

Appendix C
Building Height Analysis

Building Height Analysis

Introduction

At their April 26, 2007, meeting, the Bel-Red Steering Committee recommended that the potential for buildings up to 150 feet in height be analyzed in five locations within the Bel-Red Corridor. These include the following:

- Area within the Bel-Red Corridor study area near the Overlake Hospital transit node
- Area east of 120th Avenue NE and Lake Bellevue located south and east of transit nodes
- Area within the 122nd Avenue NE node
- Area within the 130th Avenue NE node
- Area within the Bel-Red Corridor study area that is part of the Overlake Village/152nd Avenue NE node

The request by the steering committee was made based on a number of public comments expressing interest in building heights in excess of those contemplated in the alternatives analyzed in the DEIS. This FEIS evaluates several factors related to increased building height, including an analysis of view/visual impacts, urban form and its impact on community character and identity, locations of taller buildings in citywide context, differentiated economic niche/downtown competition, and relationship to the overall implementation strategy for the corridor.

This appendix is not intended to draw any final conclusions regarding building heights in the Bel-Red Corridor. The view/visual analysis is straightforward and technical in nature, while the other factors analyzed are meant to frame the remaining issues of buildings height while acknowledging that many of the topics are fairly subjective. The steering committee will weigh the discussion contained in this appendix in determining their recommendation for each of the areas analyzed.

View/Visual Analysis

To assist in evaluating the impact of taller buildings in the corridor, a 3-D digital terrain model was constructed for the Bel-Red Corridor and surrounding areas. Hypothetical buildings up to 150 feet in height were then placed in the model at each of the five locations being analyzed (this process is referred to as the Massing Model). The maximum floor-area-ratio (FAR) of these buildings assumed some potential shifting of intensity within each area for analysis purposes. Simulated images of the buildings were then inserted into photographs taken from public vantage points on the perimeter of the study area (see discussion below and photographs shown for Locations 1 through 14). The simulated images show how these buildings could be viewed from these vantage points. Figure C-1 shows the areas (within the ovals and the circles) where building height analysis was done and the approximate locations of the public vantage points (the numbered

arrows) that were considered as potential locations from which photo simulations of buildings would be done.

These vantage point locations are numbered on Figure C-1 to correspond to the location numbers listed below and are shown in the following series of photographs. This view/visual analysis deliberately chose views from public places. Refer to Urban Design Policy UD-23, which is from Bellevue's *Comprehensive Plan*, at the end of this appendix regarding views for public places.

