Item No. 3(c)
March 11, 2013

CITY COUNCIL STUDY SESSION ITEM

SUBJECT:
Downtown Transportation Plan Update Status Report

STAFF CONTACT:
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FISCAL IMPACT:
None

POLICY ISSUES:
Downtown Subarea Plan:

This Subarea Plan, adopted in 2004, contains policies that guide the physical development of Downtown Bellevue and a transportation project list that is intended to meet the forecast travel demand through the planning horizon of 2020.

The update of the Downtown Transportation Plan will acknowledge changed circumstances since 2004, and will consider land use and transportation changes anticipated to 2030. Recommendations for Downtown transportation policies and projects will be integrated with the recently initiated **Downtown Livability Initiative** to develop a comprehensive package of **Subarea Plan and Land Use Code amendments** due for Council consideration in early 2014.

DIRECTION NEEDED FROM COUNCIL:
____ Action
_X_ Discussion
_X_ Information

BACKGROUND/ANALYSIS:
This memo provides a summary overview of the Downtown Transportation Plan Update (DTP) featuring the work that has been accomplished and identifying the work ahead.

While the Transportation Commission has not yet developed a comprehensive slate of recommended transportation policy or projects, they have discussed policy concepts and vetted preliminary project ideas that address a person's ability to get around Downtown. A detailed summary report is included in Attachment 2. Adopted **measures of effectiveness** will help in evaluating project concepts and balancing needs among roadway users, transit riders, pedestrians and bicyclists. What is emerging is an understanding that programmed roadway capacity projects in and around Downtown will provide an adequate vehicular level of service in 2030, while significant improvements are needed in pedestrian and bicycle facilities and transit service and facilities.

Public Engagement

Beginning in the summer of 2011, staff has been engaged with the community to understand the issues and opportunities related to Downtown mobility. Staff meets monthly with the Transportation Commission, which is the Council-appointed advisory body for the DTP. Each month staff engages with the Commission in a discussion of a discrete Downtown mobility topic. In addition, staff regularly provide DTP updates to community organizations and maintain a project web site, http://www.bellevuewa.gov/downtown-transportation-plan-update.htm. Downtown mobility was a key topic at the Downtown Livability Initiative open house on November 29, 2012. A Spring Transportation EXPO is planned for April 24, 2013 and the Downtown Transportation Plan Update will have a significant presence at this event.

Downtown Multimodal Transportation Components

Planning Principle #1 (Attachment 1) and community outreach identified the need for a multimodal approach to Downtown transportation Issues and opportunities related to four Downtown mobility components: **Private Vehicles (Roadways), Transit, Pedestrians, and Bicycles**. Staff and the Transportation Commission have used projected 2030 land use and travel demand to identify Downtown mobility needs and have developed some preliminary proposals to address them. Through this process, staff have uncovered some significant gaps, some pleasant surprises and some issues that are referred for further analysis to the Downtown Livability Initiative. Consistent with the adopted Council Principles for this plan, staff and the Transportation Commission are preparing recommendations for transportation policies and projects that advance the Downtown vision, including **early implementation solutions** for each transportation mode. Mobility components within the scope of this work are described briefly below.

Roadways

Direction from Council is to **accommodate the forecast 2030 travel demand**, considering level of service and traffic flow/travel time, to analyze opportunities for on-street parking and loading to support businesses and residents, and to review off-street parking needs and Code requirements.

The 2030 Downtown land use forecast is for **70,300 jobs and 19,000 residents**, an increase of 27,775 jobs and 12,142 residents over 2010. The assumed 2030 transportation network includes many roadway capacity projects that support Downtown land use and mobility. Assumed roadway projects outside of Downtown, such as the NE 4th Street Extension and the 120th Avenue NE expansion, provide a benefit to Downtown by improving overall circulation. Within Downtown, the expansion of NE 2nd Street and 110th Avenue NE are assumed in the model to provide additional capacity. Refer to the Summary Report in Attachment 2 for a list of the assumed roadway capacity projects.

Travel demand modeling and level of service (LOS) analysis are significant factors in determining whether additional roadway capacity is needed. The projected average LOS E for Downtown intersections in 2030 is reasonable for a multi-modal mixed use urban setting, and indicates that **additional roadway capacity projects-beyond those assumed in the model-will not be necessary in the 2030 timeframe**.

Transit

The Downtown Transportation Plan Update will address Council direction with recommended policies and projects to provide **transit coverage** that serves the planned land use pattern, the **transit capacity** to support forecast transit demand, **transit speed and reliability** enhancements

to help bus passengers move throughout Downtown, and **transit passenger comfort, access and information** to support and improve ridership.

A "best practice" analysis, including a look at the Bellevue Transit Master Plan, transit agency standards and applications in other urban centers, has led to a conclusion that transit stops in Downtown Bellevue can be described in four typologies: the Local Transit Stop; the Primary Transit Stop; the Frequent Transit Network/RapidRide Station; and the Transit Center/Multimodal Hub. Each of these will have specific recommended components that relate to their function, boarding activity and location.

Anticipated 2030 transit demand is about a **five-fold increase** over current (2010) transit ridership. A ridership increase of this magnitude is not-unprecedented in Downtown Bellevue, as can be seen in the table and chart on page 11 of the attached Summary Report. However, **additional transit service would be needed to meet this demand,** as would targeted improvements for transit speed and reliability on arterials and intersections and improvements to passenger facilities, including at the Bellevue Transit Center.

Pedestrians

In a Downtown setting, the pedestrian environment affects mobility, economic development and quality of life. Breaking down the walk trip into its essential components has enabled the Transportation Commission to develop preliminary recommendations for **crosswalks** designed to accommodate increasing numbers of pedestrians, **mid-block crossings** to facilitate pedestrian crossings of wide arterials between signalized intersections, **sidewalks and landscaping** as the fundamental pedestrian infrastructure, and **through-block connections** that provide walkable corridors through Downtown superblocks.

The Downtown urban environment and the anticipated pedestrian demand related to land use and transit service dictate a context-sensitive design approach for each type of pedestrian facility.

Bicycles

The quality of Downtown bicycle mobility is dependent on a comprehensive strategy of **on-street bicycle facilities** and wayfinding plus short-term on-street bicycle parking and long-term, secured commuter parking in garages. For both commuting and recreation, recommended policies and projects will support **connectivity within Downtown** and **connections to neighborhoods** and regional facilities such as the I-90 Trail. The Downtown Livability Initiative will address long-term/commuter bicycle parking plus locker/shower facilities in new buildings through the Land Use Code.

DTP INTEGRATION WITH DOWNTOWN LIVABILITY INITIATIVE

Council has recently initiated the Downtown Livability Initiative (DLI). Downtown Livability will address land use and urban design issues in a manner that is integrated with mobility through the Downtown Transportation Plan Update.
DTP has identified project concepts that will be more fully developed as urban design, development standards and mobility components of Downtown Livability. For example, the NE 6th Street Pedestrian Corridor and Pedestrian Through-Block Connections serve mobility, economic development and urban design functions. Through the Downtown Livability Initiative, Transportation and Planning and Community Development staff will enhance design concepts for these and other situations where mobility and land use/urban design overlap. The DTP/DLI collaboration is also preparing information and recommendations related to off-street parking standards for commercial uses – with potential implications for mobility, economic development and livability.

During the next year, staff will fully integrate the Downtown Transportation Plan Update and the Downtown Livability Initiative in environmental (SEPA) analysis and will consolidate recommendations into a comprehensive package of proposed amendments to the Downtown Subarea Plan and Land Use Code.

