

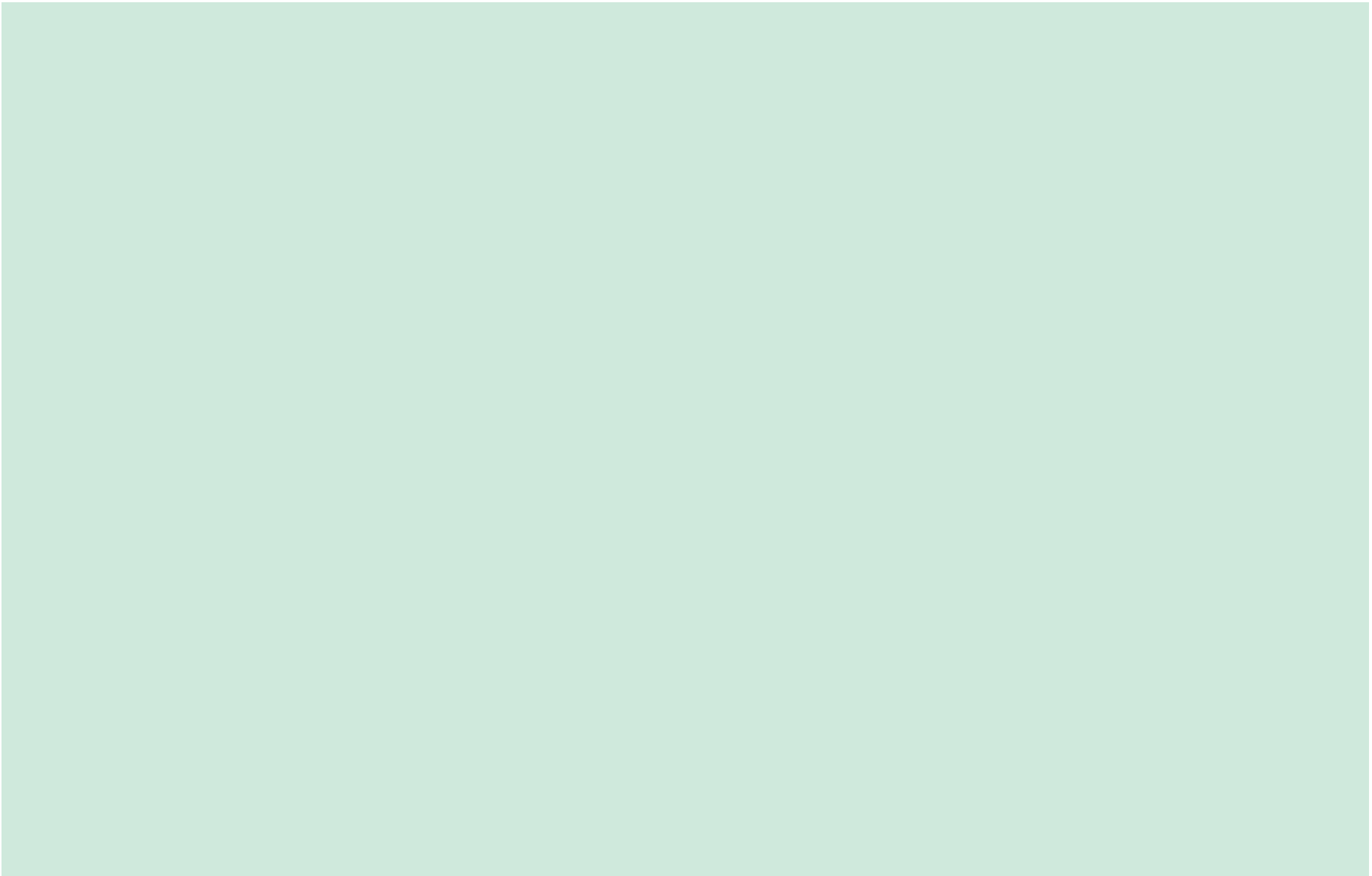
Housing & Climate Justice in Bellevue, WA:

Affordable, accessible, and fair housing aligned with King County's Climate Action Goals

Urban Design Senior Project 2023

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University of Washington Tacoma
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Site information

Address: Bellevue, Wilburton

Location: The site plan is located in Wilburton neighborhood in Bellevue. Interstate 405 is on its West, NE 12th St is on its North, Lake Hills Connector is on its South, and Wilburton Hill Park is on its East.