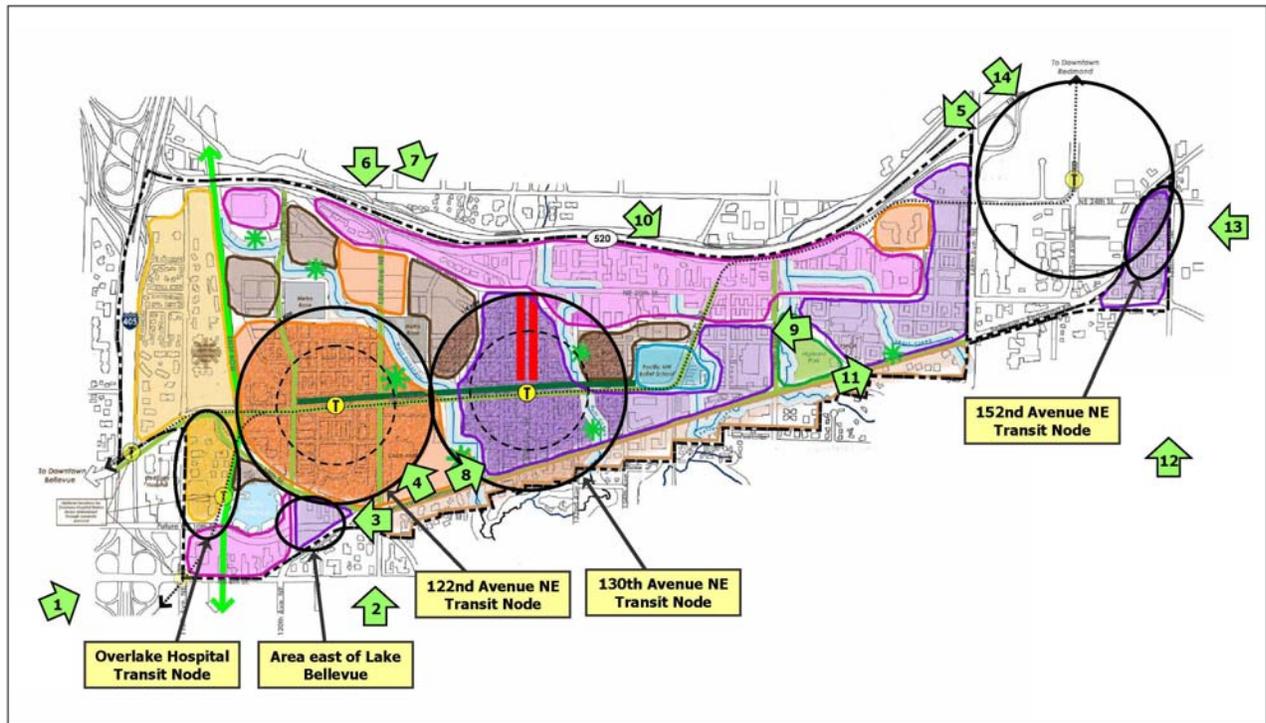


FIGURE C-1
Photo Points and Nodes

- Location 1: Looking east from City Hall plaza
- Location 2: Looking north on 124th Avenue NE at NE 7th Place
- Location 3: Looking west on Bel-Red Road east of 124th Avenue NE
- Location 4: Looking northwest on Bel-Red Road east of 124th Avenue NE
- Location 5: Looking west from 148th Avenue NE at SR 520
- Location 6: Looking south from western terminus of the SR 520 Trail at NE 24th Street
- Location 7: Looking southeast from the western terminus of the SR 520 Trail at NE 24th Street
- Location 8: Looking northeast from Bel-Red Road east of 124th Avenue NE
- Location 9: Looking west from Highland Park
- Location 10: Looking southeast from ViewPoint Park
- Location 11: Looking northeast from Bel-Red Road at 148th Avenue NE
- Location 12: Looking north on 156th Avenue NE at NE 15th Street
- Location 13: Looking west from Uniguard Park
- Location 14: Looking southeast from 148th Avenue NE just north of SR 520

As shown in several of the location photographs, taller new buildings would not be visible from some of the vantage points in the future due to topography, other buildings in the line of sight, or the presence of evergreen trees. It is noted on the photograph simulations where no visual impact would be present from the given vantage point.

Translating Building Height to Number of Building Stories

The following is a generalized translation of the building heights being analyzed in this appendix to number of stories for both residential and office development types. The ground floor for each building type is generally in the 18 to 25 foot range, depending on the retail type or other uses programmed at the street level. For office uses, the floor-to-ceiling heights above the ground floor are in the 11 to 13 foot range. For residential development, the floor-to-ceiling height above the ground-floor is typically 10 to 11 feet. The generalized translation is as follows:

- 150 feet (165 w/ heating, ventilation, and air conditioning [HVAC]) = 13-story residential = 11-story office building
- 125 feet (140 w/HVAC) = 11-story residential = 9-story office building
- 90 feet (105 w/HVAC) = 8-story residential = 7-story office building
- 60 feet (75 w/HVAC) = 5-story residential = 4-story office building

For buildings within the development nodes, City staff assigned building heights, based on the assumptions shown on Figure C-2, to hypothetical buildings located on hypothetical blocks within the development nodes.

While the maximum building height recommended for analysis by the Steering Committee was 150 feet (11 to 13 stories), City of Bellevue staff determined that, for purposes of height analysis, it would be appropriate to assume 150-foot-tall buildings in the 1/8-mile radius in the core of the development nodes where potential future light-rail stations would be located (see Figure C-2). Outside the 1/8-mile radius and within the 1/4-mile radius around the station locations, buildings up to 125 feet (9 to 11 stories) would be assumed. The Angelo's/Uwajimaya area that is part of the Overlake Village/152nd Avenue NE transit node deviates from this framework slightly, with buildings up to 150 feet tall analyzed outside of the 1/8-mile core. Buildings of four to six stories would be assumed in non-node locations (although not analyzed here), except as specifically directed by the Steering Committee for the area east of Lake Bellevue, where buildings up to 125-feet-tall were analyzed. An additional 15 feet of height on the rooftops would be available to accommodate mechanical equipment (HVAC), under all development scenarios.

