



South Downtown I-405 Access Study Overview

April 29, 2020

An update on the South Downtown I-405 Access Study was to be presented to the Bellevue City Council on April 20, 2020. The City Attorney's Office determined that the meeting could not be conducted as it did not satisfy the "necessary and routine" requirements for City Council meetings as per the Governor's issued Emergency Proclamation due to the COVID-19 crisis.

The decision was made to initiate the study and return to Council in the summer for a mid-point review following stakeholder and public engagement. A final Council presentation and alternative selection will occur toward the end of the year.

The overview provides background information about the purpose and scope of the study, the criteria to be used to make decisions, and the public outreach and involvement plan.

Background

The I-405 corridor program Master Plan approved in 2002 includes a new half-diamond interchange at NE 2nd Street to improve vehicle access to/from the south, hereafter referred to as South Downtown I-405 Access. This new interchange would complement the partially completed half-diamond interchange to/from the north at NE 10th Street.

The 2019 state legislature authorized up to \$215 million in bonds against toll lane revenue to complete the I-405/Renton to Bellevue Corridor Project. Furthermore, the 2021 state legislature may consider an additional funding package to help implement additional components of the I-405 Master Plan. The South Downtown I-405 Access could be an element of these funding packages if a preferred connection alternative is selected prior to WSDOT and the state legislature making these decisions.

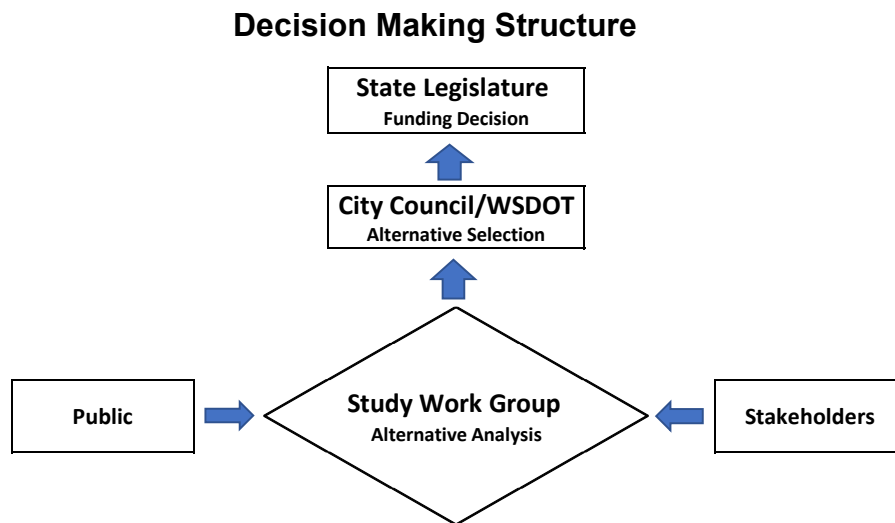
As part of the Renton to Bellevue Express Toll Lane project (ETL), the Main Street bridge over I-405 will be replaced with a longer span to accommodate the new lanes. In 2015/2016, WSDOT, in collaboration with the City, performed an analysis to ensure that the new Main Street bridge would be forward compatible and would not preclude potential options to implement the South Downtown I-405 Access. The 2015/2016 analysis identified several potential locations/options where a South Downtown access connection could be accommodated by the new Main Street bridge. Some of the alternatives would require the closure of 114th Avenue from its northern terminus to as far south as SE 8th Street. See Exhibit A, WSDOT I-405 Master Plan Design Decision memo, and Exhibit B, Alternative Concepts considered by WSDOT in its 2015/2016 analysis.

Recent proposed private sector redevelopment along 114th Avenue, and the East Main transit-oriented development (TOD) land use code amendment (LUCA), as well as the development concepts proposed for the Wilburton area, have created a pressing need for the City to identify a preferred I-405 connection alternative. The selection of a preferred alternative will enable the City to

set clear expectations for property owners/developers regarding right-of-way needs and site access options and restrictions, thereby minimizing the potential incompatibility between land use and transportation decisions.

Decision Making

Council, in collaboration with WSDOT, will develop, analyze and select a preferred alternative. The state legislature has the ultimate decision-making authority to fund the final design and construction of the project.



Proposed Purpose and Need Statement and Guiding Principles of the Study

Purpose of the study: In partnership with the Washington State Department of Transportation (WSDOT), develop, analyze and select a preferred alternative to ensure that south Downtown vehicle access to/from I-405 has the best possible outcomes for Bellevue.

It should be noted that this is not a design study, but it will include a conceptual design for scoping level cost estimation to use in the upcoming legislative session and to inform adjacent private sector development proposals.

Need for the study:

- The I-405 Master Plan identified the need for a new vehicle access point at NE 2nd Street.
- Bellevue Comprehensive Plan policy identifies NE 2nd Street as the preferred location of a new interchange to I-405 with access to/from the south.
- Alternatives identified in the 2015/2016 WSDOT analysis have varying degrees of impact on 114th Avenue. Not knowing the specific location and configuration leaves the future of 114th Avenue NE in a state of uncertainty; Development Review staff would not be able to tell developers what to expect regarding their future access to 114th Avenue.

- Information on project implementation cost is needed by state legislators for budgeting.

Guiding principles of the study:

The following proposed guiding principles, “MESSAGE”, establish the desired outcomes and process for the study:

- **M**aximize System Performance
 - Reduce commute time in and out of downtown
 - Minimize traffic merging/weaving conflict from southbound I-405 to I-90
 - Optimize overall system performance for all modes
- **E**nhance Multimodal Safety and Connectivity
 - Avoid creating additional vehicle/non-motorized movement conflicts that impede access to and the use of the East Main Light Rail Station and Lake to Lake Trail
 - Support the City’s vision for Wilburton (with elements to-be-determined following Council/Commission review of the Wilburton Citizen Advisory Committee’s recommendations)
- **S**upport Economic Development
 - Minimize losses in development capacity (floor area ratio [FAR] and residential units) and associated impacts to tax revenues
- **S**ynchronize with Adopted Plans and Urban Design Considerations
 - Support the City’s vision for the Lake to Lake Trail
 - Retain the planned multipurpose path on the current “slip ramp” east of 112th Avenue SE, or support an equivalent connection
 - Integrate with the existing and planned pedestrian, transit and bicycle systems
 - Support and integrate with the planned Grand Connection project
 - Consider the impacts to urban design and livability in the downtown, along Main Street and in neighborhoods immediately adjacent to Main Street and I-405 in the study area
- **A**ttenuate Cost and Impacts
 - Include all quantifiable costs in the analysis
 - Minimize/mitigate impacts to streams, wetlands and utilities
 - Demonstrate/document benefits to the City of improved vehicle access that justify the costs
- **G**ather Stakeholder Input
 - Include WSDOT as a partner in the study
 - Host four stakeholder meetings at key stages of the study process to solicit input and feedback. Stakeholders will include representatives from the following groups:
 - ✓ Property/business owners who may be directly impacted
 - ✓ Downtown Bellevue Residents Association

- ✓ Surrey Downs Community Club
- ✓ Wilburton Community Association
- ✓ Bellecrest Neighborhood Association
- ✓ Woodridge Community Association
- **Engage the Public**
 - Conduct two online open houses to gather broad public input
 - Host four stakeholder meetings at key stages of the study process to solicit input and feedback
 - Provide information briefings to interest groups as requested
 - Involve the general public in the study process

The diagram in Exhibit C depicts how the guiding principles will be followed and applied in alternative evaluation criteria and performance measures in the study.