DTP INTEGRATION WITH THE TRANSIT MASTER PLAN

While the Transit Master Plan will focus on citywide transit service, capital facilities and transit operations, DTP will consider specific transit corridors that serve Downtown from the region as well as routes and facilities within Downtown. Also, the work of the Downtown Transportation Plan Update includes developing measures in coordination with the Bellevue Transit Master Plan to adjust transit routes, enhance transit speed and reliability, and improve passenger comfort, access and information.

NEXT STEPS:

During Spring 2013, staff and the Transportation Commission will develop preliminary recommendations for transit service and facilities, and will begin to consolidate these recommendations into a comprehensive mobility strategy that can be integrated with the Downtown Livability Initiative. Monthly meetings with the Transportation Commission will continue, as will periodic updates and discussions with community groups. Additional community outreach, briefings and SEPA analysis will occur through the rest of the year, largely in coordination with the Downtown Livability Initiative.

ALTERNATIVES:

Please see concepts for mobility in the Summary Report to Council (Attachment 2)

RECOMMENDATION:

Please see preliminary recommendations in the Summary Report to Council (Attachment 2)

ATTACHMENTS:

1. Downtown Transportation Plan Principles
2. Downtown Transportation Plan Summary Report to Council

AVAILABLE IN COUNCIL OFFICE FOR REVIEW:

Downtown Issues Scoping Report – January 2012

Downtown Transportation Plan Update

Planning Principles

1. **Plan for multiple modes of travel within and to and from Downtown Bellevue**

   Develop an innovative multimodal transportation strategy for Downtown Bellevue that updates the existing Downtown Subarea Plan project list. The recommended strategy should consider and incorporate the emerging and anticipated mobility needs of motorists, pedestrians, bicyclists, transit riders, taxi patrons and carpool/vanpool riders, and support the transport, parking and loading needs of employers, residents and businesses.

2. **Accommodate the anticipated travel demands from the 2030 land use forecast**

   Ensure that the planned transportation system will accommodate the 2030 forecast for Downtown residential and employment growth.

3. **Advance the adopted vision for Downtown Bellevue**

   Ensure that the Downtown transportation system advances and supports the land use and urban design vision for Downtown Bellevue - articulated in the Downtown Subarea Plan as a vibrant, livable, accessible, and memorable mixed use Urban Center.

4. **Recognize changes in the regional and local transportation and land use environment**

   Incorporate local and regional transportation projects and plans that have been approved and/or implemented since the Downtown Subarea Plan was adopted in 2004. Transportation system changes include East Link, SR 520 expansion and tolling, improvements to I-90 and I-405, and the Bellevue Mobility and Infrastructure Initiative. Planning changes include the updated Bel-Red Subarea Plan, the Wilburton Subarea Plan and the Eastgate/I-90 Corridor Study.

5. **Integrate City Council direction**

   As potential Downtown transportation projects are identified, incorporate City Council direction on regional transportation facilities, such as the Downtown alignment for East Link and the I-405 Master Plan.

6. **Provide for comprehensive public involvement**
   Ensure that the process to update the Downtown Transportation Plan invites broad and inclusive public involvement that engages the diverse Downtown commercial and residential communities, nearby residential neighborhoods, and other community stakeholders.

7. **Minimize traffic impacts on neighborhoods**
   Consider measures as needed to protect Downtown residents and nearby residential neighborhoods from significant adverse impacts from traffic and commuter parking.

8. **Involve regional transportation and planning partners**
   Coordinate planning for the Downtown Bellevue transportation system with regional transportation and planning partners, such as the Puget Sound Regional Council, Washington State Department of Transportation, Sound Transit, and King County Metro, and work to ensure Downtown projects and plans are compatible with each other and are consistent in support of mobility and economic development in Downtown Bellevue.

9. **Leverage funding from outside sources to implement projects**
   Identify transportation system projects that effectively leverage grant funding opportunities. These types of projects will achieve multiple mobility objectives, support economic vitality and residential development, and will sustain Downtown Bellevue's regional status as a Metropolitan City and Urban Center.

10. **Utilize measures of effectiveness to evaluate potential projects**
    Use both quantitative and qualitative measures of effectiveness to evaluate project ideas relative to each other and to community objectives. Consider the cost of a project relative to its benefit to mobility as an important metric, in addition to measures such as improved safety for pedestrians and bicyclists, management of traffic congestion, and the efficient use of the available right-of-way.

Approved by Bellevue City Council February 6, 2012

Downtown Transportation Plan Update

SUMMARY REPORT TO COUNCIL

March 11, 2013

This document provides background information on the Downtown Transportation Plan Update (DTP) to accompany the Bellevue City Council Agenda Memo and presentation for the March 11, 2013 Study Session.

BACKGROUND

The Downtown Subarea Plan was adopted in 2004 contains policies that guide the physical development of Downtown Bellevue and a transportation project list to accommodate the forecast travel demand through 2020. The update of the Downtown Transportation Plan acknowledges changed circumstances since 2004, and considers land use and transportation changes anticipated to 2030. Recommendations for Downtown transportation policies and projects will be integrated with the Downtown Livability Initiative in a comprehensive package of Subarea Plan and Land Use Code amendments due for Council consideration in early 2014.

While the Transportation Commission has not yet developed a comprehensive slate of recommended transportation policy or projects, they have discussed policy concepts and vetted preliminary projects that address a person's ability to get around Downtown. Adopted measures of effectiveness will help in evaluating project concepts and balancing needs among roadway users, transit riders, pedestrians and bicyclists. What is emerging is an understanding that programmed roadway capacity projects in and around Downtown will provide an adequate vehicular level of service in 2030, while significant improvements are needed in pedestrian and bicycle facilities and transit service and facilities.

Beginning in the summer of 2011 staff has engaged the community in dialogues to understand the issues and opportunities related to Downtown mobility. Staff meets monthly with the Transportation Commission, which is the Council-appointed advisory body for the DTP. Each month staff and the Commission discuss a discrete Downtown mobility topic and formulate preliminary project concepts. In addition, staff regularly provides DTP updates to community organizations and maintains a project web site, http://www.bellevuewa.gov/downtown-transportation-plan-update.htm. Downtown mobility was a key topic at the Downtown Livability Initiative open house held on November 29, 2012. A Spring Transportation EXPO is planned for April 24, 2013 - the Downtown Transportation Plan Update will have a significant

presence at this event to highlight preliminary recommendations, answer questions and to gather input.

DOWNTOWN MULTIMODAL TRANSPORTATION COMPONENTS

Community outreach has identified issues and opportunities related to four Downtown mobility components: Private Vehicles (Roadways), Transit, Pedestrians, and Bicycles. Staff and the Transportation Commission have used projected 2030 land use and travel demand to identify Downtown mobility needs and have developed preliminary policy and project proposals to address them. Through this process we have uncovered some significant mobility gaps, some pleasant surprises and some issues that will be referred for further analysis to the Downtown Livability Initiative. Recommendations for transportation policies and projects will include early implementation solutions for each transportation mode.

ROADWAYS:
TRAVEL DEMAND MODELING AND INTERSECTION LEVEL OF SERVICE

Analysis of the 2030 travel demand and intersection level of service (LOS) are quantitative metrics that will help identify transit and roadway mobility issues and inform the development of policies and project concepts. Adopted measures of effectiveness for private vehicle passenger mobility are related to the delay at intersections measured in seconds and to the travel time along roadway corridors, both of which can be derived from the modeling.

Anticipated land use and planned transportation capacity projects are significant inputs to travel demand modeling. 2030 Downtown land use is projected to accommodate 70,300 jobs and 19,000 residents, an increase of 27,775 jobs and 12,142 residents over the 2010 Base Year, as shown in Table 1.

