved Mobility – Cause & Effect Map



As a community Bellevue values...

- A safe transportation system for all users.
- A convenient, efficient, and reliable transportation system that connects people to the places they want to go.
- A transportation system that provides options, accommodates growth, and improves how people live, work, and play.

Factors:

Existing & Future Infrastructure

- Safety
- Maintenance
- Planning
- Design
- Connections
- Regional Partnerships
- Land use
- Value
- Integration
- Economic Development

Traffic Flow

- Efficiency
- Safety
- Travel Time
- Capacity
- Maintenance
- Behavior

Built Environment

- Character
- Environment
- Livability
- Destinations
- Access to Services
- Accessibility
- Leisure

Travel Options

- Choices
- Predictability
- Convenience
- Safety
- Connections
- Accessibility
- Education

Community Indicators:

- % of residents who agree that the City is providing a safe transportation system for all users.
- % of residents who say they can travel within the City of Bellevue in a reasonable and predictable amount of time.
- % of residents who agree that Bellevue is doing a good job of planning for and implementing a range of transportation options (such as light rail, bus, bikeways, walkways and streets).



Request for Results

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Introduction

This Request for Results (RFR) outlines the results and factors that will be used to evaluate and rank operating and capital offers for the Budget One process. Citizen-focused outcomes were approved by City Council and form the basis for developing the City Manager’s Preliminary Budget. This document provides guidance to staff in developing offers for the 2013-2014 Operating Budget and 2013-2019 Capital Investment Program Plan.

What is Improved Mobility?

“Getting people where they want to go, when they want to go and how they want to get there.”

While surveys of Bellevue citizens conducted annually show that the vast majority of residents believe that Bellevue is a “good” or “excellent” place to live, concerns about traffic and roads rank high on the list of issues that affect perceptions about quality of life in the city. Citizens also historically rank transportation as a top budget priority.¹ In response to the high level of citizen concern about and expectations for mobility through the community, Bellevue has many existing programs and efforts related to planning for and constructing quality transportation infrastructure. In addition, the City has historically worked with other state and local agencies, notably the state Department of Transportation, Sound Transit, and King County Metro, to ensure that regional facilities meet the needs of Bellevue citizens.

This citizen focus on the need for convenient transportation systems is not unique to Bellevue. One measure of the value that Americans place on mobility is that we spend a relatively large share of our income on transportation. As a result, we expect the transportation system to be safe and reliable, and to provide a variety of affordable methods of travelling between desired destinations.

Selection of Improved Mobility as an outcome in the Budget One process reflects the importance placed on “getting around” Bellevue and the region by our residents, business owners, workforce and people who take advantage of the City’s growing retail core and entertainment options. Therefore, for purposes of this RFR, we mean “citizen” to be residents, business owners, workforce, visitors, etc. A transportation system is fundamentally a way to get between destinations; therefore, it is a means to an end, not an end in itself. A well-planned and designed transportation system is a building block for achieving the city’s vision in all other outcome areas.

¹ City of Bellevue (2012) Budget Survey, February 2012.



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The 2013-2014 Improved Mobility consists of the following members:

Team Lead: Ranodda DeChambeau

Team Members: John Manning, Laurie Gromala, Gary Clesson, Sean Nichols, Toni Battersby

Community Value Statements

The Improved Mobility results team understands that improving mobility means we will meet the numerous and divergent needs of those who live, work, and play in Bellevue now and in the future. Recognizing the trade-offs inherent in designing a comprehensive mobility network, we emphasize the importance of balance between reliability, safety, transportation options, regional connectivity, and reduction of congestion. We also believe that transportation system planning, design, construction and operation should enhance, not detract from, our neighborhoods, environment, and quality of life. Protecting and maximizing our current infrastructure investments are critical elements of improving mobility.