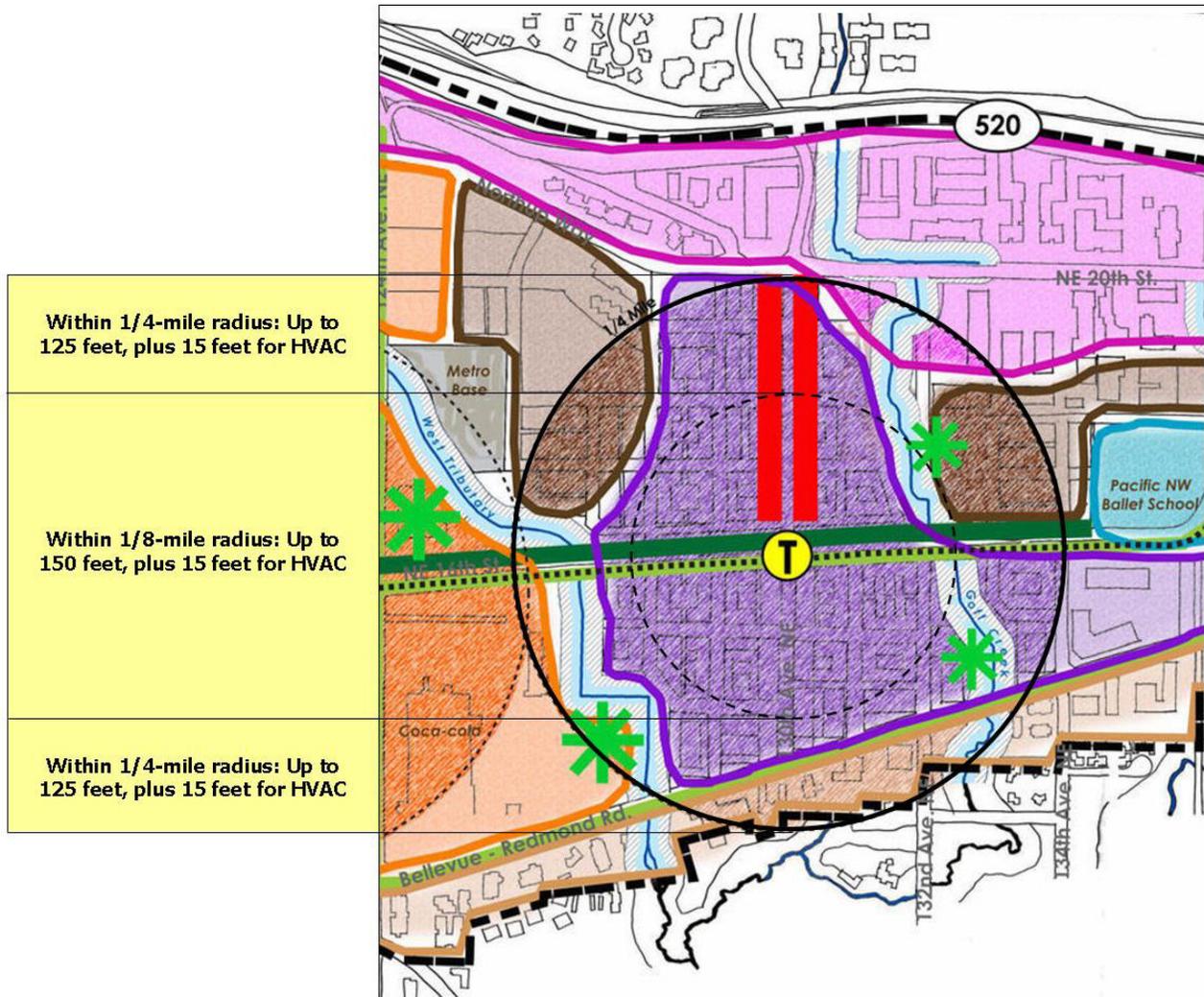
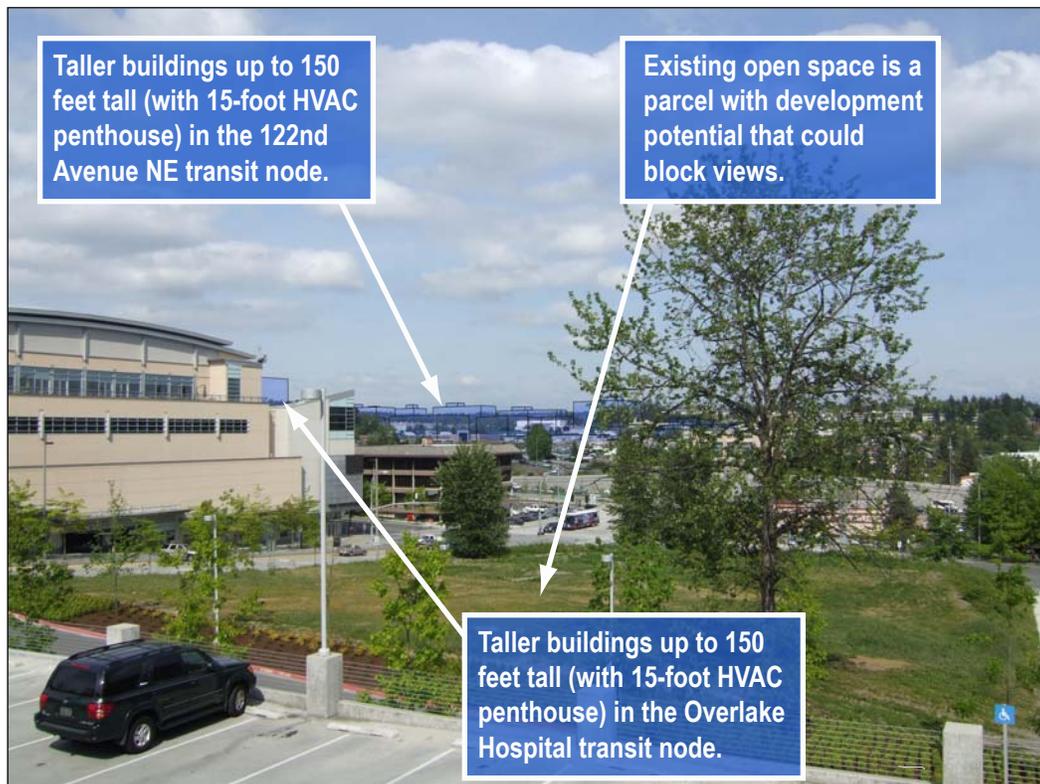


FIGURE C-2
Building Height Assumptions

Existing Conditions



Massing Model



Location 1:
Looking east from City Hall plaza
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model