Additional Information: Light rail passes through the site and Grand Connection connects the Bellevue downtown to Wilburton. Bellevue Lake in the North part of the site is shared among private properties. Eastrail also passes through the site from its northend all the way to its southend.

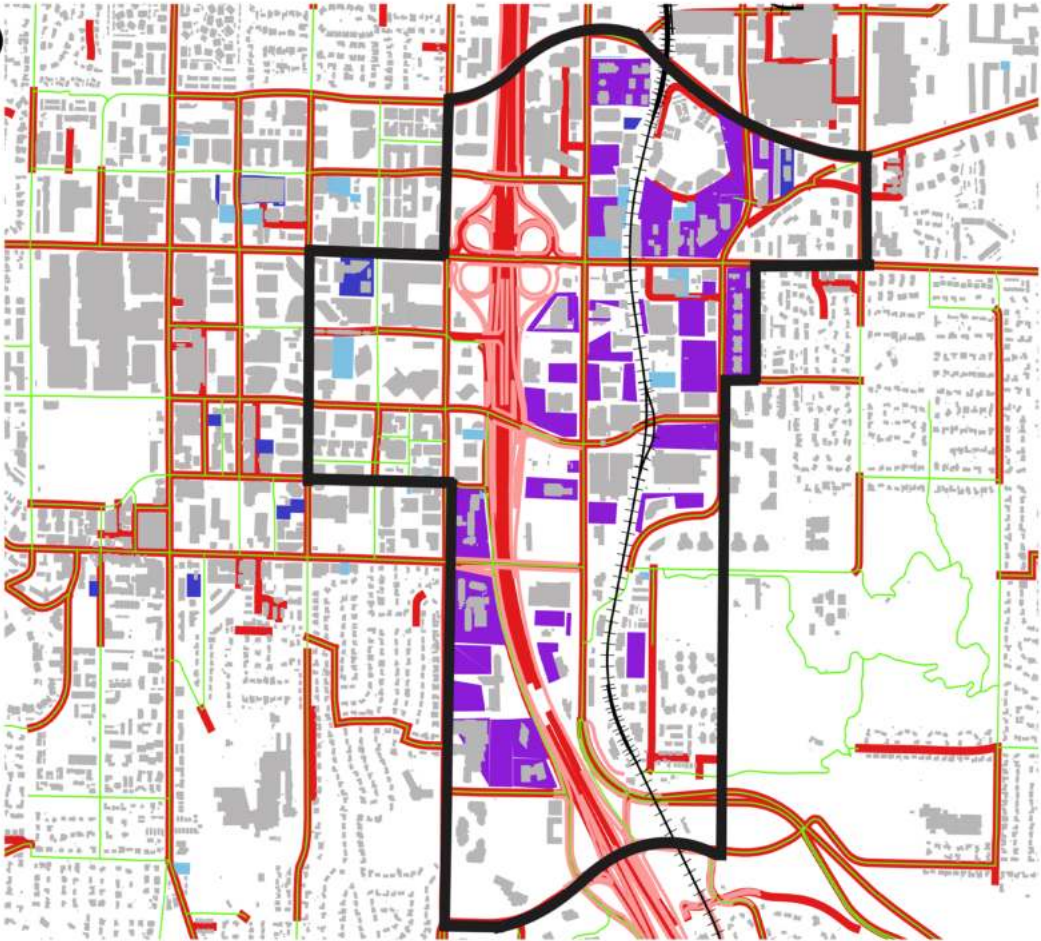
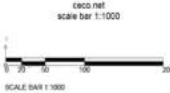
Figure 1: Wilburton Study Area **Source:** Q-GIS & Google Satellite

Parking Map



Legend

- Site Plan Boundaries
- Building
- +— Railroad
- PedNetwork
- Highway
- parking Assoc
- parking garage
- parking commercial lot
- Main Routes



- Google Satellite
- EVACUATION
- ★ Stations
- Green Space
- Floodplain
- Five-minute
- Highway
- Railroad
- Construction
- Schools
- finalclip01
- Site Plan
- Building
- Five minute
- Eastrail
- Google Satellite