Table 1

Downtown Bellevue	2010 (Base Year)	2030 (Baseline)	Growth
Employment	42,525	70,300	+27,775/65%
Population	6,858	19,000	+12,142/177%

2030 TRANSPORTATION NETWORK ASSUMPTIONS

The assumed 2030 transportation network includes many roadway capacity projects that support Downtown mobility and transit service enhancements such as East Link and RapidRide. Significant roadway projects outside of Downtown provide a benefit to Downtown by improving overall circulation. Within Downtown, the planned expansion of NE 2nd Street and 110th Avenue NE provide additional vehicular capacity to accommodate growth.

2010 BASE YEAR ROADWAY NETWORK

The 2010 Base Year modeling platform is the platform for the Bellevue-Kirkland-Redmond (BKR) forecasting model used to determine Downtown Bellevue travel demand. The 2010 BKR network consists of the regional highway system, and roadways in the Bellevue, Kirkland and Redmond area.

2030 BASELINE PROJECTS - "NO BUILD" SCENARIO

The 2030 Baseline "No Build" roadway network adds new projects in Bellevue, adjacent cities and the greater Central Puget Sound Region. These assumed projects are funded or committed by the State, regional and local agencies, plus other projects that are considered to be "reasonably foreseeable" by 2030. These projects are added to the 2010 Base Year network.

The 2030 "reasonably foreseeable" projects are Bellevue CIP and TPF projects, plus those funded through Sound Transit 2 (2008) for East Link, Transit Now (2006) for Rapid Ride, Transportation Nickel Package (2003), Transportation Partnership Account (TPA) package (2005), American Recovery and Reinvestment Act (ARRA) and selected projects in the Puget Sound Regional Council's Destination 2040 plan. Within King County these funding packages support major regional roadway projects such as the Alaskan Way Viaduct and Seawall Replacement Project, SR 520 Bridge Replacement and HOV Project and the I-405 Corridor Program.

Specific Bellevue roadway capacity projects coded in the BKR model that affect Downtown Bellevue include the following:

- **NE 2nd Street:** Widen to 5 lanes between Bellevue Way and 112th Avenue NE
- **110th Avenue NE:** Widen to 5 lanes between NE 6th Street and NE 8th Street
- NE 4th Street and NE 6th Street extensions
- **120th Avenue NE:** Widen to 5 lanes between NE 4th Street and NE 18th Street
- **124th Avenue NE:** Widen between NE 8th Street and NE 15th Street
- **NE 15th / 16th Street:** New segments in the Bel-Red Subarea
- **Bellevue Way SE:** One HOV lane southbound from 112th Avenue SE to the South Bellevue Park & Ride to align with the planned southbound HOV lane between the park and ride and I-90

2030 "BUILD" SCENARIO PROJECT LIST

The projects listed below are those that have been advanced, both in terms of design and funding commitment, to the point where they can be realistically added to the transportation network that directly and indirectly supports Downtown Bellevue mobility. These 2030 "Build" scenario projects have evolved through planning efforts outside of the Downtown Transportation Plan Update, for instance the Bel-Red Subarea Plan, Bellevue-Redmond-Overlake Transportation Study (BROTS), Mobility & Infrastructure Initiative, and the I-405

Master Plan. The following projects are included in the 2030 Build scenario and are added to the 2030 Baseline:

- **SR 520:** New ramps to/from east @ 124th Avenue NE to complete the interchange
- **SR 520:** Slip ramp eastbound under 148th Avenue NE to connect to 152nd Avenue NE
- **I-405:** Southbound braid from SR 520 to NE 10th Street
- **I-405:** Add one auxiliary lane (collector/distributor lane) each northbound and southbound, between SE 8th Street and SR 520. The portion north of Main Street will be accomplished through restriping not additional widening.

2030 TRAVEL DEMAND

As Downtown grows, so does overall trip-taking by residents, employees and visitors. The BKR travel demand model projects a 73% increase in the number of daily Downtown "person trips" between 2010 and 2030. A person trip is one that is taken between transportation analysis zones or TAZs, which in Downtown consist of each superblock…trips taken within a superblock are not counted. Table 2 provides details on the anticipated growth of each type of person trip taken into, out of and within Downtown Bellevue, regardless of mode (walk, bicycle, transit, private auto). The numbers are based on "trip ends" such that when a person travels from home to work and back again, that is considered two Home-Based Work trips. When a person travels from the office to lunch and back, that is considered two Non-Home Based trips. Home-Based Other trips are those between home and the store, or to school, park, library, etc.

Table 2

Type of Trip (rounded to nearest 1,000)	2010	2030	Growth
Home-Based Work Trips	55,000	104,000	49,000/89%
Home Based Other Trips	188,000	317,000	129,000/69%
Non-Home Based Trips	150,000	244,000	94,000/63%
TOTAL	385,000	665,000	280,000/73%

Of the person trips forecast for 2030, 424,000 have an origin outside of Downtown with a destination within Downtown and 104,000 originate Downtown with a destination elsewhere. The balance of the 2030 trips are the 137,000 internal trips that have both an origin and a destination in Downtown. An important consideration for the internal Downtown trips is the "walk trip".

WALK TRIPS

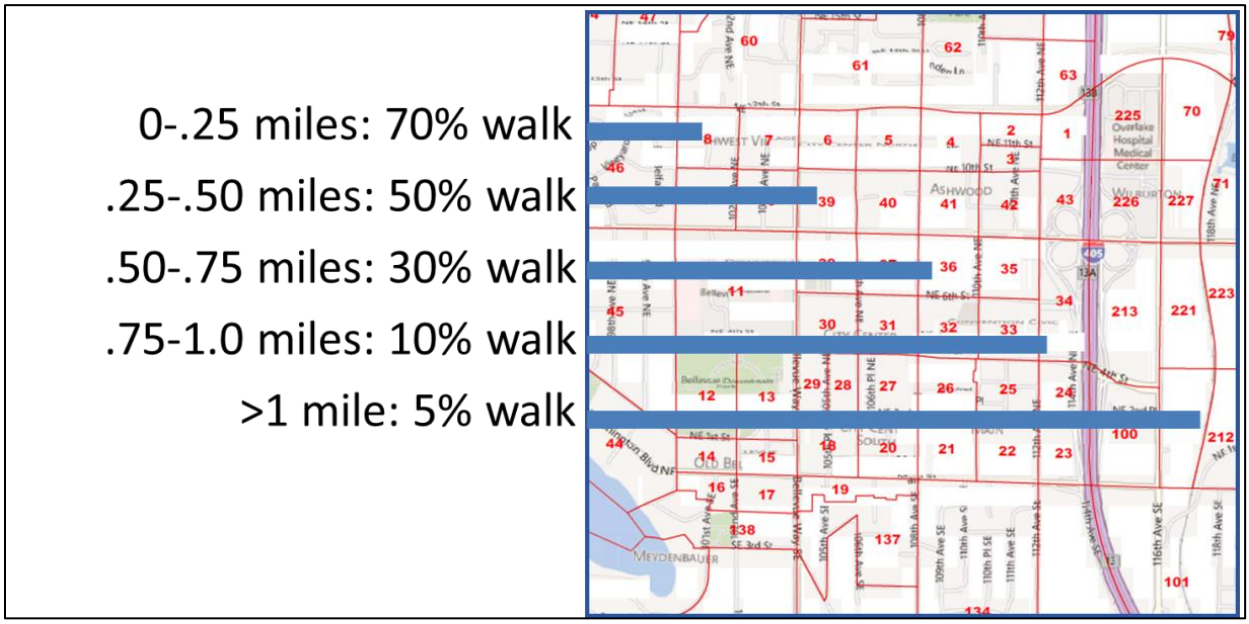
In the BKR travel demand model, any trip taken for any purpose between TAZs is considered to be a vehicle trip, even for a short trip between the small TAZs in Downtown Bellevue. BKR

results do not identify walk trips, only vehicle trips (Transit, HOV, SOV) therefore a supplemental calculation was performed to derive walk trips from the overall travel demand.