Proposed Scope of Alternatives

The 2015/2016 WSDOT alternatives analysis identified and analyzed eight interchange alternatives to serve the southern area of Downtown Bellevue. These options looked at NE 2nd Street, Main Street, the Lake Hills Connector, as well as some combinations of ramps as ways to provide I-405 access to and from this area. This work included input from the city regarding population growth and changes in land use and travel behavior since the finalization of the 2002 I-405 Master Plan.

A new south Downtown access point has been included in WSDOT's I-405 Master Plan and the City's Comprehensive Plan for many years. However, the specific location and configuration of access has yet to be decided. Meanwhile, recently proposed development activities along 114th Avenue SE, near the East Main transit station and in the Wilburton area have created a pressing need for the City to identify a preferred connection alternative.

The planned East Main transit-oriented development land use code amendment and rezone relies on current transportation assumptions in its environmental documentation (SEPA), including the entirety of 114th Avenue remaining open. Retaining the Main Street/I-405 ramp connection alternative leaves the future of 114th Avenue NE in a state of uncertainty. It also raises a significant question about the validity of the assumptions and foundation on which the current East Main TOD environmental analysis is based. Lastly, it would cause significant delay to the East Main TOD LUCA, rezone, and subsequent development.

Based on WSDOT's 2015 analysis and City of Bellevue policies, staff recommends the following alternatives for consideration in the study:

- Retain a NE 2nd Street connection
- Eliminate an alternative for new I-405 ramp connections at Main Street.
- Identify and evaluate alternatives that conform to the study guiding principles
- Include a "no action" alternative as a baseline to evaluate and recommend a preferred alternative

By leading this analysis in partnership with WSDOT, the City can exercise its full influence in selecting a preferred alternative that will best integrate land use-transportation decisions, and maximize benefits and minimize impacts to the City, its residents and businesses. It will also put the project in the best possible position to receive funding for implementation.

Study Process and Schedule

Bellevue staff will work closely with WSDOT staff throughout the study process, from alternative development and preliminary screening to concept evaluation. As depicted in Exhibit D, three Council Study Sessions are planned. In addition to tonight's briefing, a second session would be held in July, during which Council would review and select alternatives for further analysis. During the final Study Session in November, Council would select a preferred alternative.

The diagram shown in Exhibit D depicts the study key milestones and the proposed stakeholder, public and Council involvement process.

Policy Impact

The City's Comprehensive Plan identifies NE 2nd Street as the intended location of a new interchange with I-405 (Comprehensive Plan Project List – 67). Further, the East Main TOD has been developed with an emphasis on transit and pedestrian modes within and adjacent to the TOD. Additional city policy considerations that inform the location of further connections to I-405 in the south Downtown area include:

- **Policy LU-28.1:** Provide for a mix of housing, office, service and retail uses in a compact walkable development pattern that optimizes the benefits of transit investment in Bellevue's transit-oriented development areas.
- **Policy LU-28.2:** Provide walking and bicycle routes in the station area that are accessible, safe and convenient, and that connect to destinations, transit and surrounding bicycle and pedestrian networks.
- **Policy S-SW-49:** Prioritize pedestrian and bicycle movement as the primary means of travel within the station area.
- **Policy S-SW-54:** Support improved non-motorized connections on Main Street to the Wilburton neighborhood and the Eastside Rail Corridor.
- **Policy S-SW-69:** Support a future corridor design for Main Street that emphasizes safety and aspects of the character of the Old Bellevue district such as wide sidewalks, planter strips, shade trees and lighting.

Fiscal Impact

Consultant assistance for public/stakeholder engagement support will be paid for using existing funds within the Transportation Department operating budget. Otherwise, this work will be performed by Bellevue staff in partnership with WSDOT.

Options

The following options were considered in making this recommendation:

Option 1: Proceed with the South Downtown I-405 Access Study, define the purpose and need statement and guiding principles of the study as proposed, and remove from consideration an alternative for new I-405 ramp connections at Main Street based on rationale included in this memo.

Option 2: Proceed with the South Downtown I-405 Access Study with the proposed purpose and need statement and guiding principles of the study and include the Main Street I-405 connection alternative for evaluation.

Option 3: Defer the start of the South Downtown I-405 Access Study until such time as the East Main TOD LUCA and rezone process has been completed.

A project web site is currently in development.

EXHIBITS

- A. WSDOT I-405 Master Plan Design Decision Memo
- B. Access Alternatives Identified and Considered in the 2015//2016 WSDOT Analysis
- C. Proposed Guiding Principles, Evaluation Criteria and Performance Measures
- D. I-405 South Downtown Access Study Schedule

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Project webpage: <https://bellevuewa.gov/south-downtown-i-405-access-study>



Project Team

Congestion Relief & Bus Rapid Transit Projects

March 2016

DESIGN DECISION

By Caroline Barnett, P.E.

Subject I-405 Master Plan Design – NE 2nd and Main Streets

Background

The I-405 corridor program Master Plan approved in 2002 includes a new half-diamond interchange in Bellevue to improve access to/from the south. This new interchange would complement the planned half-diamond interchange to/from the north at NE 10th St. Sited at NE 2nd Street, this new interchange also requires modifications to the Main Street crossing as well as significant right-of-way acquisition.

In 2015, the legislature passed the Connecting Washington transportation package. Among the project funded is the I-405 Renton to Bellevue Express Toll Lanes project. This project adds one lane in each direction between NE 6th St in Bellevue and SR 169 in Renton. This new lane, along with the existing HOV lane, will be operated as a dual-lane express toll lane system.

In order to construct the new lane, the Main Street overcrossing structure must be replaced. This memo documents options and decisions to replace Main St in a manner that is forward-compatible with the future half-diamond interchange.

Study Options

Several options, including the Master Plan, were developed and evaluated for the future access. See the attached exhibits for an overview of each option. These options looked at using NE 2nd St, Main Street, or the Lake Hills Connector as well as some combinations of ramps as differing ways to provide I-405 access to and from this area of Bellevue. Some of these options allow for a forward compatible Main Street structure to be built with the current Renton to Bellevue project, while others might require reconstruction of the structure in the future.

A cost estimate was developed, looking at both construction and right-of-way costs, for each option. These costs are based on current conditions. Many right-of-way costs assume acquisition of full parcels, whereas it may be possible to acquire only a portion in the future. The full parcel assumption provides a conservative estimate of costs.

A benefits analysis was also performed for each option. The assumptions are outlined below:

Traffic Forecasting

The City of Bellevue provided traffic forecasts on I-405 as well as intersecting local streets. These forecasts were used as basis for future year analyses, focusing on the ramp terminal intersections. The forecasts were post-processed based on existing ramp terminal intersection turning movement volumes.

Benefits Analysis

Analysis of time saving benefits was conducted using Synchro analysis software to analyze peak hour operations at ramp terminal intersections. The peak hour operational analysis results, along with the estimate hourly approach volumes, were used to predict daily and annual travel time savings for each alternative. This peak hour to daily calculation followed the "*Methodology to Predict 24 Hour Delay at Signalized Intersection*" published in the ITE Journal, 1995. These daily results were then annualized for a 30-year period.