Figure 3: Regional Analysis (parking map) Source: Q-GIS & Google Satelite

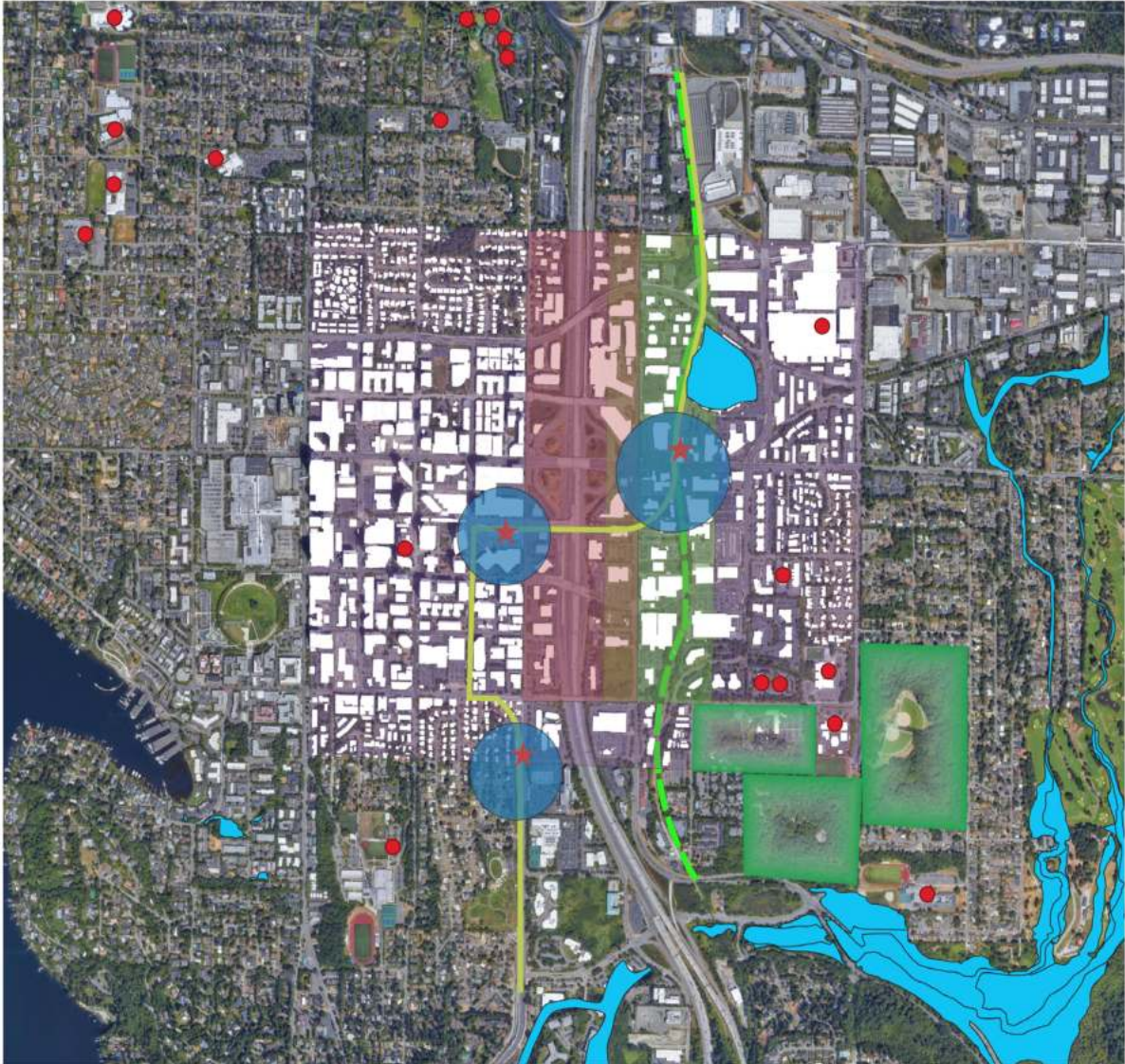


Figure 2: Regional Analysis (high impacted area) **Source:** Q-GIS & Google Satellite