Travel demand modeling exaggerates the number of vehicle trips made within Downtown, because not everyone Downtown arrives with a car, and many people Downtown will walk between destinations that are not far apart, whether or not they have a car. Exaggerated travel demand may also exaggerate the forecast intersection delay and degrade the level of service, so the work to calculate walk trips was important.

People who arrive Downtown on transit or in a carpool may not have access to a car during the day, so the non-home based trips that they take internal to Downtown will likely be walk trips. These trips would be taken "off the top" of the total travel demand based (137,000 trips) on a "no car available" factor. For those who arrive Downtown in a car many of the trips they take internal to Downtown would also be walk trips. The factor used to determine the likelihood of a person taking a walk trip is the distance between trip origin and destination. Staff developed a simple distance-based methodology to calculate the percentage of walk trips relative to the total number of trips, shown on the Downtown TAZ base map in Figure 1.

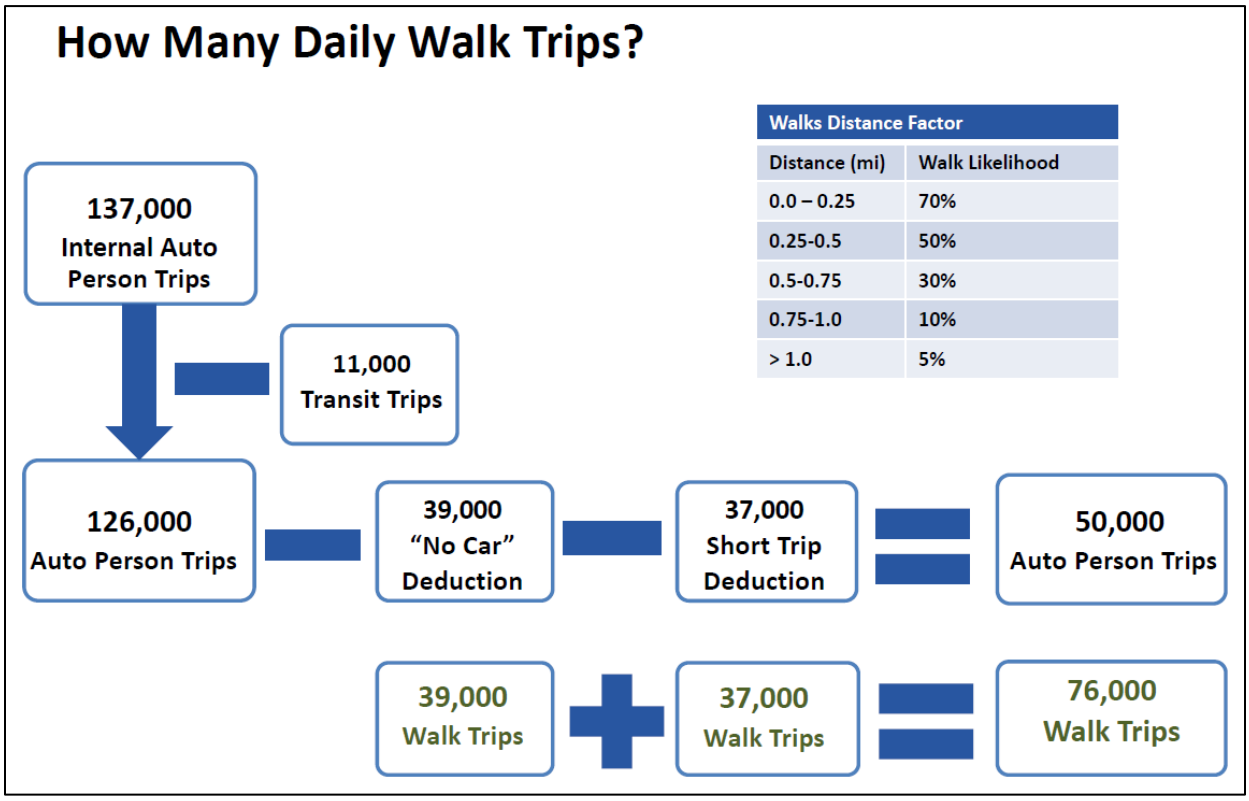
Figure 1. Distance Methodology for Internal Walk Trip Calculation



For an example in applying this distance methodology: consider the internal trips taken between Bellevue City Hall and Meydenbauer Center (0-.25 miles); at least 70% of them are likely to be walk trips, whereas of the trips between City Hall and Bellevue Square (.5 -.75miles), 30% are likely to be walk trips. While other factors play a role in a person's decision to walk or use a vehicle – weather, packages to carry, parking availability and cost, hills, etc, - for this purpose, staff applied a deduction for walk trips based only on distance, and we think this is a very conservative approach.

Based on the 2030 forecast of 137,000 daily person trips internal to Downtown, the walk trip methodology yields about 76,000 daily Downtown walk trips with a residual of 50,000 daily private vehicle trips. See Figure 2 below for a depiction of the methodology.

Figure 2. 2030 Walk Trip Calculation Methodology



INTERSECTION LEVEL OF SERVICE

Staff in the Transportation Modeling and Analysis Group led by Judy Clark built and implemented a traffic operations model – using the program "Dynameq" – to produce a dynamic traffic assignment result. This program uses the macro-level information from the BKR travel demand model to forecast intersection level of service. Unlike the micro-analysis "VISSIM" model, Dynameq does not include data on pedestrians at crosswalks or mid-block crossings, and the version used in this analysis does not make adjustments for transit activity – that can be done at a later date. However, the analysis does include the adjusted number of internal vehicle trips that resulted from the "walk trip" deduction.

With this Dynameq model, staff analyzed the intersection level of service for the 2030 Baseline condition "No Build" and made a comparison with a 2030 "Build" scenario that includes the additional roadway capacity projects identified above.

As shown in Table 3, the PM Peak Hour intersection level of service (LOS) decreases, as would be expected, from the 2010 base year to the 2030 Baseline due to additional traffic delay at signalized intersections. Perhaps surprisingly, the Downtown intersections function at an overall LOS E with an average 56 seconds of delay in the 2030 Baseline. With the projects in the

2030 "Build" scenario added to the 2030 Baseline, the Downtown traffic level of service would improve to LOS D with an average of 48 seconds of delay, even though most of these projects would be located outside of Downtown. Attachment 1 is tabular data and a map of the level of service and delay for each Downtown intersection.

Table 3

Downtown	2010 Base Year	2030 Baseline "No Build"	2030 "Build" Scenario
PM Peak Hour Volume	82,000	112,000	119,000
Average Intersection Delay per Vehicle (seconds)	27	56	48
Level of Service (LOS)	C (LOS C ranges from 20-35 sec)	E (LOS E ranges from 55–80 sec)	D (LOS D ranges from 35–55 sec)
Total Vehicle Delay in Hours in the PM Peak Hour	600	1,700	1,600

MODELING SUMMARY FINDINGS AND CONCLUSIONS

Results from travel demand modeling and roadway operational analysis are one component of the measures of effectiveness to evaluate future Downtown Bellevue mobility. Overall long-term mobility will involve providing the right facilities that balance the evolving needs of pedestrians, bicyclists, transit riders (who are also pedestrians or bicyclists at some points in their trip) and automobile drivers and passengers (who, as we have seen, also walk in significant numbers in Downtown Bellevue). Using modeling tools and based on assumptions for 2030 land use and the future transportation network, staff concludes the following regarding roadway capacity:

- 2030 Baseline "No Build" congestion within Downtown Bellevue is not gridlock, and in fact the overall level of service is within the adopted LOS standard for Downtown
- 2030 "Build" scenario of planned regional and local projects built outside of Downtown Bellevue will improve access to the regional roadway system (I-405) and connectivity to east Bellevue and the Bel-Red Subarea
- 2030 "Build" Scenario projects will help reduce congestion within Downtown, especially on east-west arterials
- Additional general purpose vehicular capacity beyond the 2030 "Build" scenario projects is not shown by the modeling to be needed within Downtown Bellevue to accommodate 2030 projected growth
- Modeling does show that certain intersections may have excessive delay and require additional analysis

- Implementation of adaptive signal system technology (SCATS) at Downtown intersections is optimizing the available capacity in the roadway system – and also better accommodating the needs of pedestrians and transit

TRANSIT

Through community outreach, travel demand analysis and conversations with the Transportation Commission, four transit components have emerged as topics that are highlighted in the Downtown Transportation Plan Update: Transit Coverage; Transit Capacity; Transit Speed and Reliability; and Transit Passenger Comfort, Access and Information. Each of these topics will be discussed separately below. First, an overview of the transit demand as forecast by the BKR travel demand model.