The Improved Mobility results team recognized that improving mobility is broader than simply improving transportation. We understand that providing safe, convenient, and efficient transportation is one way to improve mobility but that consideration must also be given to the overall built environment and how it influences our movements and choices. We also understand that improved mobility in many cases requires considerations of trade-offs, for example, increasing traffic capacity and improving traffic flow vs. protecting neighborhoods.

As a community, Bellevue values:

- A safe transportation system for all users;
- A convenient, efficient, and reliable transportation system that connects people to the places they want to go;
- A transportation system that provides options, accommodates growth and improves how people live, work, and play.

Community Indicators

Community Indicators are high level measurements that provide information about past and current trends. They provide insight that community leaders and others can use in making decisions that affect future outcomes.

In the case of Budget One, they are high level indicators of resident opinion that illuminate Council Outcomes and parallel the Community Value Statements. They are gathered annually and provide insight into the overall direction of an intended outcome – whether things are improving, declining, or pretty much staying the same.



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- % of residents who agree that the city is providing a safe transportation system for all users.
- % of residents who say they can travel within the city of Bellevue in a reasonable and predictable amount of time.
- % of residents who agree that Bellevue is doing a good job of planning for and implementing a range of transportation options (such as light rail, bus, bikeways, walkways and streets).

Factors

Factors are those influences that are directly related to actual or perceived improvements in mobility. Sub-factors in turn are indirect influences on improved mobility, or are direct influences on an identified factor. The Cause and Effect Map included with this RFR depicts the four major factors and related sub-factors (noted in “**bold**” in discussion below) identified by the team as most related to improved mobility. The team has listed the four key factors as follows: 1) Existing and Future Infrastructure, 2) Traffic Flow, 3) Built Environment² and 4) Travel Options. The team’s rationale for choosing each factor is described in more detail in this section. Each of the factors identified is important to impacting mobility into and through the city, and each factor in part is related to or impacts the other factors. For that reason, it is anticipated that ultimately the set of strategies chosen by the city to address the Improved Mobility outcome will reflect a mix of programs and proposals associated with each of the factors.

Factor 1: Existing & Future Infrastructure

Transportation infrastructure is the backbone of any mobility system and as a result is identified as a critical factor to improved mobility. This factor also influences each of the other factors (traffic flow, built environment, and travel options) because infrastructure **design**, construction and **maintenance** affects adjoining neighborhoods and supports all modes of transportation. As a result, projects and programs that enhance the reliability and maximize the functionality of transportation infrastructure not only ensure that taxpayers get maximum **value** for these investments, but also are key to improving mobility.

As existing infrastructure nears capacity, particularly in our downtown, innovative system technology will be needed to help support growing demands and ensure that infrastructure performs to its full potential. New information and communications systems are already transforming planning, design, maintenance, and management of our transportation system- video-monitored intersections and synchronized traffic lights are just a few examples.

² The term Built Environment refers to the human made surroundings that provide the setting for human activity.



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Advancements in other physical technologies such as durable, recycled, and self-healing pavements can have a positive impact on the performance of our infrastructure.³

Future infrastructure investments must be thoughtfully **planned** and **integrated** with existing and anticipated **land uses** to best meet the city’s future vision. Streets must include safe design that is context sensitive and which support a range of transportation choices (“complete streets”) to ensure that these significant investments are flexible enough to meet the changing ways in which people and goods travel through the community. **Safe**, efficient and sustainable infrastructure that supports transport systems and their reliable **connections** in and out of the region are vital to Bellevue’s attractiveness as a desirable place to live, work, and play.

Bellevue is the hub of the Eastside in many ways, in part driven by its location between SR 520, I-405 and I-90, which **connect** Bellevue to the rest of the region. Transportation decisions that impact these state facilities have a direct impact on Bellevue. Leveraging **regional partnerships** and maximizing opportunities with WSDOT, federal agencies, and regional transit agencies is critical to ensure that the expectations of Bellevue’s citizens are met. The continued **economic development** of the city will impact the mobility system by increasing the demand for convenient public transportation that moves people to jobs and efficient road systems that moves goods to businesses throughout the city.