A net present value calculation was used to equally compare costs and benefits and generate a benefit to cost ratio for each scenario. The following assumptions were used and are typical values WSDOT uses in benefit analysis calculations:

- Intersections: ramp terminal intersections at SE 8th, NE 4th,
- Discount rate: 4% annually
- Project life cycle: 30 years
- Days per year: 260
- Individuals value of time: \$16.00 per hour
- Freight truck value of time: \$76.00 per hour
- Average passenger vehicle occupancy: 1.3 persons
- Project element assumed residual costs after 30 years:
 - Right of Way: 45%
 - Structures: 43%
 - Drainage: 40%

Results

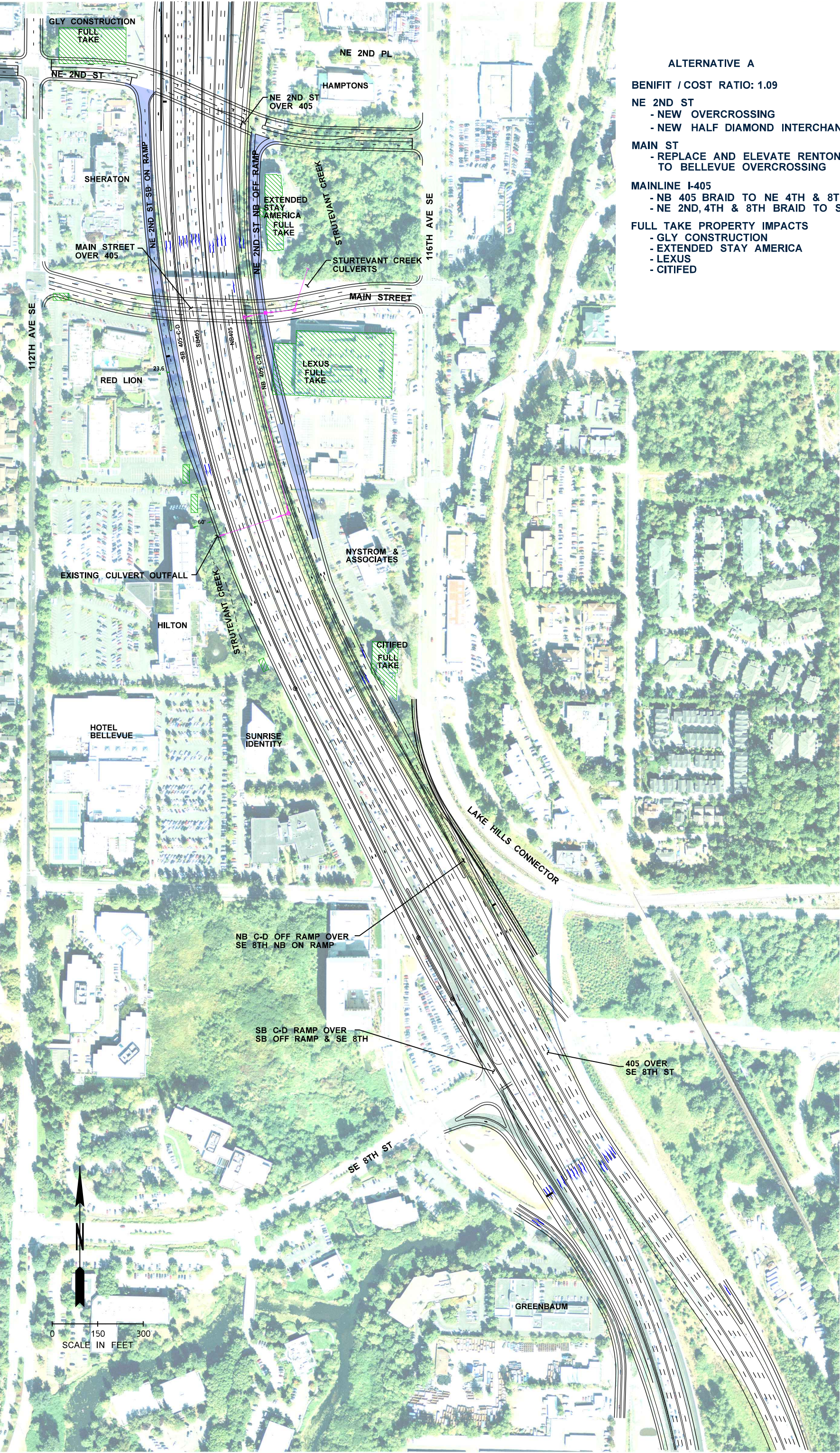
Two sets of results were developed for each scenario: present value benefits and benefit to cost ratios. The benefit to cost ratios provide insight on how the travel time savings compare to the projected project costs to determine whether benefits exceed costs. In addition to the benefit/cost ratios, it is important to evaluate the absolute value of costs and benefits, which provide information for each scenario and how individual scenarios compare to each other. The resulting costs and benefits are summarized in the chart below for the options.

Alternative	A	B	C	D	E	F	G	H
Configuration	2nd St Ramps	2nd St Ramps Flyover	Main St Ramps	Main Ramps with 2nd Crossing	Lake Hills On	Lake Hills On with 2nd Ramps	Lake Hills On with 2nd Flyover	Lake Hills On with 2nd Crossing
Present Value Benefits	\$280M	\$270M	\$270M	\$275M	\$65M	\$265M	\$275M	\$92M
Present Value Costs	\$255M	\$185M	\$160M	\$200M	\$35M	\$290M	\$220M	\$72M
Benefit Cost Ratio	1.1	1.5	1.7	1.4	1.9	0.9	1.3	1.3
Project Total Cost	\$340M	\$245M	\$190M	\$245M	\$50M	\$390M	\$295M	\$105M
Compatible with Main Street Crossing	No	Yes	Yes	Yes	Yes	No	Yes	Yes

Recommendation

Options A and F have the lowest benefit to cost ratio and are not forward compatible with a Main Street crossing. Both of these options are recommended to be dropped from further consideration. The remaining options are recommended to be carried forward. Identification of a single preferred option is not required at this point as they are all compatible with the Main Street crossing. Additionally, a ramp at the Lake Hills Connector can be added to all remaining options or constructed independently. The

Main Street Ramps option also allows for a future local road to cross I-405 at NE 2nd St, if desired for local circulation within the City of Bellevue.