TRANSIT DEMAND

The BKR travel demand model provides a forecast for transit trips that are generated by Downtown growth. Similar to the analysis of roadway capacity, transit demand analysis provides a look at transit demand relative to projected transit supply so that measures can be taken to bridge the gap. Table 4 provides a summary of transit demand – the numbers indicate both boardings and alightings that occur in Downtown Bellevue, but not transfers that have a destination outside of Downtown. The model results have been adjusted to account for the short trips within Downtown that are more likely to be on foot than on transit. Note that the model anticipates significant growth in transit activity in Downtown Bellevue.

While a five-fold increase in total transit trips between 2010 and 2030 is substantial, a breakdown of the actual transit trips makes the numbers more manageable.

Table 4. Downtown Transit Ridership Forecast

Transit Trips (rounded to nearest 1,000)	**2010**	**2030**	**Growth**
Total Boardings + Alightings	11,000	62,000	51,000
Adjusted Total Boardings + Alightings	10,000	57,000	47,000
2030 Transit Boardings + Alightings by Destination			
Trips Entering Downtown	47,000		
Trips Leaving Downtown	4,000		
Trips Staying Downtown	6,000		
2030 Boardings + Alightings by Purpose			
Home-Based Work		36,000	
Home-Based Other		15,000	
Non-Home Based		6,000	
2030 Boardings + Alightings by Time of Day			
AM Peak			15,000
PM Peak			17,000
All other times			25,000

TRANSIT COVERAGE

Downtown transit coverage is the calculated percentage of residents and employees who have access to the frequent transit network. A couple of definitions are appropriate here. The frequent transit network as used for DTP is 15-minute or better transit service with a 20-hour span of service - consistent with the King County Metro definition. One or more bus routes may combine to provide frequent transit service such that two routes each with 30 minute service provide 15-minute service along the corridor where they operate together. Transit coverage, for DTP purposes only, is the percent of Downtown residents and employees who live or work in a transportation analysis zone (TAZ) that is touched by a 600-foot radius circle from a bus stop with frequent bus transit service or a light rail station. A 600-foot radius was selected because it is the approximate length of a block/TAZ in Downtown Bellevue – this is a small scale relative to typical light rail transit planning metrics of ¼ mile, or 10-minute walk distance, but it reflects the Downtown walk environment. The 600-foot radius plus the 600-foot block length results in a transit coverage calculation within about 1,200 feet (1/4 mile) of a transit stop. To support pedestrian access to transit, particular attention would be paid to pedestrian facilities – sidewalks, crosswalks, mid-block crossings, and through-block connections – in the blocks that are touched by the 600-foot radius. A more detailed future analysis may include actual walk

distance from bus stops – a walkshed analysis – but the number of bus stops and the walkshed variability make such an analysis impractical for the DTP.

Forecast population and employment is done citywide by TAZ, so for Downtown we can estimate the location of the future residents and employees. Since we can anticipate the location of bus stops and LRT stations, we can relatively easily calculate transit coverage – and the results for Downtown may be surprising. For 2010, given actual data on population and employment, and the known location and frequency of bus service, the calculated transit coverage is at 86%. For 2030, assuming East Link, Rapid Ride, and some modified transit routes, the transit coverage factor increases to 97%. These figures include only Downtown employees and not those in the Hospital district where in 2010 transit service was not that great, but now has RapidRide service and in 2030 is well served by East Link and a frequent bus route along 116th Avenue NE.

While impressive, these transit coverage numbers do not necessarily indicate that transit passengers would get a one seat ride anywhere they want to go in Downtown Bellevue. It simply means that frequent transit service is proximate to most people who live and work in Downtown. Some walking is necessary and a transfer may be required, but overall Downtown is now, and is expected to be well served by transit.

Preliminary recommendations based on this finding assume a modification of some transit routes to better serve the northwest and southeast quadrants of the Downtown, a successor to the ST 550 route to serve the southwest quadrant, and a frequent route on 116th Avenue NE to serve the hospitals.

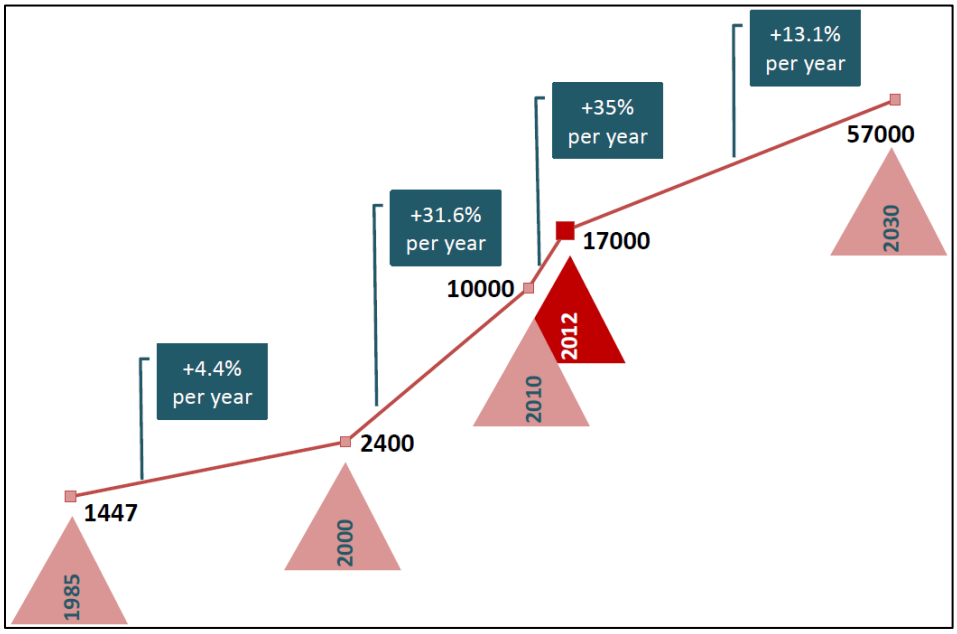
TRANSIT CAPACITY

As shown by the transit demand numbers in Table 5, there is a substantial estimated increase in the number of people expected to use transit in 2030. Table 5 and the accompanying Figure 3 reveal that large percentage increases in transit use are not unprecedented in Downtown Bellevue. In 1985, according to the CBD Implementation Plan DEIS, there were 1,447 daily transit trips with a Downtown Bellevue destination, of which 783 were work trips and 664 were non-work trips. At the Bellevue Transit center in 1986 there were 1,850 boardings and alightings, with 1,075 of those being transfers to other buses with a destination elsewhere. The number of Downtown daily transit trips in 2000, according to the Downtown Implementation Plan Update DEIS was 2,400. Each of these documents also forecasts transit demand and states that an increase in transit service will be needed to accommodate the anticipated demand.