Factor 2: Traffic Flow

The second key factor affecting Improved Mobility, and particularly citizen’s perceptions of mobility, is traffic flow. Improving traffic flow directly supports improved mobility by ensuring that traffic can move through the city with a minimum of disruptions, whether those disruptions are caused by congestion, incidents (such as traffic accidents), or construction activities.

In past surveys, Bellevue citizens that express concern about transportation issues most frequently cite dissatisfaction with traffic and congestion.⁴ Traffic congestion adds stress and inconvenience to people’s daily lives because congestion results in longer or unpredictable **travel times** between destinations. Traffic congestion affects the transit system, since buses, vanpools, and future light rail where it may be at-grade, also have to sit in congestion, creating inconvenience for passengers and impacting ridership. Further, traffic congestion creates air quality and environmental problems, since idling vehicles are a significant source of greenhouse

³ U.S. Department of Transportation, Bureau of Transportation Statistics (2000). *The Changing Face of Transportation BTS00-007* Washington, DC.

⁴ City of Bellevue (2012) Budget Survey.



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gas emissions.⁵ In addition to congestion, the volume and speed of traffic on residential streets is a source of concern in many neighborhoods.

While improving traffic flow is a key factor in improving citizens' satisfaction with mobility in and through Bellevue, this objective must be balanced with other factors. Preservation of the built environment or other considerations may dictate acceptance of some level of congestion, particularly where the only solution to congestion requires adding **capacity**. Such a solution is often difficult because building new facilities is expensive and often controversial.

Consideration should be given to strategies that improve or **maintain** traffic flow in order to gain the most **efficiency** out of the existing transportation network prior to adding new infrastructure. Another important component of improving traffic flow is impacting the **behavior** of users of the system. Education strategies can enhance **safety** not only for drivers but for pedestrians and bicyclists. In addition, education and enforcement of traffic laws lead to improved flow, since accidents not only threaten safety but are also a major contributor to congestion. Nationally, half of all traffic congestion is created by "non-recurring" events such as accidents, weather, etc.⁶

Factor 3: Built Environment

Based on survey feedback⁷, we understand that preserving neighborhoods and improving traffic are high priorities for Bellevue citizens. We have determined that there are a number of cause and effect relationships driven by the connections between mobility and mobility issues and quality of life is a broad factor that goes beyond simply neighborhood impacts. We identify this set of cause and effect relationships as the "Built Environment" factor.

Improving linkages between transportation and land use planning is key to achieving a more sustainable **environment**, maintaining the unique **character** of the city, and providing easier and more convenient access to **destinations**. The built environment factor focuses on the relationship between land uses and transportation, because where we choose to live, work and spend our **leisure** time directly impacts where and how we build roads, sidewalks, bike paths and trails. Those who live in Bellevue's neighborhoods have a expectation that they will have **access** to a mobility system that increases neighborhood vitality while at the same time protects them from negative traffic impacts. They also expect a system that has **accessibility** for all levels of mobility.⁸ These expectations, along with the expressed need to reduce traffic in

⁵ Barth & Boriboonsomin (2008) Traffic Congestion and Greenhouse Gases, *Access*, The University of California Transportation Center, pp 3-4.

⁶ "US Department of Transportation, Federal Highway Administration Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation", U.S. Department of, Office of Operations, Figures 3.1 and 3.2

⁷ 2012 COB Budget Survey

⁸ 2025 Bellevue Community Vision.



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residential neighborhoods, make neighborhood **livability** a driver for improved mobility.⁹ Careful planning is needed to locate services near where people live, work, and play and/or near existing mobility (transportation) infrastructure. This planning can effectively decrease the use of motorized travel and congestion and increase the number of healthier choices like bike and pedestrian options, all while supporting a sustainable environment.