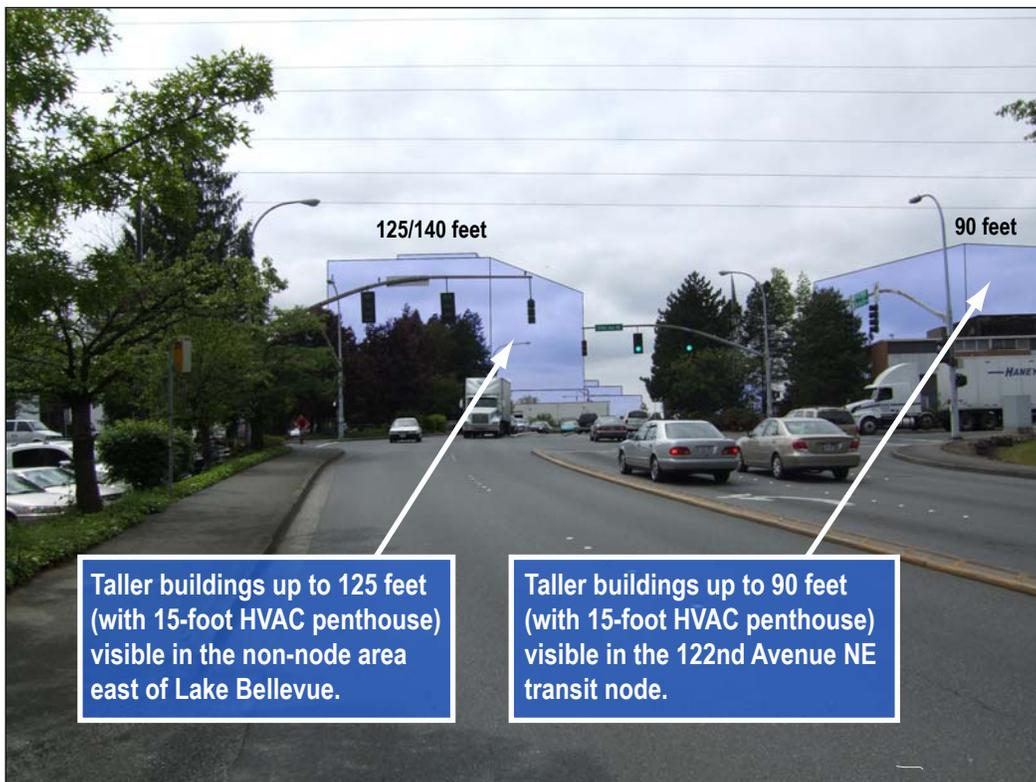


Location 2:
Looking north on 124th Avenue NE
at NE 7th Place
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Location 3:
Looking west on Bel-Red Road
east of 124th Avenue NE
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Location 4:
Looking northwest on Bel-Red Road
east of 124th Avenue NE
Bel-Red Corridor Final EIS

Existing Conditions (telephoto view)



Massing Model (telephoto view)



Location 5:
Looking west from 148th Avenue NE
at SR 520
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Location 6:
Looking south from SR 520 Trail
at NE 24th Street
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model

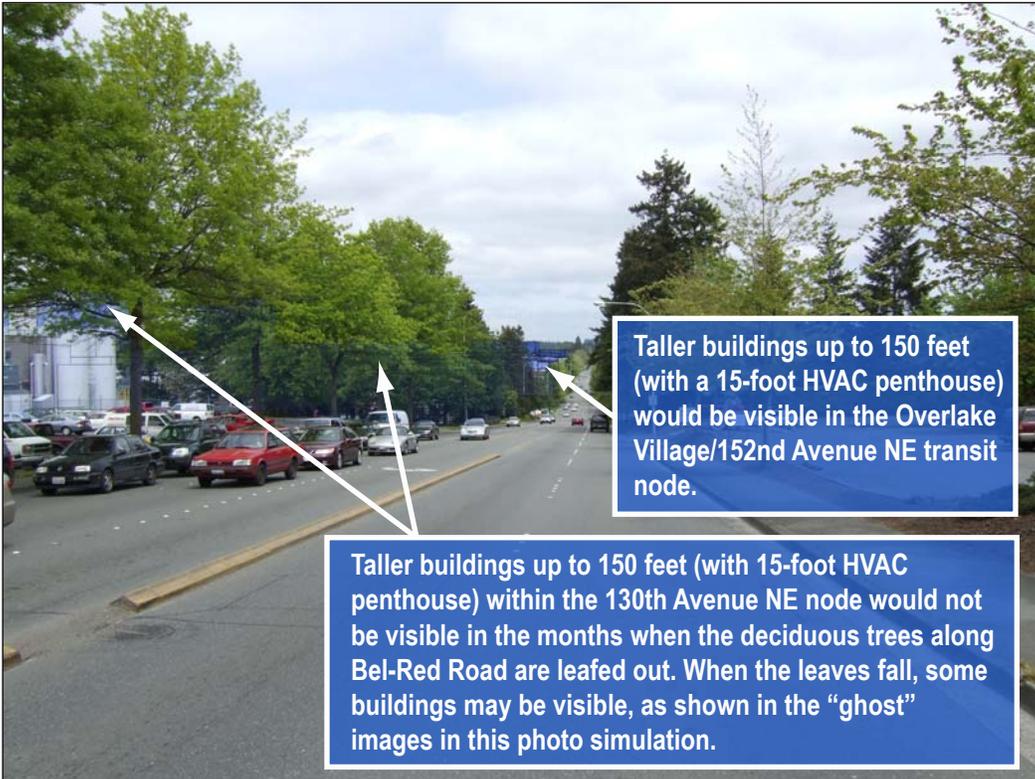


Location 7:
Looking southeast from SR 520 Trail
at NE 24th Street
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model