Table 5

Year	Daily Transit Boardings + Alightings
1985	1,447 (actual)
2000	2,400 (actual)
2010	10,000 (modeled, walk trip adjusted)
2012	17,700 (actual)
2030	57,000 (forecast, walk trip adjusted)

Figure 3. Downtown Transit Ridership

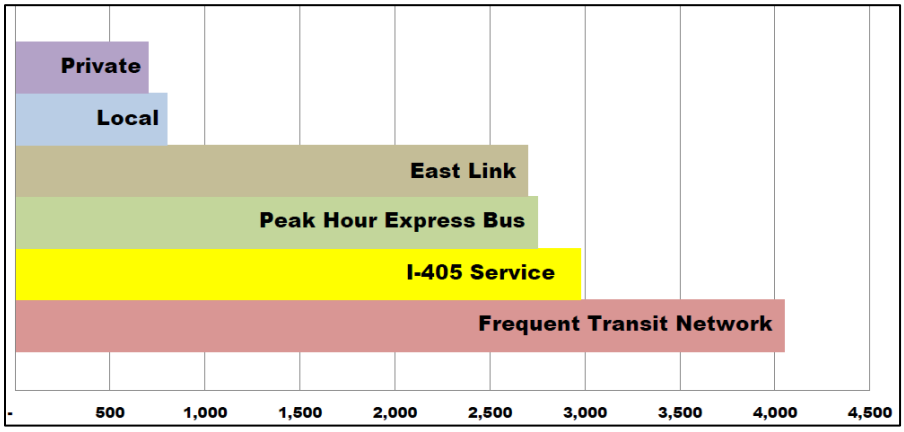


In 2010, about 1,150 daily bus trips provided seats (or standing room) for the estimated 10,000 daily transit passengers. By 2030, the number of daily bus trips is projected to increase to 1,750 - an increase of 50% over 2010. In the 2030 PM Peak hour throughout Downtown, there are about 210 buses per hour plus East Link, and about 17,000 transit riders total. PM Peak ridership is comprised of 3,000 transit passenger trips destined for Downtown Bellevue, and 14,000 transit passenger trips outbound from Downtown. The challenge for transit capacity is the larger number of outbound passenger trips and the number of buses required to accommodate those passengers. With that factor in mind the transit service is expected to be provided by transit agencies and the private sector through a variety of service types as follows and as shown in Figure 4 - the number of transit trips is outbound from Downtown in the PM peak (14,000 transit trips):

- Local Bus: 16 per hour, 800 transit trips
- Private Service (ie. Microsoft Connect): 14 per hour, 700 transit trips
- I-405 Service: 52 per hour, 3,000 transit trips

- Peak Hour Express: 50 per hour, 2,800 transit trips
- Frequent Transit Network: 75 per hour, 4,000 transit trips
- East Link: 16 per hour, 2,700 transit trips (based on 7.5 minute headway)

Figure 4. PM Peak Hour Boardings by Service Type



Transit capacity factors include the ability of passengers to find seats or standing room on buses and trains, plus the ability of the surface streets to accommodate the anticipated number of buses. As noted above, the amount of daily transit service needed in 2030 is about a 50% increase over 2010. The role of the Downtown Transportation Plan is to identify this potential service gap for elected officials and the community, but not to develop a plan for how to fill that gap. The DTP will identify the infrastructure needs to accommodate the 2030 bus trips. Since PM Peak hour is the period in which there is the greatest demand for roadway space and intersection time, we have focused on the 210 buses moving on Downtown streets in the PM Peak (5PM to 6PM). We have also studied the capacity of the Bellevue Transit Center during this period.

The 210 PM Peak hour buses are concentrated in the core of Downtown near the Transit Center. 108th Avenue NE and NE 6th Street near the Transit Center are expected to carry the most buses, with about 120 to 150 buses per hour moving in both directions. As buses flow through Downtown they disperse to the street grid, yet some arterials will carry substantial bus volumes. Segments of Main Street, for example will have about 60 to 90 buses per hour, parts of NE 4th Street and Bellevue Way will each have about 30-50 buses per hour, NE 8th Street will have about 15 to 30 buses per hour, with lesser volumes on other arterials. That compares with 40-60 buses per hour on 108th Avenue NE today, and over 200 buses per hour along the 3rd Avenue transit corridor in Downtown Seattle.

At the Bellevue Transit Center (BTC) in 2010 there were about 80 buses in the PM Peak hour that access the center platform. Along the BTC platform there are 10 transit bays, plus there are two bays associated with BTC located on 108th Avenue NE. In 2030 the number of buses using the BTC bays is expected to increase by 55% (with significant added service at the 108th Avenue NE transit bays), and the number of transit passengers using and passing through the BTC will grow substantially. Transit capacity issues relate to both the number of bus trips and the number of passengers and their movements through the BTC. Based on industry standards

(*Transit Capacity and Quality of Service Manual)*, the overall amount of space on the BTC platform appears to be adequate to accommodate the anticipated passenger volume, however the arrangement of space and furniture on the platform restricts the flow of transit transfers and limits the passenger queuing space.

Figure 6. Walkway LOS

LOS	Pedestrian Space (ft^2/person)
A	≥ 35
B	25-35
C	15-25
D	10-15
E	5-10
F	< 5

Figure 5. Waiting Area LOS

LOS	Pedestrian Space (ft^2/person)
A	≥ 13
B	10-13
C	7-10
D	3-7
E	2-3
F	< 2

Pedestrian level of service is based on the amount of platform space and the number of people walking through and waiting for buses. In 2010, the pedestrian density at the BTC was about 30-40 pedestrians per square foot during PM Peak. This translates to LOS A for waiting areas and to LOS A or LOS B for walkways. By 2030 with no BTC modifications, pedestrian LOS expected to fall to about LOS C for waiting areas and LOS D for walkways.

The bus capacity constraint for the BTC is congestion for buses arriving or trying to leave the transit bays, caused by queuing at intersections. BTC intersections at 108th Avenue NE and 110th Avenue NE will have significantly more buses and pedestrians that will make leaving the BTC on a bus more challenging than at present. Traffic signal operations at these intersections will require special attention to ensure the BTC can effectively accommodate anticipated buses and passengers.

Preliminary recommendations based on the findings related to transit capacity articulate policy support and advocacy for sustained and enhanced transit service for Downtown Bellevue, conceptual design strategies to improve the function and flow of the passenger platform area of the Bellevue Transit Center, and operational strategies that may streamline bus movement. And, as will be discussed in the speed and reliability section below, Bellevue could provide transit-friendly improvements on transit corridors and at select intersections.

TRANSIT SPEED AND RELIABILITY

While Bellevue does not directly supply transit service, the City does manage the right-of-way on which the buses operate. Bellevue may invest in capital improvements or traffic operations changes to the benefit of transit passengers and overall mobility.

Best practices for transit speed and reliability emphasize the application of appropriate tools in the context of the roadway corridor or intersection. Along corridors, tools include transit priority lanes, peak hour transit-only lanes, bus/bicycle lanes on transit priority arterials, and business access and transit (BAT) lanes. Other tools may include improvements to the pedestrian environment, transit stop consolidation, and off-board fare payment. At signalized

intersections, transit signal priority may be implemented – coordinated with the demands of other modes to ensure the greatest efficiency of mobility.

In future discussions with the Transportation Commission, potential transit priority corridors will be identified and appropriate tools may be discussed and recommended. Factors that may be considered in identifying a transit priority corridor include bus and passenger volumes, and schedule reliability.