Another important function of any transportation system is to support the local and regional economy, either through transport of goods, the ability of workers to get to their employers or the ability of customers to get to businesses. This critical link between a convenient and predictable transportation system and a thriving economy is true for Bellevue. Bellevue is the hub of the Eastside's economy with approximately 150,000 jobs citywide, including a vibrant mix of office and retail employment, arts and cultural attractions, hotels, and housing, linked to the Puget Sound region by regional freeways, the bus transit system, and -- in the future -- light rail.

Factor 4: Travel Options

As Bellevue's population grows, the fourth factor to improving mobility is providing those that live, work and play in the city a full range of **convenient** and affordable local and regional travel **choices**, including bus, light rail, carpool, vanpool, biking and walking. Connected roadways, parking facilities, transit, bike routes and walkways are most effective when they are part of a comprehensive solution. While access to and availability of travel options is critical to a long term strategy to improve mobility, many of these options are outside of Bellevue's control and thus efforts focused on this factor have a somewhat lower priority than programs and projects that address the other three factors of improved mobility. Local efforts can and should focus on not only influencing these regional transit options, but also on ensuring that local infrastructure is compatible with and connected to these regional options.

An example of the critical nature of ensuring that regional facilities and local land use needs are compatible is the future vision for Downtown Bellevue. Downtown is the city's main growth and employment center; currently more than 84,000¹⁰ people come to work each day from many locations within the region. Approximately twenty percent of the downtown workforce commutes by transit.¹¹ Existing city planning efforts have shown that this percentage must increase substantially if mobility into and through downtown is to be maintained in the future.¹²

⁹ 2012 City of Bellevue Budget Survey.

¹⁰ Gwen Rousseau (2012) Personal correspondent.

¹¹ 2008 City of Bellevue Mode Share Survey, pp 25-26.

¹² City of Bellevue (2009) Comprehensive Plan (Volume 1 – General Elements and Downtown Subarea Plan), p.116. (http://www.bellevuewa.gov/comprehensive_plan.htm).



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It is crucial to leverage local and regional partnerships with other agencies in order to offer the full range of travel options in the most cost effective and efficient manner. Bellevue is directly served by state and federal highways (SR-520, I-90, and I-405) and many of the travel options, such as bus and future high capacity transit services, are offered and controlled by different governmental agencies. Working with these local and regional partners to mine efficiencies in the overall transportation system will maximize value to users in Bellevue as well as the Puget Sound area.

In the Puget Sound region travel by single occupancy vehicles is decreasing, while travel by alternative modes is increasing.¹³ Bellevue citizens have expressed a need for improved transit service and public transportation in the city's 2012 Citizen Survey. There also is a trend towards utilizing multiple modes in a single trip. Therefore, it is important to improve **connections** between travel modes. Significant regional investment in transit on the Eastside is underway, most notably with regional voters' approval of Sound Transit's East Link light rail project. Ensuring that this investment meets the needs and expectations of Bellevue citizens and businesses will be an important effort in the near term.

Predictable, safe and easy to use alternative commute modes offer multiple benefits including; providing travelers with cost savings compared to driving alone, **accessibility** for all users, reducing the environmental impacts of the transportation system,¹⁴ and preserving air and water quality.¹⁵ Further, certain modes such as biking and walking support a healthier lifestyle for the traveling public. It is important to **educate** the community about the available alternative options in order to promote greater usage in the future.

Background/Choices

Although we are charged with wearing our "citizen hat" in the development of our Request for Results (RFR), it is evident to us that mobility affects not only Bellevue citizens but anyone traveling in and out of the city to work, study, vacation, enjoy leisure activities, and conduct business. How well they are able to do this impacts their quality of life and their experiences while they are in Bellevue. We see a strong connection between mobility and the economic vitality of the city. If people and goods can't efficiently move into and through our city, they may decide to go elsewhere.

The following are our specific assumptions and choices related to the factors and strategies which appear in our cause and effect map and purchasing strategies.

¹³ Puget Sound Regional Council (2007) Puget Sound Trends, October Issue.

¹⁴ Puget Sound Regional Council (2007) Puget Sound Trends, October Issue.