ALTERNATIVE A

BENIFIT / COST RATIO: 1.09

- NE 2ND ST
- NEW OVERCROSSING
 - NEW HALF DIAMOND INTERCHANGE

- MAIN ST
- REPLACE AND ELEVATE RENTON TO BELLEVUE OVERCROSSING

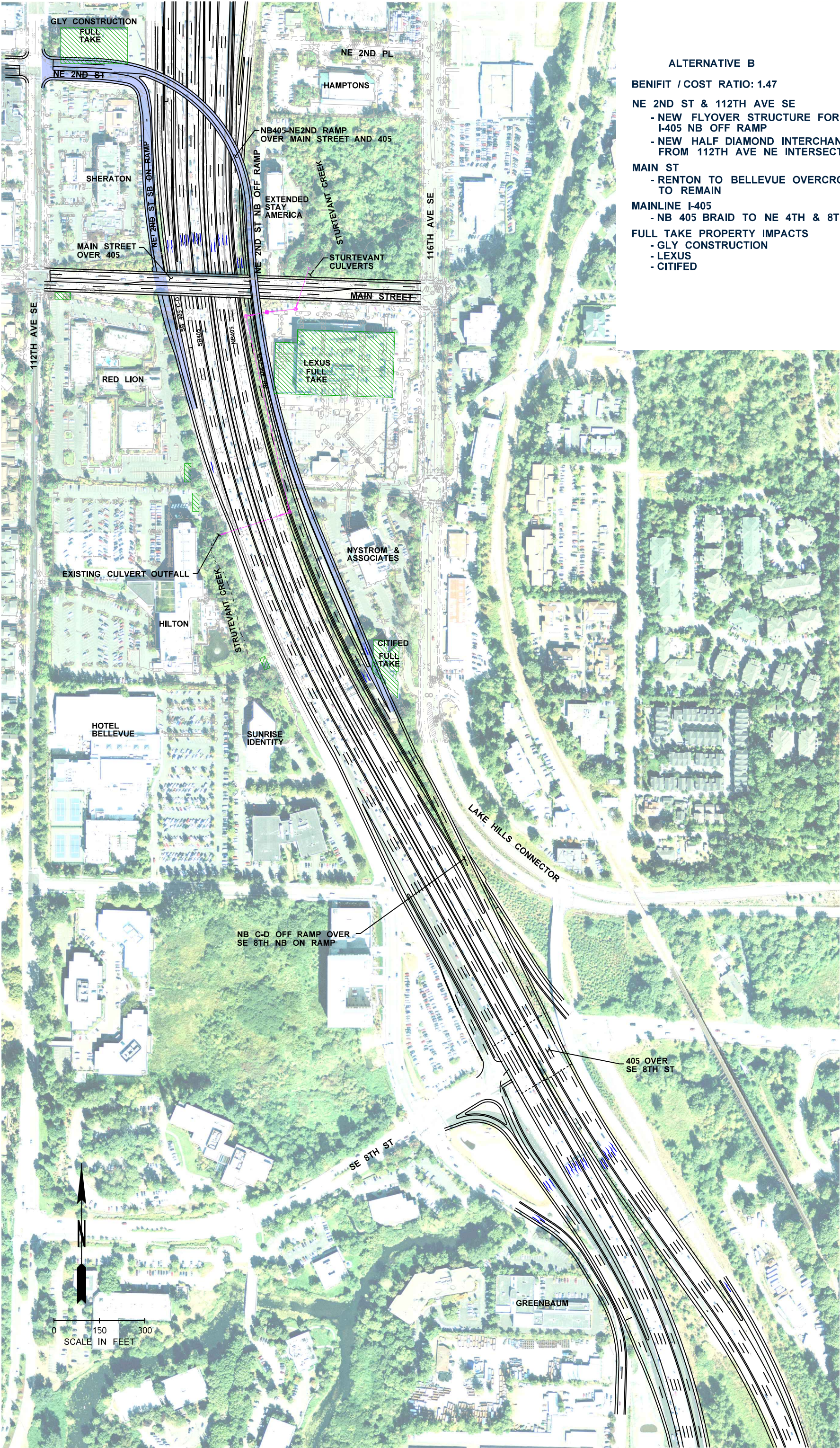
- MAINLINE I-405
- NB 405 BRAID TO NE 4TH & 8TH
 - NE 2ND, 4TH & 8TH BRAID TO SB 405

- FULL TAKE PROPERTY IMPACTS
- GLY CONSTRUCTION
 - EXTENDED STAY AMERICA
 - LEXUS
 - CITIFED

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ALTERNATIVE B

BENIFIT / COST RATIO: 1.47

NE 2ND ST & 112TH AVE SE

- NEW FLYOVER STRUCTURE FOR I-405 NB OFF RAMP
- NEW HALF DIAMOND INTERCHANGE FROM 112TH AVE NE INTERSECTION

MAIN ST

- RENTON TO BELLEVUE OVERCROSSING TO REMAIN

MAINLINE I-405

- NB 405 BRAID TO NE 4TH & 8TH

FULL TAKE PROPERTY IMPACTS

- GLY CONSTRUCTION
- LEXUS
- CITIFED

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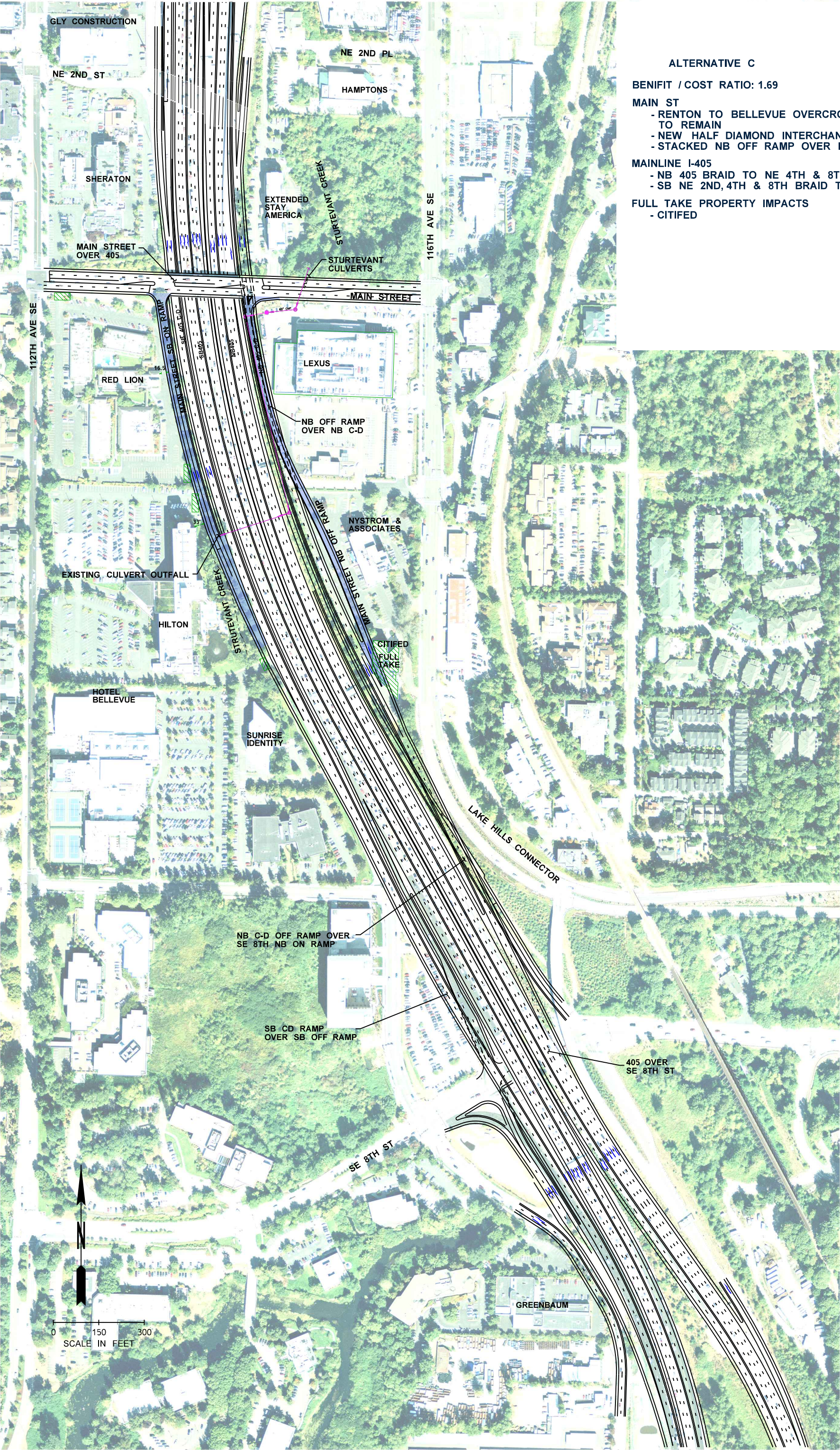
NE 2ND ST RAMPS - NB FLYOVER