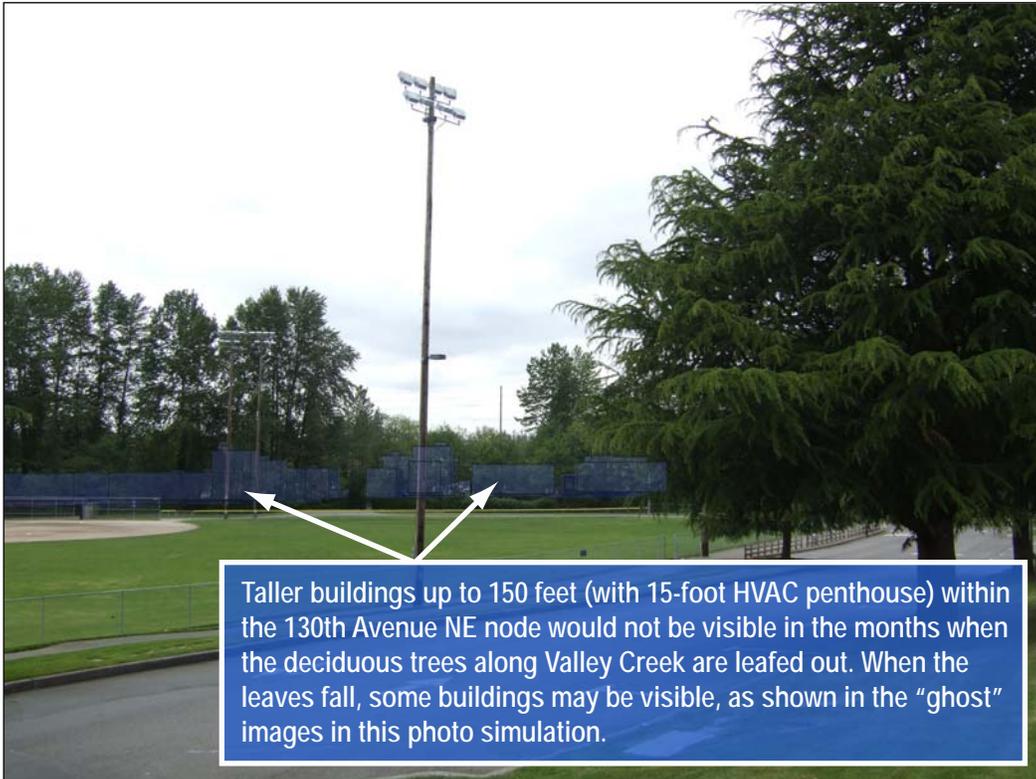


Location 8:
Looking northeast from Bel-Red Road
east of 124th Avenue NE
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Taller buildings up to 150 feet (with 15-foot HVAC penthouse) within the 130th Avenue NE node would not be visible in the months when the deciduous trees along Valley Creek are leafed out. When the leaves fall, some buildings may be visible, as shown in the "ghost" images in this photo simulation.

Location 9:
Looking west from Highland Park
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Location 10:
Looking southeast from ViewPoint Park
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



135-foot-tall buildings in Redmond's Overlake Village.

150/165-foot-tall buildings on Angelo's Nursery site in Bellevue.

Location 11:
Looking northeast from Bel-Red Road
at 148th Avenue NE
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model

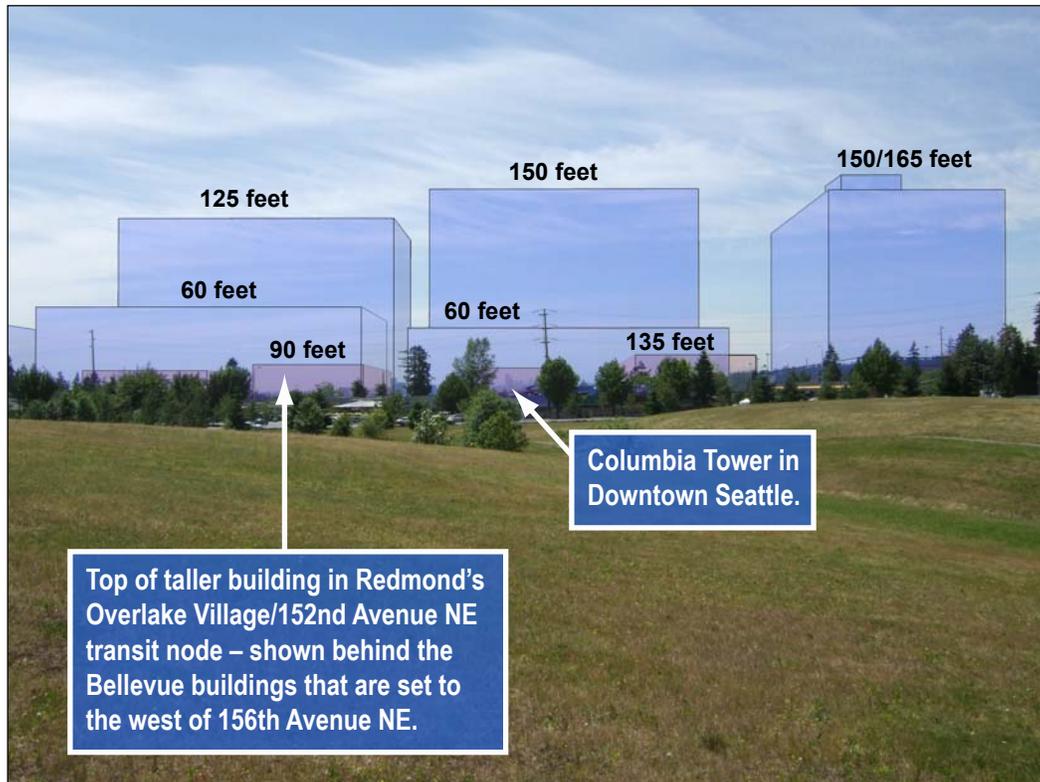


Location 12:
Looking north on 156th Avenue NE
at 15th Street
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model