¹⁵ US Census Data (2000) Reason for Using Alternative Commute Modes, page 3.



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- Safety is a central concern in designing and operating the transportation system, and is embedded in all factors.
- Maximizing the efficiency (people-moving & freight/goods capacity) of the entire transportation system is critical.
- Improved mobility, now and in the future, is something that supports everything else in the city (allowing future growth, supporting neighborhoods, continuing economic development, etc.) and therefore needs to be looked at broadly.
- Bellevue is very dependent on the regional transportation system, both in terms of roads (state highway facilities) and transit (transit services are provided by other agencies, King County Metro and Sound Transit).

A complete list of resources reviewed by the Improved Mobility team is included in Attachment A. These resources may be helpful to proposal drafters looking for evidence supporting the connection between the proposed project or program and the Improved Mobility outcome.

Purchasing Strategies

When identifying purchasing strategies, the Improved Mobility team focused on activities that were within the city’s control and/or ability to influence. Several themes surfaced in the development of these strategies:

- Maximize efficiency and value of existing infrastructure and balance with future infrastructure investments
- Plan for future demands on the system
- Improve system connectivity
- Focus on more than just cars (think “multi-modal”)

The specific Improved Mobility purchasing strategies are organized according to factors. Proposals should include a discussion of how the program or project addresses the applicable components within each purchasing strategy, including any evidence of past performance or success in other jurisdictions. Strategies that may overlap with strategies from other outcomes are *italicized*. Guidance for proposal writers is included to provide direction about where to address proposals that involve overlap between outcomes. Even if a proposal is directed to a different outcome, the proposal should address how it is compatible with the purchasing strategies for Improved Mobility.



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Existing & Future Infrastructure

- We are seeking proposals that maximize the effectiveness of **existing and future infrastructure**. Specifically proposals that:
 - Maintain current investments in order to optimize their efficiency and value.
 - *Plan to accommodate future demand*. Proposals for new capacity should demonstrate that improvements to existing infrastructure have been evaluated.
 - Potential overlap with Innovative, Vibrant and Caring Community; proposals that are mainly aimed at coordinating with future or existing land use planning efforts should be directed to Innovative, Vibrant and Caring Community; proposals mainly aimed at addressing transportation needs for existing or already planned land uses should be directed to Improved Mobility.
 - Maximize the benefits of investments made by regional and state agencies. (King County Metro, Sound Transit, WSDOT, etc.)
 - *Include safe infrastructure design for all users*.
 - Potential overlap with Safe Community; proposals to improve the safety of transportation infrastructure should be directed to Improved Mobility; proposals related to safety design issues that do not involve modifications to infrastructure should be directed to Safe Community.
 - Leverage partnerships and maximize opportunities with other agencies. (King County Metro, Sound Transit, WSDOT, etc.)
 - Provide multi-modal infrastructure.
 - Provide convenient connections between destinations.
 - *Promote and support the economic development of the city*.
 - Potential overlap with Economic Growth and Competitiveness; proposals that involve capacity or other infrastructure improvement projects should be directed to Improved Mobility, other proposals should be directed to Economic Growth and Competitiveness.

Traffic Flow

- We are seeking proposals that improve **traffic flow**. Specifically proposals that:
 - *Prevent accidents that impact vehicles, pedestrians, and/or cyclists*.
 - Potential overlap with Safe Community; proposals that involve modifications to infrastructure should be directed to Improved Mobility; proposals that are related to user education or behavior modification to improve safety should be directed to Safe Community.
 - Maximize the efficiency of the system.
 - Increase predictability of travel times.
 - Provide for road maintenance and timely system repair.
 - Effectively clear barriers to traffic flow.



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- Increase road capacity in appropriate locations. Note: proposals for new capacity should demonstrate that improvements to existing infrastructure have been evaluated.
- *Include preparation for severe event response.*
 - Emergency Management function overlaps with Safe Community; proposals for equipment, emergency, or annual work related to restoring travel capability during severe events should be directed to Improved Mobility.
- Reduce single-occupant vehicle trips and promote the use of alternate modes (i.e. transit, walk, bike, carpool, vanpool).