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LINE 2:

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ALTERNATIVE C

BENIFIT / COST RATIO: 1.69

- MAIN ST
- RENTON TO BELLEVUE OVERCROSSING TO REMAIN
 - NEW HALF DIAMOND INTERCHANGE
 - STACKED NB OFF RAMP OVER NB C-D
- MAINLINE I-405
- NB 405 BRAID TO NE 4TH & 8TH
 - SB NE 2ND, 4TH & 8TH BRAID TO SB 405
- FULL TAKE PROPERTY IMPACTS
- CITIFED

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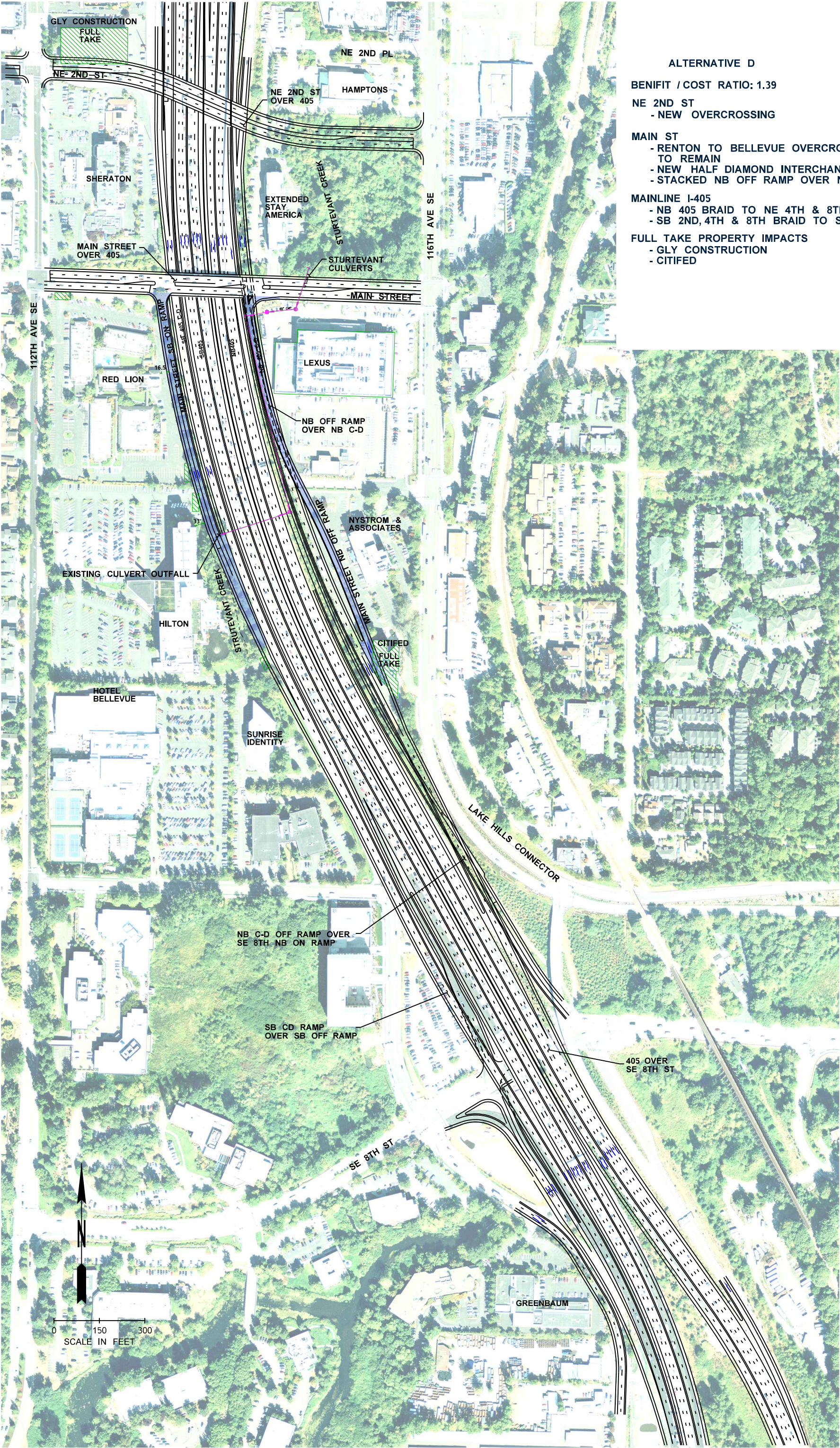
MAIN ST RAMPS

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ALTERNATIVE C

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ALTERNATIVE D

BENEFIT / COST RATIO: 1.39

NE 2ND ST
- NEW OVERCROSSING

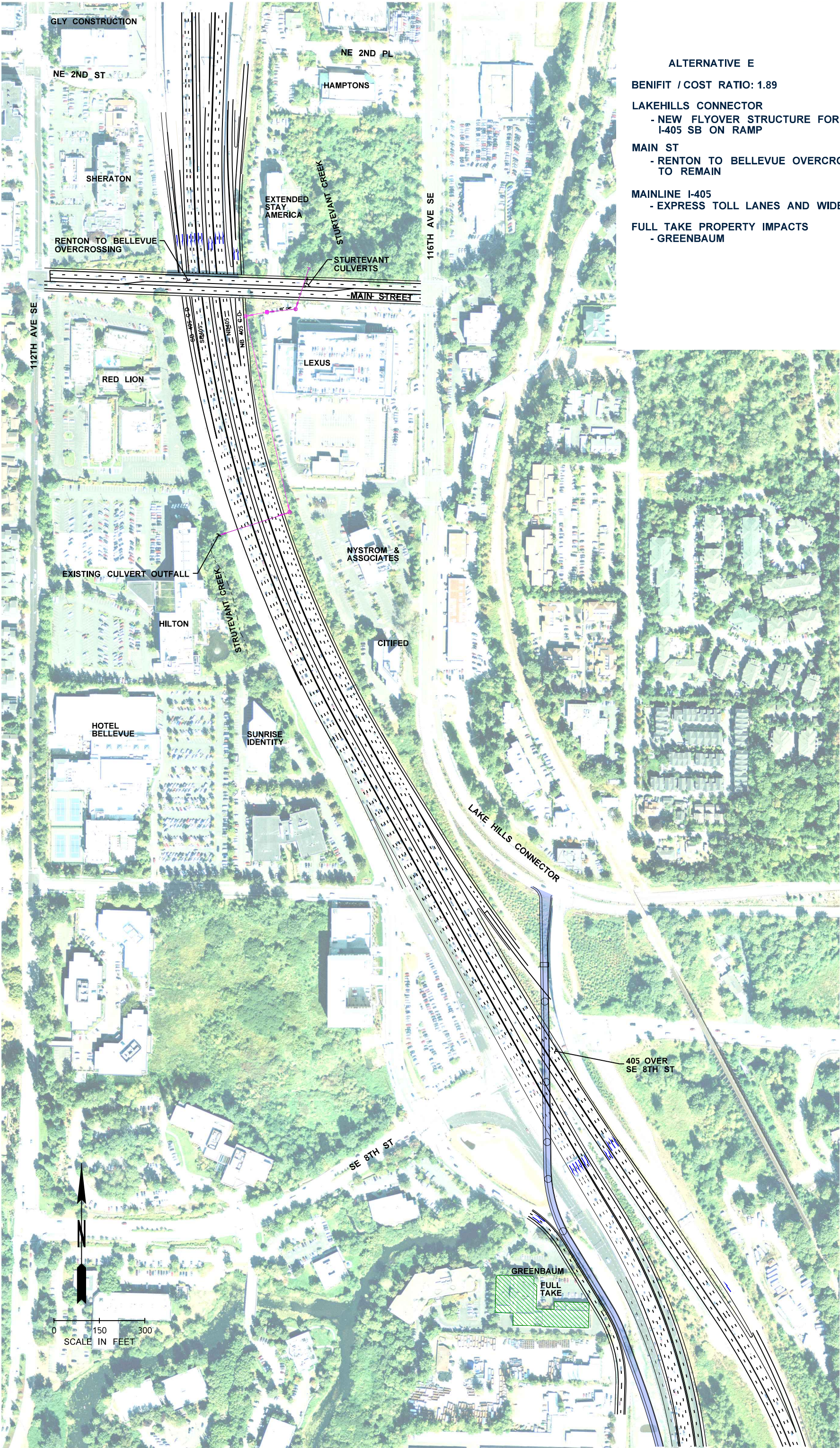
MAIN ST
- RENTON TO BELLEVUE OVERCROSSING TO REMAIN
- NEW HALF DIAMOND INTERCHANGE
- STACKED NB OFF RAMP OVER NB C-D