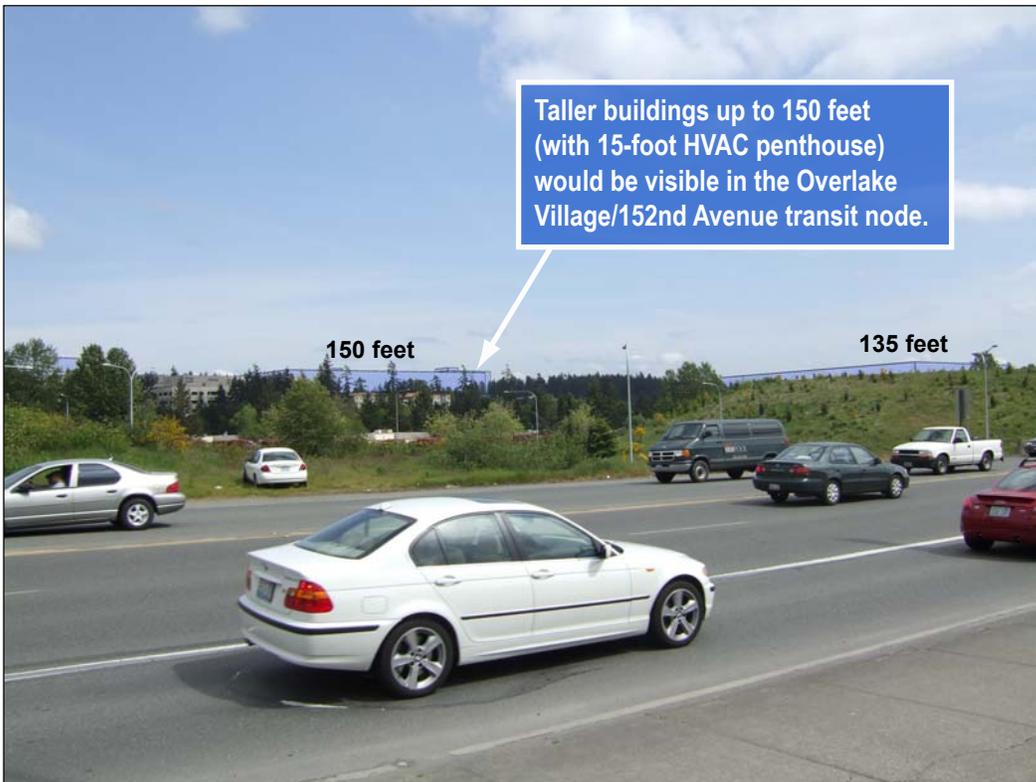


Location 13:
Looking west from Uniguard Park
Bel-Red Corridor Final EIS

Existing Conditions



Massing Model



Location 14:
Looking southeast from 148th Avenue NE
just north of SR 520
Bel-Red Corridor Final EIS

Summary of View/Visual Analysis

Overlake Hospital Medical Center Transit Node

Public Vantage Point Location 1:

- Bellevue City Hall Plaza

View Analysis Summary: Taller buildings would be partially obscured by existing buildings, Meydenbauer Center, and the Group Health Hospital. The currently undeveloped parcel east of City Hall plaza has development potential for a structure that could result in views to the east being obscured.

East of 120th Avenue NE and Lake Bellevue – to the South of 122nd Avenue NE Transit Node

Public Vantage Point Location 3:

- Looking West on Bel-Red Road just East of 124th Avenue NE

View Analysis Summary: Taller building(s) would be visible from the vicinity of the site, but would not block significant views from public vantage points.

122nd Avenue NE Transit Node

Public Vantage Point Locations 1, 2, 4, 5, and 6

- Looking east from Bellevue City Hall
- Looking north on 124th Avenue NE at NE 7th Place
- Looking northwest on Bel-Red Road just east of 124th Avenue NE
- Looking west from 148th Avenue NE at SR 520
- Looking south from the western terminus of the SR 520 Trail at NE 24th Street

View Analysis Summary: Taller buildings on this ridgetop location would be prominently visible from several public vantage points. From City Hall and the western terminus of the SR 520 Trail at NE 24th Street, these buildings would intersect the distant ridge lines but would not block significant views, such as of Mount Rainier. Closer to the transit node, at the public vantage points on Bel-Red Road and on 124th Avenue NE, the buildings would be prominent but would not block significant views.

130th Avenue NE Transit Node

Public Vantage Point Locations 1, 7, 8 and 9:

- Looking east from Bellevue City Hall
- Looking southeast from the western terminus of the SR 520 Trail at NE 24th Street
- Looking northeast from Bel-Red Road east of 124th Avenue NE
- Looking west from Highland Park

View Analysis Summary: Taller buildings within this transit node would be visible from the vicinity of the transit node and would be most prominently visible from the public vantage point at the western terminus of the SR 520 Trail at NE 24th Street. These buildings would not obstruct significant views.

Overlake Village/152nd Avenue NE Transit Node

Public Vantage Point Locations 11, 13, and 14:

- Looking northeast from Bel-Red Road at 148th Avenue NE
- Looking west from Uniguard Park
- Looking southeast from 148th Avenue NE just north of SR 520

View Analysis Summary: Taller buildings as viewed from Unigard Park would be prominent and would block views of the distant Seattle skyline and the Olympic Mountains. As mentioned earlier, for purposes of this analysis, 150-foot-tall buildings were simulated, and it is clear that any new building over 2 to 3 stories (approximately 30 to 40 feet tall) would block these views. Potential buildings currently being analyzed in Redmond could also block these views from this location. From the other vantage points listed above, the buildings in Bellevue and Redmond would not be prominent and would not block views.

Urban Form/Community Character

The height, design, materials, and location of buildings contribute to the quality of the urban environment. That quality can be degraded by buildings that are of inappropriate scale and insensitive design. Existing buildings in the Bel-Red Corridor are predominantly one or two stories in height, and many have large floor plates and blank concrete walls. New buildings might be taller and architecturally distinct and will therefore change the character of the area – both as viewed from the public spaces on the perimeter of the study area, or as experienced from the sidewalks, parks, and plazas within new mixed-use neighborhoods.