Built Environment

- We are seeking proposals that support and enhance the **built environment**. Specifically proposals that:
 - *Include projects and programs that are designed to fit neighborhood character (“context sensitive”).*
 - Potential overlap with Quality Neighborhoods; proposals that involve capacity or infrastructure improvement projects should be directed to Improved Mobility; proposals to address perceived conflicts between existing facilities and neighborhood character should be directed to Quality Neighborhoods.
 - *Plan and locate services near existing transportation facilities and/or where people work, live and play for convenience and accessibility.*
 - Potential overlap with Innovative, Vibrant and Caring Community; proposals that involve changing or updating land uses should be directed to Innovative, Vibrant and Caring Community; proposals that involve creating system linkages or improvements to serve land uses that are already planned should be directed to Improved Mobility.
 - *Protect neighborhoods from negative traffic impacts.*
 - Potential overlap with Quality Neighborhoods; proposals that involve direct response to perceived conflict between neighborhoods and traffic impacts should be directed to Improved Mobility.

Travel Options

- We are seeking proposals that provide a full range of **travel options**. Specifically proposals that:
 - *Ensure that the full range of travel choices are integrated in local and regional planning.*
 - Potential overlap with Innovative, Vibrant and Caring Community; proposals that involve changing or updating land uses should be directed to Innovative, Vibrant and Caring Community; proposals that involve creating system linkages or improvements to serve land uses that are already planned should be directed to Improved Mobility.
 - Provide convenient access to all users.



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- *Increase local and/or regional connectivity.*
 - Potential overlap with Responsive Government; proposals that are focused on regional coordination with respect to transportation should be directed to Improved Mobility; all other proposals should be directed to Responsive Government.
- Improve connections between travel modes.
- Increase potential users' awareness of the full range of travel choices available to them.
- Work with regional agencies to improve local transit service within Bellevue.



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Attachment A -List of Primary Evidence

INTERVIEWS:

Interview with Dave Berg, Transportation Department Director, City of Bellevue (March 8, 2012).

Interview with Tony Marcum, Planning Manager, Utilities Department, City of Bellevue (March 8, 2012).

Interview with Judy Johnson, Utilities Superintendent, Utilities Department, City of Bellevue (March 8, 2012).

Interview with Mark Poch, Engineering Manager, Transportation Department, City of Bellevue (March 8, 2012).

Interview with Mike Whiteaker, ITS Manager, City of Bellevue (March 8, 2012).

Interview with Bernard Van de Kamp, Assistant Director, Transportation Department, City of Bellevue, (March 8, 2012).

OTHER SOURCES:

Alliance for Bicycling and Walking (January 2011) Quick Fact Sheet, Bicycling and Walking in the United States: 2011 Benchmark Report.
(www.peoplepoweredmovement.org/benchmarking).

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City of Bellevue (2010), A Report To Our Citizens, *Vital Signs*, June, 2010

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How the Average U.S. Consumer Spends Their Paycheck, Visual Economics Website, April 2009 <http://www.visualeconomics.com/how-the-average-us-consumer-spends-their-paycheck/>. Retrieved on March 20, 2012.

Litman, T. (2012) Smart Congestion Relief Comprehensive Analysis of Traffic Congestion Costs and Congestion Reduction Benefits, Victoria Transport Policy Institute (http://www.vtpi.org/cong_relief.pdf).

RITA (Research and Innovative Technology Administration), Intelligent Transportation Systems (<http://www.its.dot.gov/index.htm>).

Sound Transit (January 2010). East Link Light Rail: *Neighborhood Workshop Summary*.

U.S. Department of Transportation, Federal Highway Administration Office of Operations (Sept 2005) "*Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation.*" (http://ops.fhwa.dot.gov/congestion_report/).