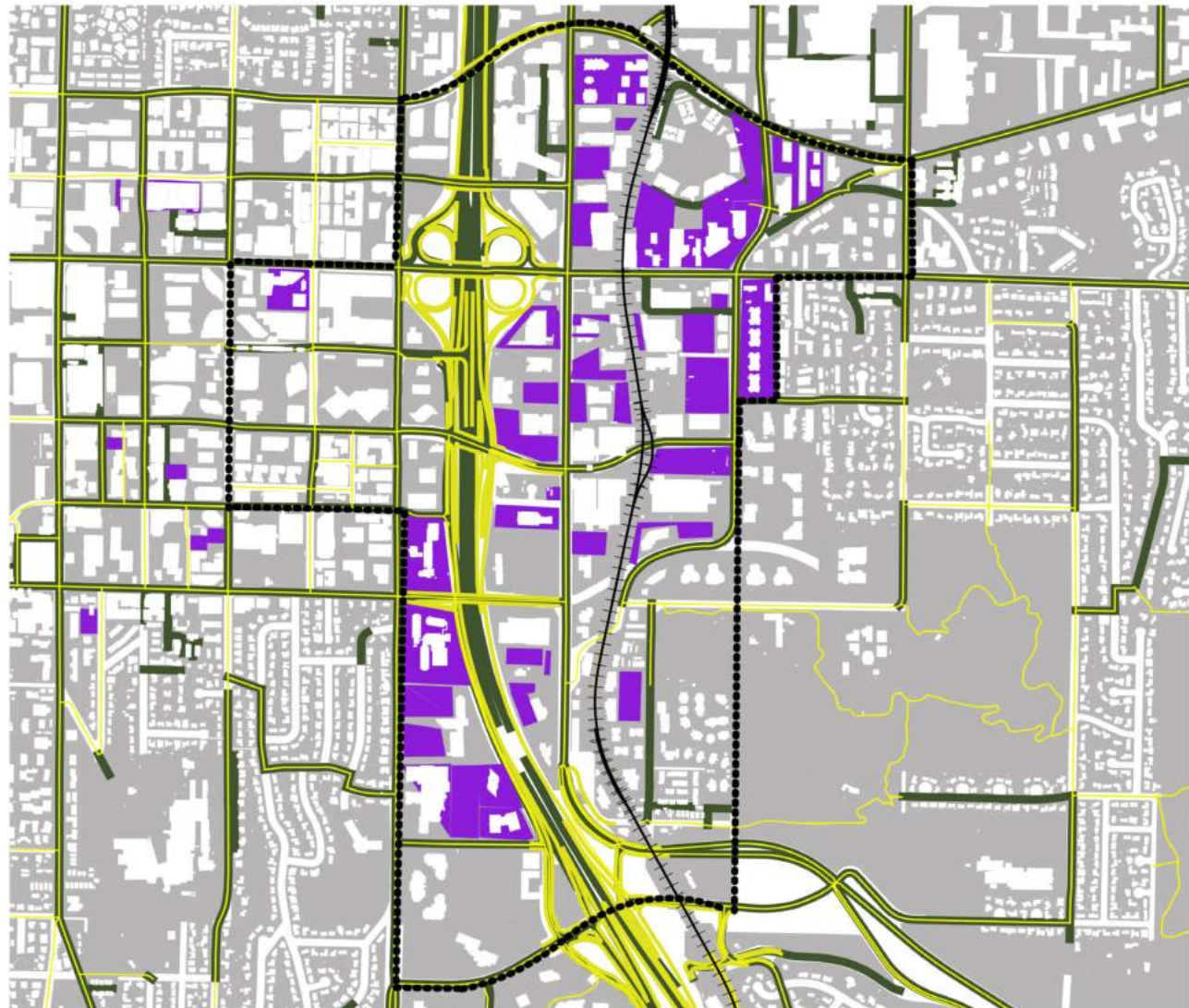
Regional analyses

Findings:
 Regional analysis map shows the 600 feet buffer zone around Interstate 405 that needs to be avoided constructing any affordable housing. It also shows a five-minute pedestrian shed around Light rail stations. There is also a five-minute buffer around East rail to walk. Floodplain areas around the Bellevue Lake and creeks can also be noticed in the map which need to be avoided in the construction.