TRANSIT PASSENGER COMFORT, ACCESS AND INFORMATION

The bus stop or the light rail station is the pedestrian's connection to the transit system. Information gleaned from DTP community involvement and discussions with the Transportation Commission indicates that there may be a deficit of passenger "amenities" at Downtown transit stops – although these features are clearly "essential" to the quality of the transit passenger's experience. This deficit may result in a person being uncomfortable with or unwilling to take the step to become a transit passenger. Staff has consolidated the issues into those related to passenger comfort at the transit stop, access of transit passengers to and from the neighborhood, and the information available to passengers at the transit stop. Recognizing that all transit stops are not created equal – that each may serve a different purpose or volume of passengers - staff has developed a set of bus stop "typologies" that categorize various types of transit stops and identified a suite of components that may be integrated to each type of transit stop and the immediate vicinity.

TRANSIT STOP TYPOLOGY

A "best practice" analysis, including a look at the Bellevue Transit Master Plan, transit agency standards, and applications in other urban centers has led to a conclusion that transit stops in Downtown Bellevue can be described in four typologies, the Local Transit Stop, the Primary Transit Stop, the Frequent Transit Network/RapidRide Station and the Transit Center/Multimodal Hub. While the Transportation Commission has not yet fully discussed or endorsed these typologies, they are described briefly as follows:

- Local Transit Stop
  - Served by a single transit route with generally 30 boardings or less per weekday
  - At a minimum, a Local Transit Ttop would provide a pole-mounted bus stop sign, an ADA standard landing pad with access to the sidewalk, and a bench or shelter if boardings warrant
  - There should be access to the neighborhood via standard urban pedestrian and bicycle facilities
- Primary Transit Stop
  - Served by one, or more scheduled transit routes with service provided at a combined headway of 30 minutes, or better
  - Bus routes may cross at intersections and transfers between routes are routine
  - Average weekday boardings range between 30 and 100 passengers

    - A Primary Transit Stop would include the Local Transit Stop components plus features that support the level of ridership and transfers, such as: passenger shelter; transit route map and transit transfer wayfinding; real time information displays; trash receptacle; security lighting; and short-term bicycle parking
    - Pedestrian access should be supported by Enhanced crosswalk components; nearby mid-block crossing(s); and neighborhood wayfinding
- Frequent Transit Network/RapidRide Station
    - Served primarily by RapidRide B - the station may also be shared with or served only by frequent transit network routes, such as the King County Metro Route #271
    - Average weekday boardings would be expected to be in the range of 100 to 1,000 passengers
    - A Frequent Transit Network/RapidRide Station would include Primary Transit Stop facilities, plus a sheltered or enclosed passenger waiting area; an Orca Card vending machine, off-board fare payment, and transit transfer information and wayfinding
    - Pedestrian access may include Enhanced or Exceptional crosswalk components, plus mid-block crossing(s) and neighborhood wayfinding
- Bellevue Transit Center/Multimodal Hub
    - Served by multiple transit routes and transit modes (bus, RapidRide, light rail) with a constant flow of transit vehicles during the day.
    - Average weekday boardings far exceed 1,000 passengers
    - A Transit Center/Multimodal Hub would include Frequent Transit Network/RapidRide Station facilities, perhaps also a rest room and “Bike Station”-type facilities with covered/secure, long-term bicycle parking
    - Special attention would be given to pedestrian flows within the facility as well as access to and from the facility. Effective use of passenger space while providing for passenger comfort, access and information would require specific design treatments common to high volume transit facilities
    - Exceptional crosswalk components would provide pedestrian access. On-street bicycle facilities would accommodate bicycle access from neighborhoods and regional facilities such as the I-90 Trail and SR 520 Trail.

PEDESTRIAN FACILITIES

Walking is a significant portion of the daily activity of people in Downtown Bellevue, and will be an increasingly important element of economic vitality, Downtown livability and personal health. Pedestrians need safe and accessible, comfortable and convenient places to walk. The Downtown Transportation Plan will propose enhancements to the three-plus decades of investments to improve the pedestrian environment.

Staff and the Transportation Commission have identified four components of the Downtown pedestrian environment that the DTP will address: crosswalks, mid-block crossings, sidewalks,

and through-block connections. The Pedestrian Corridor is a separate and important component of Downtown pedestrian and bicycle mobility.

Through community outreach staff has gathered information about the Downtown walking experience. We have also reviewed adopted codes and policies, plus the work compiled in the "Great Streets – Downtown Streetscape Design Guidelines" report from 2010 that took a comprehensive look at ways to improve the quality of the Downtown pedestrian environment. Preliminary recommendations for each component of the Downtown pedestrian system follow:

CROSSWALKS

Several features of intersections significantly affect the pedestrian environment: crossing times; crosswalk design, and intersection geometry. With respect to crosswalk design, three types of crosswalk treatments for Downtown are proposed, each intended to fit the urban context: Standard; Enhanced; and Exceptional – described below.

STANDARD CROSSWALK

In Downtown Bellevue the current standard crosswalk design consists of 2 parallel white bars that are spaced 8-feet between the inside of the stripes. A standard crosswalk also has a pedestrian actuated signal at the corner that provides both audible and countdown indicators – these are being installed throughout the Downtown as the older signal heads are replaced. There is a comfortable consistency in having this standard at many intersections, as both motorists and pedestrians know what to expect.

ENHANCED CROSSWALK

Crosswalks at certain intersections warrant some enhancement beyond the standard. Enhanced crosswalks would be located at intersections where high numbers of both pedestrians and vehicles are expected, and where the urban design treatment along the street would be carried through the intersection.

The design tools to create an enhanced crosswalk would include: wider than standard to accommodate a large number of pedestrians and provide a buffer from vehicles; wayfinding at corners; weather protection at corners; special paving treatment across the street; alternative striping, ie) piano key or "continental" striping; and curb bump outs or tighter radius to shorten crossing distance, calm traffic and provide pedestrian queuing areas.

EXCEPTIONAL CROSSWALK

The Downtown Bellevue Streetscape Design Guidelines (December 2010) refers to "celebrated intersections" where the pedestrian is provided a very appealing place to walk across the street. For the Downtown Transportation Plan, staff has considered additional guidance from adopted code to identify other crosswalk locations suitable for what we proposed to call "exceptional" treatment. Candidate crosswalks for exceptional treatment are those only along

the Pedestrian Corridor (NE 6th Street at 110th Ave NE, 108th Ave NE, 106th Ave NE and Bellevue Way) and in Old Bellevue across Main Street and side streets.

Exceptional crosswalks incorporate applicable design components of an Enhanced crosswalk, and may also include a pedestrian scramble signal phase, raised crossings; weather protection; and significant/landmark wayfinding.

MID-BLOCK CROSSINGS

Mid-block crossings help reduce the scale of Downtown Bellevue "superblocks" to be more manageable for pedestrians. Existing policy specifically addresses mid-block crossings:

> **Policy S-DT-47.** Reinforce the importance of the pedestrian in Downtown Bellevue with the use of a series of signalized midblock crossings. Consideration should be given to the design of adjacent superblocks, consideration of traffic flow, and the quality of the pedestrian environment when implementing mid-block crossings.

The Downtown Subarea Plan considers the mid-point of each superblock to be a candidate location for a mid-block crossing. Guidance from policy S-DT-47, plus community input, and current and anticipated demand from land use and light rail stations inform the DTP recommendations for high priority installation of new mid-block crossings. DTP will recommend prioritization but not the design of new mid-block crossings.

Existing mid-block crossings exhibit a variety of treatments, including signalization, median islands, and grade-separated pedestrian bridges. Council has approved of several locations for future pedestrian bridges across Bellevue Way, NE 4th Street and NE 8th Street. Another potential candidate location for a pedestrian bridge is across NE 6th Street between City Hall Plaza/Metro Site and Meydenbauer Center.