MAINLINE I-405
- NB 405 BRAID TO NE 4TH & 8TH
- SB 2ND, 4TH & 8TH BRAID TO SB 405

FULL TAKE PROPERTY IMPACTS
- GLY CONSTRUCTION
- CITIFED

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ALTERNATIVE E

BENIFIT / COST RATIO: 1.89

LAKEHILLS CONNECTOR

- NEW FLYOVER STRUCTURE FOR I-405 SB ON RAMP

MAIN ST

- RENTON TO BELLEVUE OVERCROSSING TO REMAIN

MAINLINE I-405

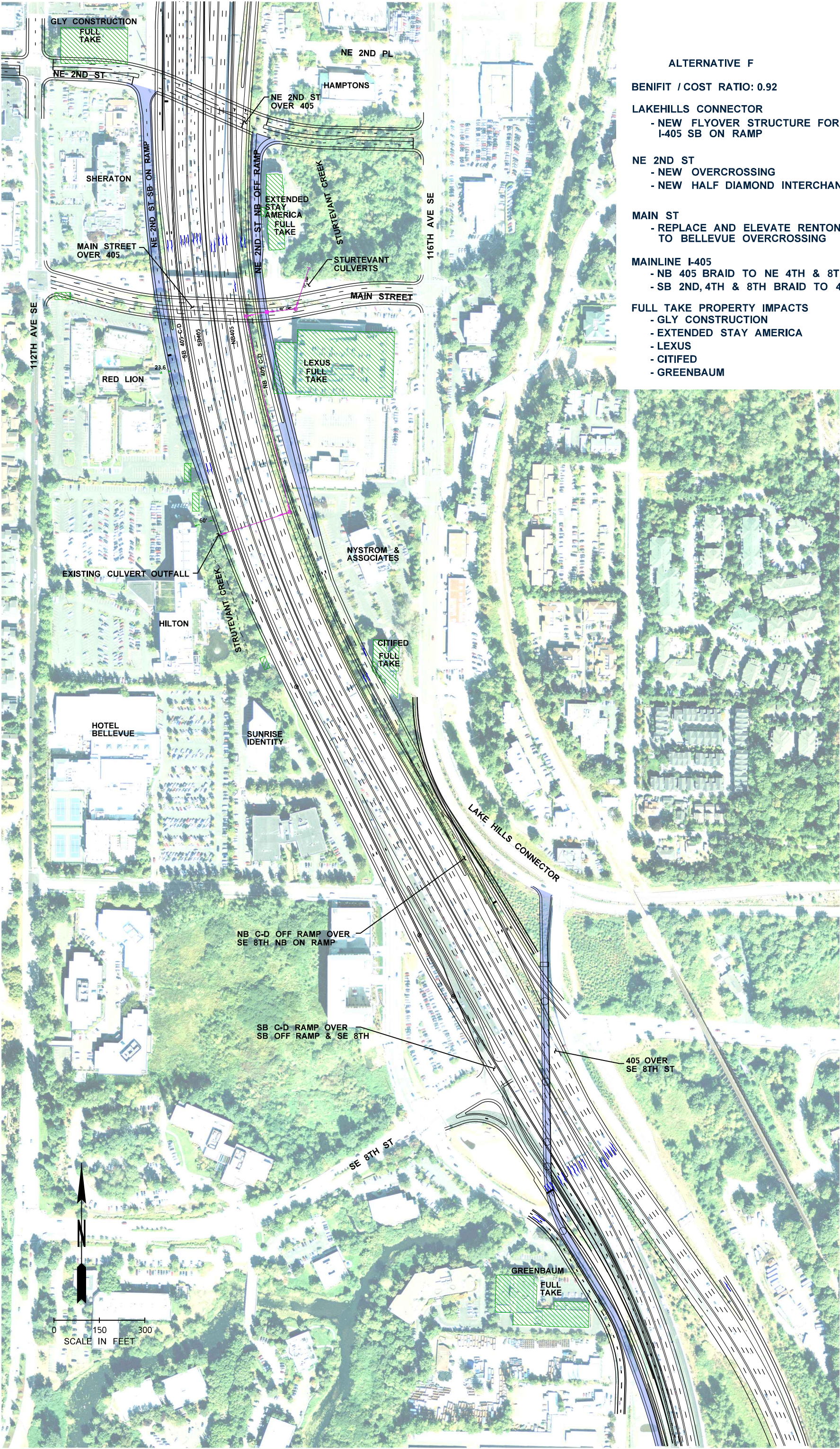
- EXPRESS TOLL LANES AND WIDENING

FULL TAKE PROPERTY IMPACTS

- GREENBAUM

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ALTERNATIVE F

BENIFIT / COST RATIO: 0.92

LAKEHILLS CONNECTOR
- NEW FLYOVER STRUCTURE FOR I-405 SB ON RAMP

NE 2ND ST
- NEW OVERCROSSING
- NEW HALF DIAMOND INTERCHANGE

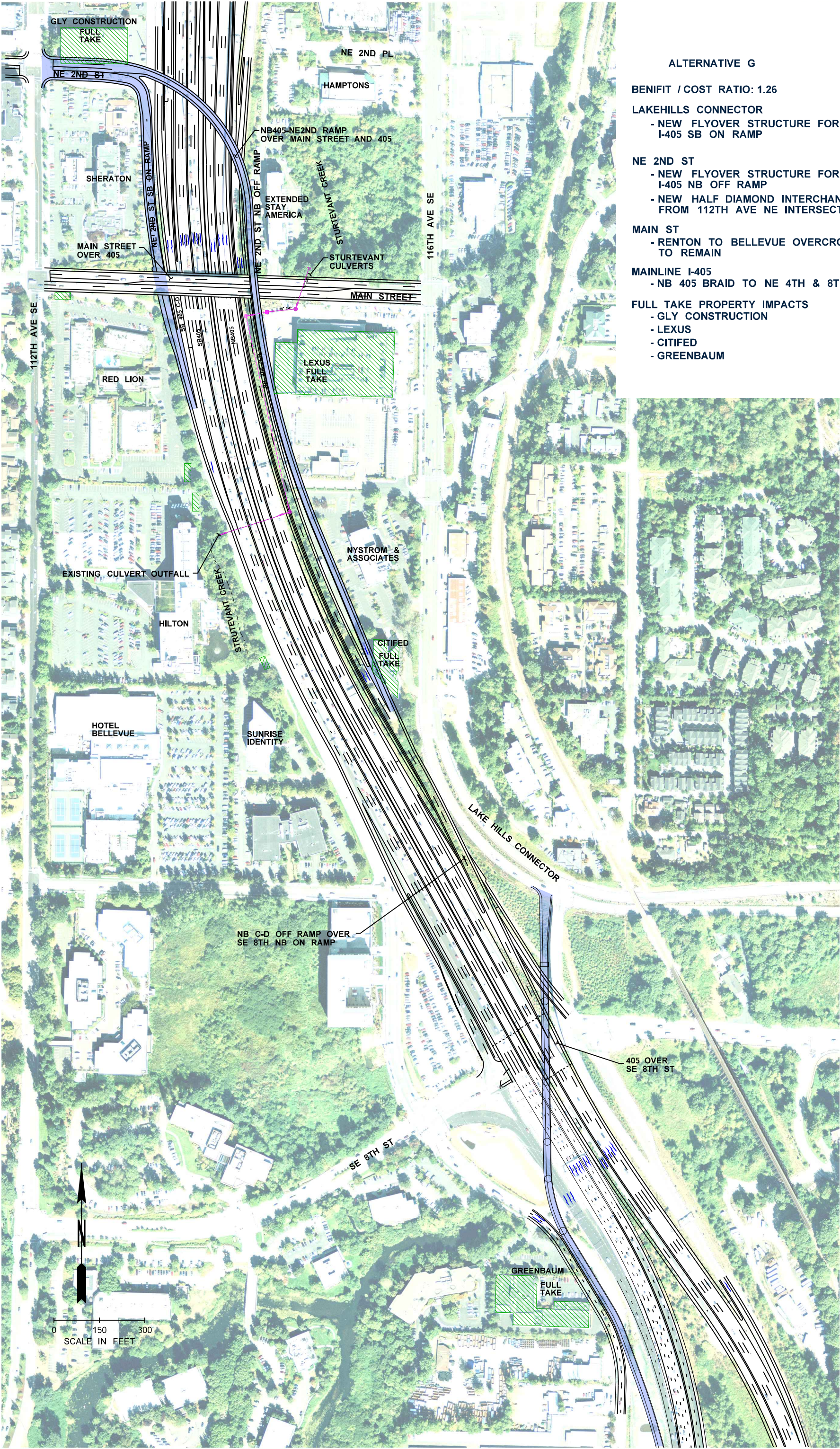
MAIN ST
- REPLACE AND ELEVATE RENTON TO BELLEVUE OVERCROSSING