New buildings will be inserted into the existing built environment of warehouses and small commercial spaces as well as the natural environment of small streams, low hills, and tall evergreen trees in surrounding neighborhoods. Nearby, on the 116th Avenue NE corridor and in Downtown Bellevue, taller buildings currently dominate the skyline.

To contribute positively to the character of the neighborhood and the overall community, the design of taller buildings should relate well to other buildings, streets, and public and private open spaces. Building architecture and materials should be given detailed consideration with respect to massing, proportion and silhouette, fenestration, and façade materials (see Urban Design Policies UD-3 and UD-6 below). The design of the top of a building, and variability in the height of several buildings, will be of particular importance to create a positive effect on the skyline. Urban Design Policies UD 1, 2, and 8 provide guidance in this area.

The human scale of a tall building is of at least as much importance as its effect on the skyline. Buildings should be sensitive to the environment at the street level and be designed to encourage use of the street by pedestrians and avoid a canyon effect. This can be accomplished in a number of ways:

- Stepping back or setting back the upper stories of buildings to allow light and air to reach the street. A two- or three-story podium at the base of a tower can help retain a human scale at the street frontage and prevent the tower from overpowering its immediate environment (Policy UD-30).
- Treating the ground level of buildings with the pedestrian in mind is crucial and should incorporate multiple entrances and special details, materials, finishes, signage, or display windows (Policy UD-2).

- Paying attention to the potential effect of building shadows on sidewalks and plazas (Policies UD-10, UD-32).

More discussion of incorporating urban form and community character features is provided in the Differentiated Economic Niche/Downtown Competition section below.

Locations of Taller Buildings

The arrangement of taller buildings can become a very prominent part of a community's identity. Some urban critics assert that where taller buildings occur, they should be limited to iconic structures or public buildings, such as cathedrals, iconic towers, or major public buildings. This logic has been used to prohibit higher building forms in large portions of some cities (e.g., Washington, D.C., and Paris).

Others assert that if taller commercial and residential buildings are placed in the right locations, these buildings can provide a sense that a community has well-defined and carefully planned centers of development. By contrast, an urban form of high-rise buildings distributed across the landscape with no strong sense of focus can give the impression of unplanned and haphazard growth. Because they are visible from a distance, taller buildings can strongly affect community character and identity, for better or worse.

Clustering taller buildings in development nodes, as is assumed for Bel-Red Corridor study purposes (see Figure C-3), can provide a visual reference to reinforce the hierarchy of urban form. These buildings can mark the location of an urban plaza, an area of interest and vitality, or a light-rail transit station. The character of this development pattern is typical of that which develops along light-rail transit corridors where transit-oriented development is implemented in the vicinity of stations. A good example of this development pattern exists in suburban Washington, D.C., in the Rosslyn-Ballston corridor (see Figure C-4). Clusters of taller buildings are developed around stations of the Washington, D.C., Metro Orange Line light rail corridor.



FIGURE C-3
Bel-Red Corridor Nodal Development (with building heights up to 150 feet)



FIGURE C-4
Rosslyn- Ballston Corridor, Washington, D.C.

Differentiated Economic Niche/Downtown Competition

One of the principles endorsed by the Bellevue City Council at the beginning of this planning project was that any planned Bel-Red redevelopment should complement, rather than compete with, Downtown Bellevue and other areas of the city. The adopted Bel-Red Corridor Planning Principle 3 is as follows: “Differentiated Economic Niche: Bel-Red should provide for future growth of jobs and firms that have significant potential for expansion, and which are not well accommodated in other parts of the city.”

One aspect of a differentiated economic niche in the Bel-Red Corridor is an assessment of how building heights of up to 150 feet in transit nodes might place new development in direct competition with Downtown Bellevue or other parts of the city. The primary benefits of additional building height include capitalizing on view potential and the ability to provide more outdoor open space with the same development program. An important aspect of competition to be discussed along with building height is the allowable floor-area-ratios (FAR) for new development.

Based on a comparison of allowable building heights and FARs, existing amenities, existing road network, current urban fabric, and existing road network and transit options, it appears that allowing building heights up to 150 feet in Bel-Red transit nodes would provide for some overlap in competition with Downtown Bellevue. But for the most part, the Bel-Red Corridor would fill a unique economic niche both now and into the future.

Comparison to Downtown Bellevue

The primary growth areas in Downtown Bellevue are the DT-O-1, DT-O-2, and DT-MU zoning districts. They collectively make up 70 percent of the downtown land area and are where a majority of the new downtown office, housing, and retail growth will occur through 2030. The DT-O-1 district allows maximum building heights up to 300 feet for office and 450 feet for residential; maximum FAR is 8.0 for office and unlimited for residential. The DT-O-2 district allows up to 250 feet for both office and residential; maximum FAR is 6.0 for office and residential. The DT-MU

district allows up to 100 feet for office and 200 feet for residential; maximum FAR is 3.0 for office and 5.0 for residential. The contemplated Bel-Red Corridor building heights of up to 150 feet in transit nodes are well below the DT-O-1 and DT-O-2 districts, but do have some overlap with the DT-MU district. The allowable FARs in these downtown districts are all higher than the likely allowable FARs of up to 2.5 in the Bel-Red Corridor transit nodes.