SIDEWALKS

Sidewalks in Downtown Bellevue provide for fundamental infrastructure for pedestrian mobility and urban design features that enhance livability. The Downtown Land Use Code prescribes the width of sidewalks and the landscaping treatment adjacent to the street. Both the private sector and public sector must incorporate the Code provisions in new buildings and infrastructure projects. Preliminary DTP recommendations to amend the Land Use Code include increasing the required sidewalk width in certain heavily travelled, and substituting a continuous landscape planter along the outside edge of the sidewalk instead of street trees in tree grates.

THROUGH-BLOCK CONNECTIONS

Similar in purpose to mid-block crossings, through-block connections help to break up the Downtown superblocks into more manageable sizes for pedestrians. The Land Use Code requires that through-block connections be incorporated in new development; design guidelines are provided and basic wayfinding is required. In many situations, access to plazas

between buildings can be best accomplished on a through-block connection. However, the design of existing through-block connections is so variable, that the public is uncertain as to whether they are welcome, and wayfinding is not adequate to let a person know where the through-block connection will lead.

Through-block connections are great shortcuts through superblocks that make it easier to get around on foot in Downtown, but some design refinements may be appropriate. Proposed design refinements would create standard public access wayfinding; commonly recognizable paving material or inlays; and universal accessibility according to ADA standards. Since these components affect urban design and mobility, through-block connection design considerations will be further detailed in the Downtown Livability Initiative.

PEDESTRIAN CORRIDOR

DTP community outreach has provided insights into the mobility needs of both pedestrians and bicyclists. The NE 6th Street Pedestrian Corridor is a high priority route for both walking and bicycling, and it will be increasingly important as new development occurs along the corridor and light rail becomes an anchor destination on the east end. Sections of the corridor are difficult for wheeled users to navigate due to narrow passages, steep sections, tight turns and poor sightlines.

DTP has developed a concept design that is intended to, paraphrasing a community comment, "welcome bicyclists but don't scare the pedestrians". Using designs that indicate the preferred bicycle route and incorporate traffic-calming techniques for bicyclists, the corridor can be more accommodating to all users. Design components could consist of special paving treatments, wayfinding and widening. At Compass Plaza, a winding route could be made more visible and accessible by integrating special paving into the existing brick plaza and installing wayfinding signage designed specifically for wheeled users. Design concepts will be refined through the Downtown Livability Initiative.

BICYCLE FACILITIES

Work on the DTP bicycle facilities has yielded refined project descriptions that are based on the citywide 2009 Pedestrian and Bicycle Transportation Plan and are responsive to community input. The DTP will incorporate additional tools for marking shared lanes and providing wayfinding. Bicycle facility project ideas include east-west corridor improvements on Main Street and NE 12th Street, and north-south corridor improvements on 100th Ave NE and 108th Ave NE. Considerations for shared bicycle/transit corridors will be discussed with the Transportation Commission. Integrating bicycle facilities along portions of the NE 6th Street Pedestrian Corridor will help with access to the Downtown light rail station, employment and retail destinations, and housing. Bicycle facilities along 112th Avenue NE would support the Lake Washington Loop bicycle route and improve an important Downtown bicycle commuter route as well. Staff is working on a design for 112th Avenue NE that would maintain roadway capacity

while installing a bicycle lane in the northbound direction where a dedicated bicycle facility is most needed due to the uphill grade and the busy intersection with NE 8th Street. Staff has also mapped and described bicycle routes between Downtown and nearby neighborhoods and regional bicycle facilities.

ATTACHMENT 1

Downtown Intersection Level of Service

DOWNTOWN INTERSECTION LEVEL OF SERVICE (LOS)	2010 Base Year				2030 Baseline No Build				2030 Build Scenario			
	Hourly Volume	Average Intersection Delay (sec)	LOS	Total Delay Hours in Peak Hour	Hourly Volume	Average Intersection Delay (sec)	LOS	Total Delay Hours in Peak Hour	Hourly Volume	Average Intersection Delay (sec)	LOS	Total Delay Hours in Peak Hour
Bellevue Way/Main Street	1774	21.7	C	11	2761	38	D	29	2860	45	D	36
Bellevue Way/2nd Street	1419	21.0	C	8	2993	22	C	19	3097	24	C	21
Bellevue Way/4th Street	2313	37.3	D	24	3425	38	D	36	3359	37	D	35
Bellevue Way/6th Street	851	3.3	A	1	1882	4	A	2	2027	4	A	2
Bellevue Way/8th Street	2492	39.1	D	27	3743	52	D	54	4209	52	D	60
Bellevue Way/10th Street	2226	15.6	B	10	3035	35	D	30	3532	25	C	25
Bellevue Way/12th Street	1900	17.8	B	9	2996	64	E	53	3388	31	C	29
106th Avenue/Main Street	1662	9.1	A	4	2213	44	D	27	2301	26	C	17
106th Avenue/2nd Street	1532	12.8	B	5	2770	26	C	20	2807	22	C	17
106th Avenue/4th Street	1619	23.1	C	10	3451	47	D	45	3515	45	D	44
106th Avenue/6th Street	967	18.6	B	5	1902	14	B	7	2092	14	B	8
106th Avenue/8th Street	2670	27.4	C	20	3878	61	E	66	4309	67	E	80
106th Avenue/10th Street	2517	15.8	B	11	3042	24	C	20	3196	49	D	44
106th Avenue/12th Street	1136	8.6	A	3	2430	86	F	58	2542	27	C	19
108th Avenue/Main Street	2737	13.3	B	10	2783	42	D	33	2653	33	C	25
108th Avenue/2nd Street	1644	13.5	B	6	1734	33	C	16	1675	31	C	14
108th Avenue/4th Street	2013	29.4	C	16	2896	23	C	18	2919	25	C	20
108th Avenue/6th Street	1083	25.8	C	8	959	36	D	10	1088	21	C	6
108th Avenue/8th Street	3494	37.9	D	37	4265	74	E	88	4956	49	D	67
108th Avenue/10th Street	3146	13.8	B	12	2909	32	C	26	3141	46	D	40
108th Avenue/12th Street	1678	12.8	B	6	3248	89	F	80	3496	48	D	47
110th Avenue/Main Street	2239	4.9	A	3	2598	50	D	36	2377	74	E	49
110th Avenue/2nd Street	1513	29.7	C	12	2271	78	E	49	2241	100	F	62
110th Avenue/4th Street	3149	62.7	E	55	3646	99	F	100	3570	52	D	51
110th Avenue/6th Street	1004	26.1	C	7	1793	34	C	17	1841	33	C	17
110th Avenue/8th Street	2921	21.7	C	18	4794	71	E	94	5750	59	E	95
110th Avenue/10th Street	3095	20.9	C	18	2771	52	D	40	3093	52	D	45
110th Avenue/12th Street	2113	12.9	B	8	3550	44	D	43	3638	35	D	36
112th Avenue/Main Street	3675	50.5	D	52	4803	71	E	95	5071	76	E	107
112th Avenue/2nd Street	1993	38.9	D	22	2932	46	D	38	3457	55	D	53
112th Avenue/4th Street	4045	51.9	D	58	4560	87	F	110	4492	74	E	92
112th Avenue/6th Street	2634	44.4	D	32	3642	56	E	57	3515	55	E	54
112th Avenue/8th Street	5290	30.8	C	45	6535	104	F	188	7564	68	E	144
112th Avenue/10th Street	4721	9.5	A	12	3649	59	E	59	4410	53	D	66
112th Avenue/12th Street	3042	26.6	C	23	5006	54	D	75	4941	57	E	78
Downtown Network	82307	26.6	C	609	111865	56.0	E	1739	119122	48.5	D	1604

Downtown Intersection Level of Service