MAINLINE I-405
- NB 405 BRAID TO NE 4TH & 8TH
- SB 2ND, 4TH & 8TH BRAID TO 405

FULL TAKE PROPERTY IMPACTS
- GLY CONSTRUCTION
- EXTENDED STAY AMERICA
- LEXUS
- CITIFED
- GREENBAUM

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ALTERNATIVE G

BENIFIT / COST RATIO: 1.26

LAKEHILLS CONNECTOR
- NEW FLYOVER STRUCTURE FOR I-405 SB ON RAMP

NE 2ND ST
- NEW FLYOVER STRUCTURE FOR I-405 NB OFF RAMP
- NEW HALF DIAMOND INTERCHANGE FROM 112TH AVE NE INTERSECTION

MAIN ST
- RENTON TO BELLEVUE OVERCROSSING TO REMAIN

MAINLINE I-405
- NB 405 BRAID TO NE 4TH & 8TH

FULL TAKE PROPERTY IMPACTS
- GLY CONSTRUCTION
- LEXUS
- CITIFED
- GREENBAUM

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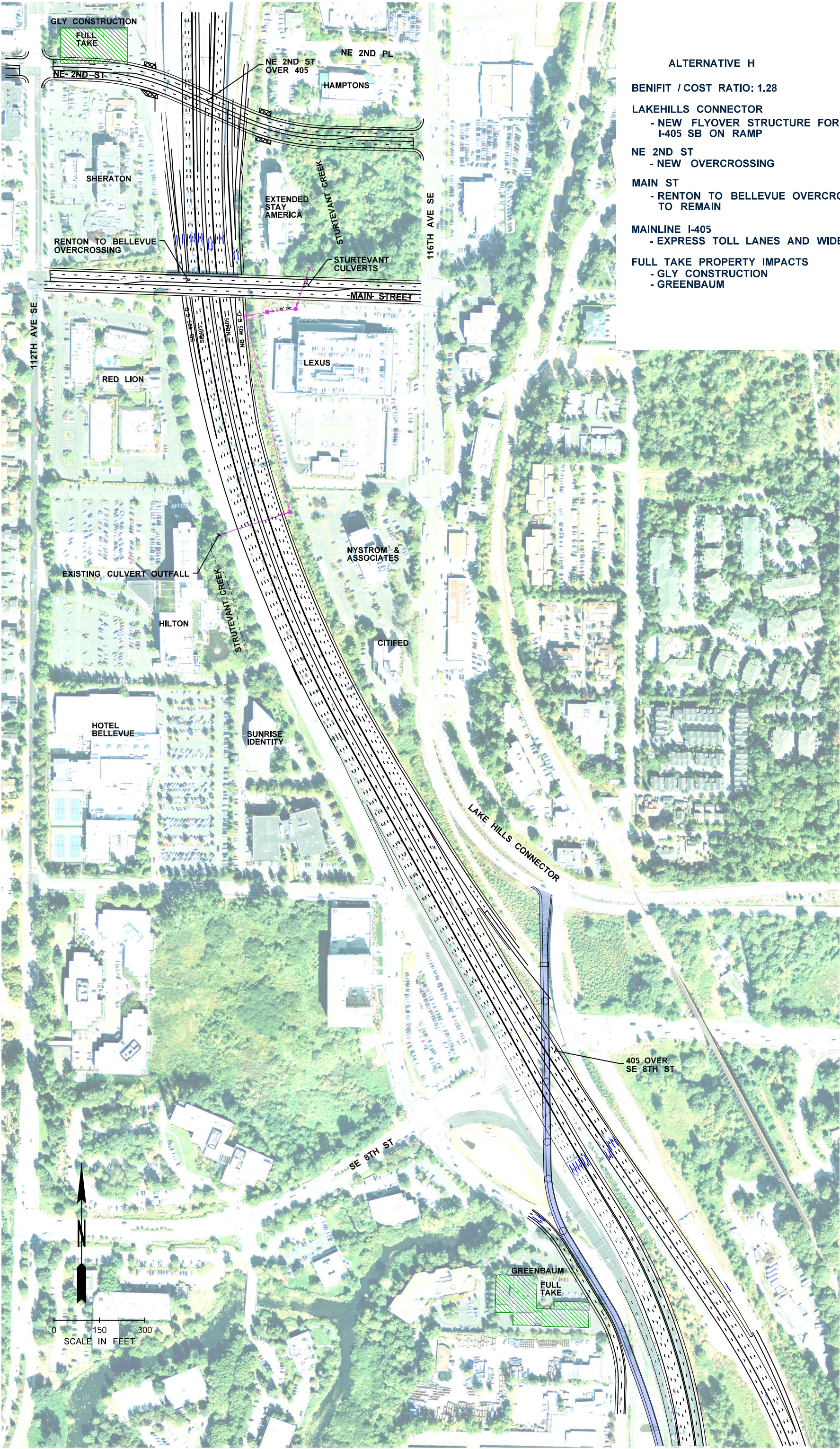
Washington State
Department of Transportation