From a competitive standpoint, the Bel-Red Corridor seems to present a different niche than Downtown Bellevue, even with buildings up to 150 feet in transit nodes. The major differences between the areas are mostly due to higher allowable FARs in Downtown Bellevue. Bel-Red Corridor development within nodes will be more intense than Bel-Red development outside nodes, but overall development will still be less intense than much of Downtown Bellevue. In the Bel-Red Corridor, buildings will likely be more spread out, with integrated open space and stream corridor enhancements creating a less intense feel to the area as compared to Downtown Bellevue. If buildings up to 150 feet were developed in the Bel-Red Corridor at 2.5 FAR, the general massing of the area (building density, look, and feel) would feel much less than Downtown Bellevue due to the lower FARs (up to 8.0 FAR in Downtown). Secondary issues that will evolve over time in both areas include the range of existing amenities, defined urban fabric, and, at least in the short-term, Downtown Bellevue's more fully developed road network and transit options.

Comparison to Other Parts of the City of Bellevue

Comparison of building heights up to 150 feet in the Bel-Red Corridor nodes can be made with other parts of Bellevue beyond downtown. The Factoria commercial area is a unique part of the city because of the F1, F2, and F3 zoning that was a part of the annexation to Bellevue from King County in 1993. These areas allow building heights up to 60 feet, 75 feet, and 135 feet, respectively. Development intensity is generally limited to 1.26 FAR. The Factoria commercial area has a well-developed range of amenities and good freeway access, but currently lacks the light-rail transit service that is planned for the Bel-Red Corridor.

The OLB-OS area of Bellevue (Boeing Eastgate) provides for building heights up to 85 feet. The recently developed Schnitzer Northwest project maximizes the allowable building heights and includes 600,000 square feet of office in a campus-like setting. The overall FAR is roughly 0.5 because of a significant open space dedication that was part of the *Comprehensive Plan* amendment/rezone process for the area in 2003.

Other parts of Bellevue that are zoned General Commercial (such as Wilburton/NE 8th), Community Business (such as Crossroads), and Office Limited Business (such as the I-405 Corridor) allow heights up to 45 feet, 60 feet, and 75 feet, respectively. The general upper limit of development intensity in these areas is 0.5 FAR. The allowable buildings heights are well below the 150 feet being analyzed in the Bel-Red Corridor transit nodes, and the allowable FAR of 0.5 is well below the likely upper end of nodal development in Bel-Red.

The currently delineated Medical Institution District (home to the Overlake Hospital Medical Center campus on the west side of 116th Avenue NE between NE 8th and NE 12th Streets) allows heights up to 200 feet for hospital buildings, 100 feet for ambulatory care centers, and 140 feet for medical office buildings. This district is adjacent to the Bel-Red Corridor planning area but has a very specialized location and development program that does not lend itself well to direct comparison to the Bel-Red Corridor economic niche. Height analysis was done for the Medical Institu-

tion District as part of the 2005 *Overlake Hospital Medical Center EIS*, and is hereby adopted by reference.

Relationship to Implementation Strategy

As the potential for building heights up to 150 feet are analyzed in Bel-Red Corridor transit nodes, one factor to be considered is how this may fit in with the overall implementation strategy for delivering on the preferred Bel-Red Corridor project vision. The Steering Committee has discussed the extensive infrastructure and urban amenities that will be needed to realize the vision of a redeveloped Bel-Red area. It is anticipated that all development will contribute to this package of improvements, through mechanisms to be developed by the Bellevue Planning Commission and City Council as part of the implementation strategy.

Often the allowance for additional height is handled as a land use incentive and is granted in exchange for providing a higher level of public benefit than would otherwise be required for new development. For example, Downtown Bellevue has had an “Amenity Incentive System” in place for many years; only by contributing to certain public amenities can a development meet its full FAR and height potential. If additional height is determined to be appropriate in the Bel-Red Corridor based on the analysis above, the market incentive approach is one strategy that should be considered in exchange for the increased height allowance.

Excerpts from Bellevue Comprehensive Plan

Urban Design Element

The Bellevue *Comprehensive Plan* provides guidance in considering the effect of buildings on the environment. Particularly applicable to the consideration of taller buildings in the Bel-Red Corridor are the following policies from the Urban Design Element:

Policy UD-1

Encourage high quality, attractive, architecturally appealing designs for major buildings in order to create distinctive visual reference points in the community.

Policy UD-2

Support designs for the built environment that are visually stimulating and thoughtful and which convey excellence in architecture and workmanship, and durability in building materials.

Policy UD-3

Encourage a variety of site and building designs which are compatible and consistent with surrounding development and that implement the policies of this Plan.

Policy UD-6

Design buildings located on the edge of public places using materials, forms, details and other architectural elements that will enrich the appearance of the places and encourage people to use them.

Discussion

The quality of the surrounding buildings, sidewalks, and vegetation is as important as the internal space of public places. This involves a consideration of appropriate use, building bulk and character, lighting, planting, signs, and other elements which compose the built environment. Building design should avoid stark spaces, allow eye contact between people inside and outside buildings, and have attractive display windows.

Policy UD-8

Design rooftop mechanical screening so that it is integral with building architecture. Consider the visual effects of technical advances such as satellite dishes, on building design.

Policy UD-10

Encourage public and private development to incorporate access to sunlight.

Policy UD-23

Preserve and enhance views of water, mountains, skylines, or other unique landmarks from public places as valuable civic assets.

Policy UD-30

Ensure public places give access to sunlight, a sense of security, seating, landscaping, accessibility, and connections to surrounding uses and activities.

Discussion

Much like public living rooms, public spaces deserve special attention with respect to materials, furnishings, art, lighting, floor covering, and color.

Policy UD-32

Ensure access to sunlight in public places by avoiding building shadows during periods of the year and times of the day when outdoor activity is most prevalent.

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