LAKEHILLS ON & 2ND FLYOVER

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ALTERNATIVE H

BENIFIT / COST RATIO: 1.28

LAKEHILLS CONNECTOR
- NEW FLYOVER STRUCTURE FOR
I-405 SB ON RAMP

NE 2ND ST
- NEW OVERCROSSING

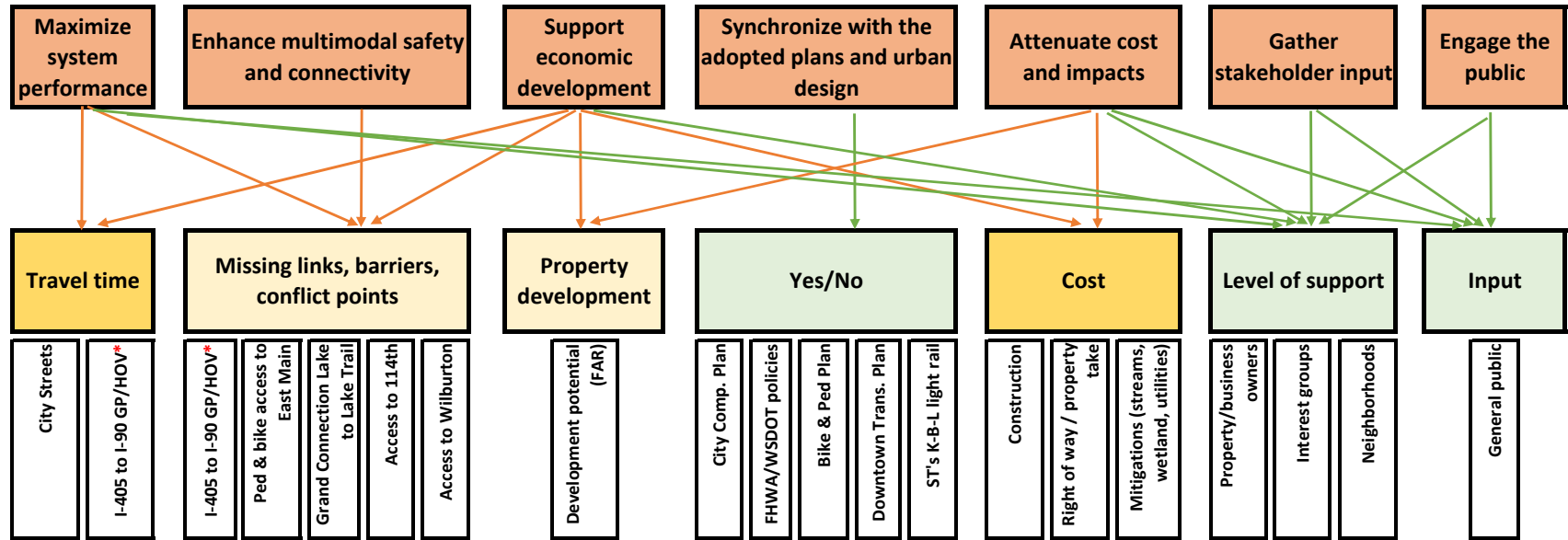
MAIN ST
- RENTON TO BELLEVUE OVERCROSSING
TO REMAIN

MAINLINE I-405
- EXPRESS TOLL LANES AND WIDENING

FULL TAKE PROPERTY IMPACTS
- GLY CONSTRUCTION
- GREENBAUM

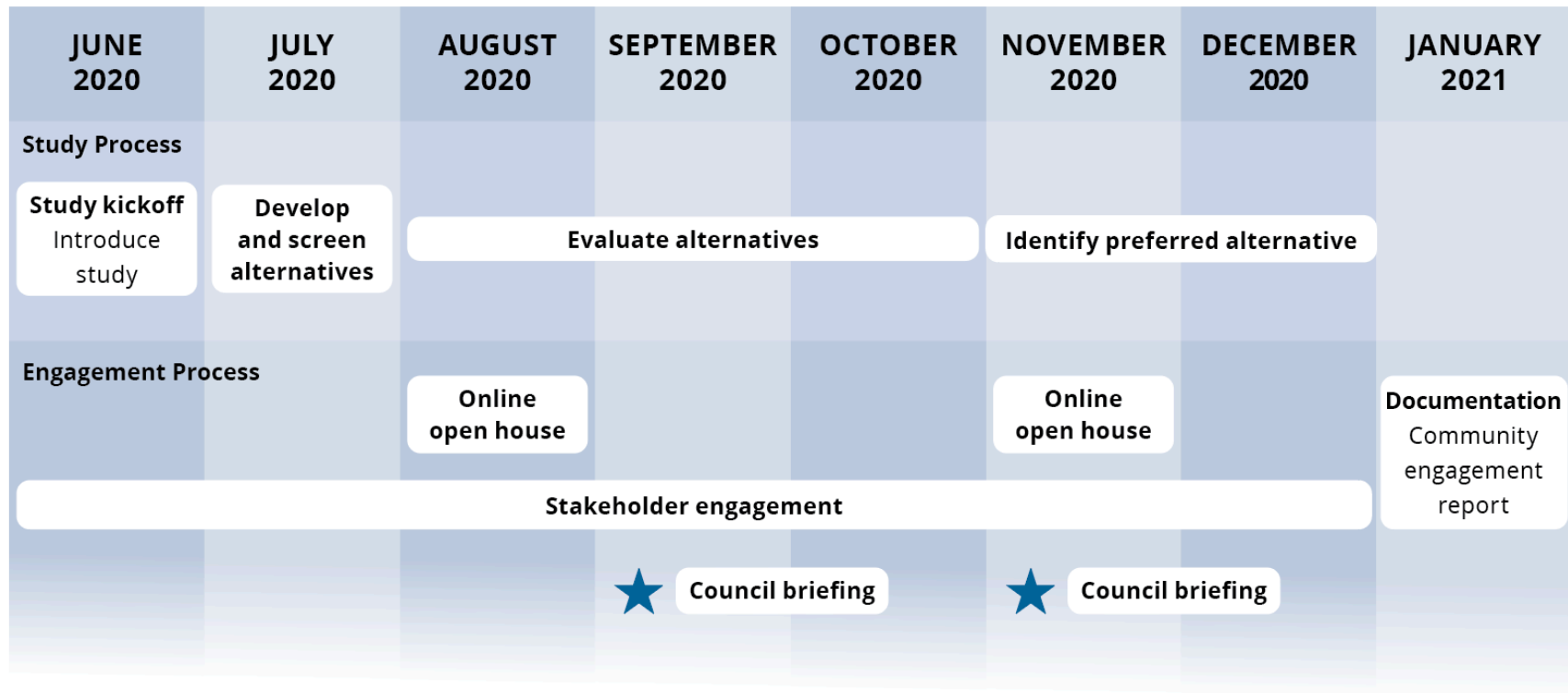
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Exhibit C. Proposed Guiding Principles, Evaluation Criteria and Performance Measures



- Guiding principles
- Evaluation criteria - quantitative
- Evaluation criteria - quantitative/qualitative
- Evaluation criteria - qualitative
- Performance measures
- * Considered as critical factors by WSDOT

Exhibit D: I-405 South Downtown Access Study Schedule



(This page updated 6/25/2020)