Parking Commercial Lots



- Site Plan Boundries
- Building
- ⊢⊢ Railroad
- PedNetwork
- Highway
- parking commercial lot
- Main Routes
- Bellevue parcels



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Figure 5: Regional Analysis (parking Commercial Lots) Source: Q-GIS

Parking Garage



Plan Boundaries
Building
Freeway
Road Network
Highway
Parking garage
Main Routes
Elevated parcels

250 500

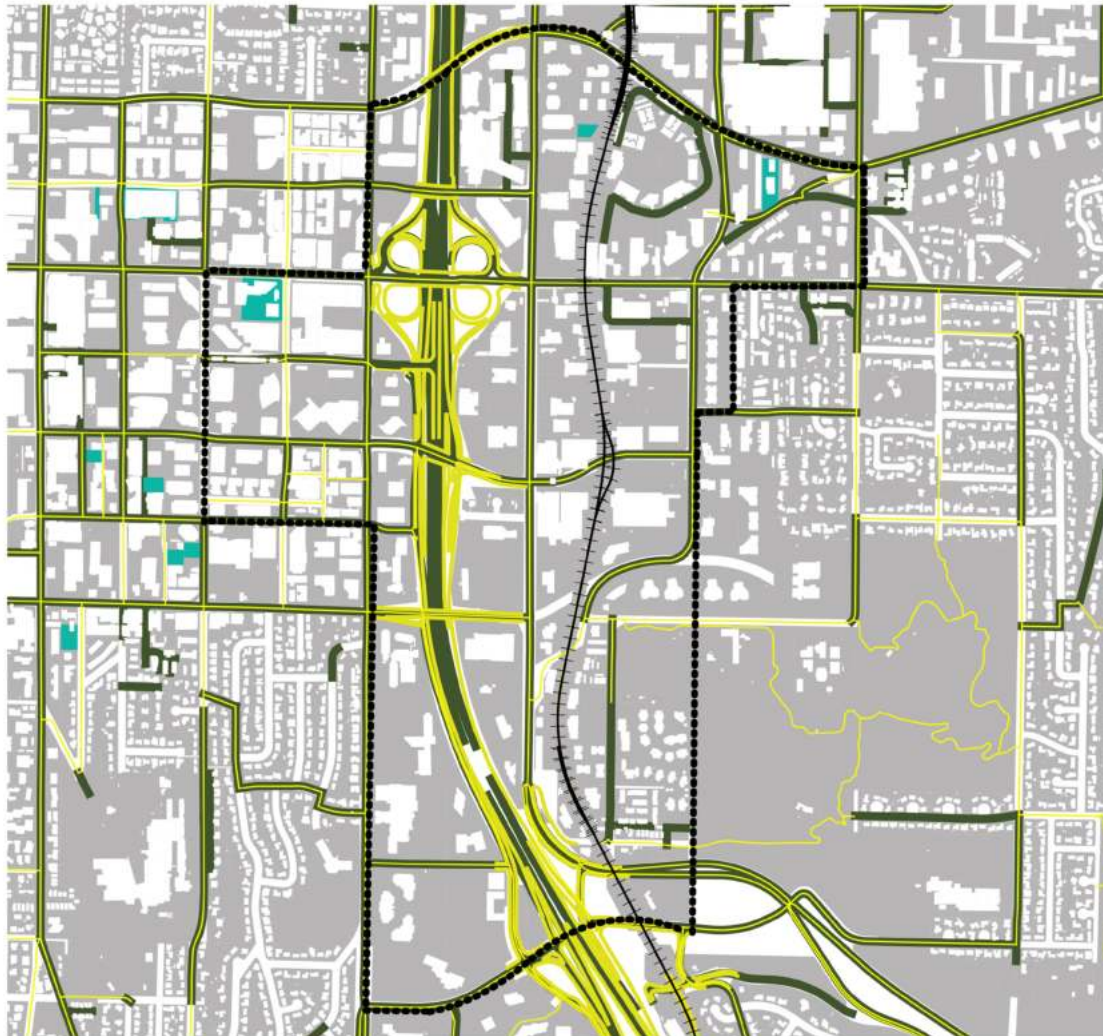


Figure 4: Regional Analysis (parking garage) Source: Q-GIS

Regional analyses

Findings:

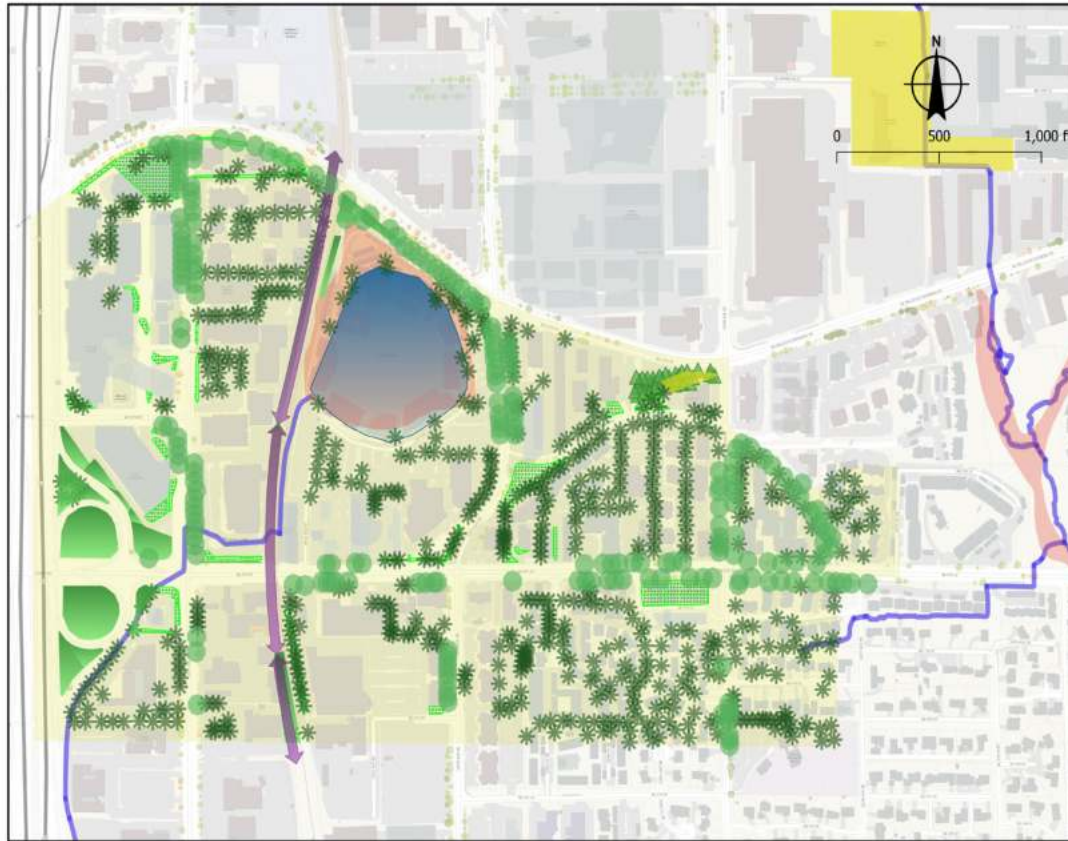
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Figure 7: Site Analysis (community service) **Source:** Q-GIS

Environment & Ecology

- Street Trees
- ◆ Eastrail
- Open Green Space
- * Trees&Bushes Easements
- Green Space Easements
- ParkSite
- ▲ Tree Canopy
- Lake
- Floodplain
- Streams & Creeks
- Building
- Study Area

Source: Esri Topographic



Findings:

There are various trees on the site. In addition, the green spaces along the streets and between the buildings have put this area in good condition in terms of green coverage. Although the lack of park space and large public green spaces is felt in this area.

Opportunities:

Redesign and develop Bel-Red Mini Park to get more clean fresh air. Develop open green spaces and park at the South of Bellevue Lake.

Site analyses

Findings:

The North of Wilburton is well developed with different type of buildings and community services and they are accessible for disabled. There are various trees on the site. In addition, the green spaces along the streets and between the buildings have put this area in good condition in terms of green coverage. Although the lack of park space and large is felt in this area.

Opportunities:

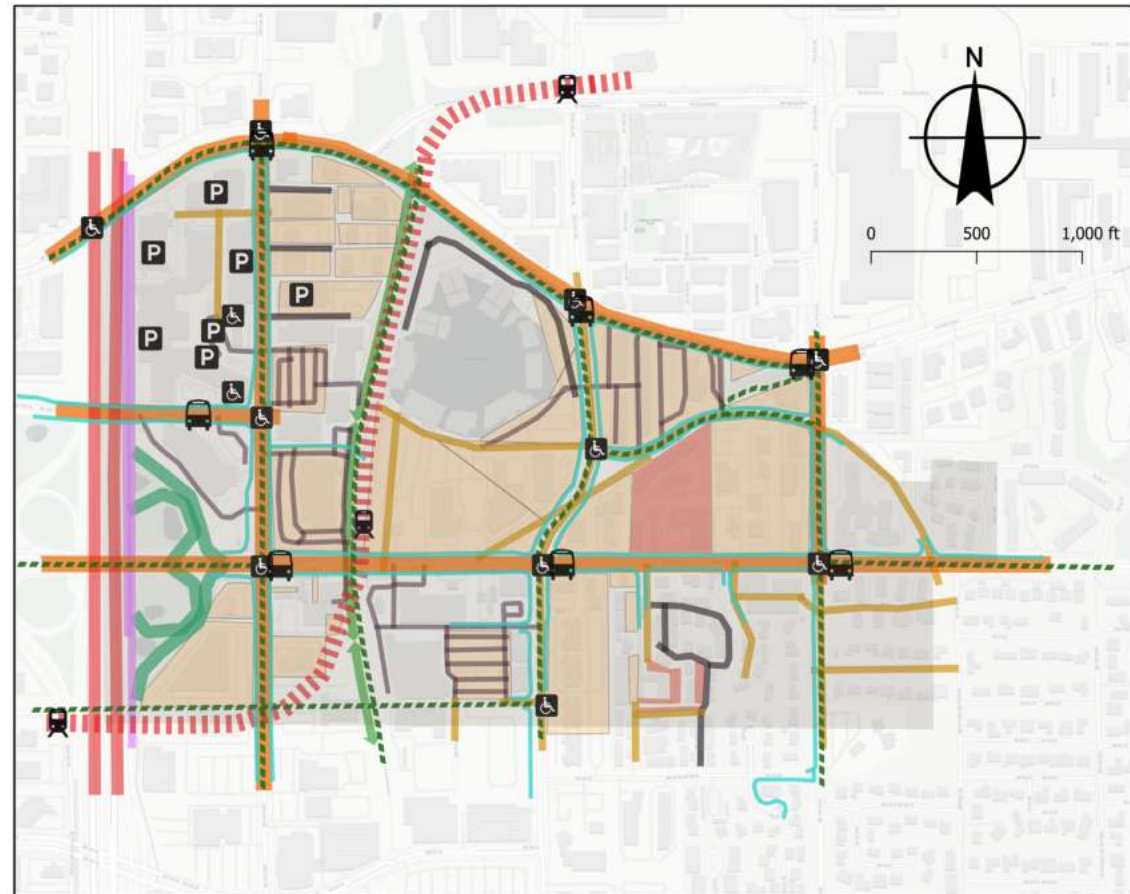
Redesign and develop Bel-Red Mini Park to get more clean fresh air. Develop open green spaces and park at the South of Bellevue Lake.

With a high range of community services for different need and uses the area is opportunity to develop affordable housing.

Figure 6: Site Analysis (environment and ecology) **Source:** Q-GIS

Transportation

- Study Area
 - P Parking Garage
 - Bus Stop
 - ADA Accessibility
 - Light Rail Stations
 - Bike Lane
 - Sidewalks (Pedestrian Network)
 - Light Rail
 - Highways
 - Main Streets-30mph
 - Frontage Road
 - Collector Road
 - Feeder Lane
 - Local Road
 - Cloverleaf Interchange
 - Commercial Parking Lots
 - Residential Parking
 - ↔ Eastrail
- Source: Carto Light



Findings:

There are multiple transportation options available within the study area, such as bus and light rail. Wilburton Station is located 1 mile away from Bellevue Downtown Station. Bike lanes that cross the 120th and 124th Ave NE are not wide and safe enough.

Opportunities:

redesign an area across the East Rail for developing pedestrian zones and bike lanes. Multiple transportation options within the site encourage people to walk.

Figure 9: Site Analysis (Transportation) **Source:** Q-GIS

Land Use & Policy

- Building
- Medical Institution (IG)
- Residential (MF)
- General Commercial (C)
- Office&Limited Business(O)
- Multifamily Medium Density (MF)
- Neighborhood Mixed Use
- Grand Connection
- Multifamily High Density
- Multifamily Low Density
- Single Family Medium Density

Source: Carto Light



Findings:
Commercial and medical land uses occupied the largest area of land in this area. There are different types of houses used for residential purposes.

Opportunities:
There is a great opportunity for affordable housing development in the northeast part of Lake Bellevue. North Wilburton is a good place to build mixed-use buildings because it has a wide range of commercial and medical land uses.

Site analyses

Findings:

Commercial and medical land uses occupied largest area of land in this area. There are different types of houses used for residential purposes. There are multiple transportation options available within the study area, such as bus and light rail. Wilburton Station is located one mile away from Bellevue downtown station. Bike lanes that cross the 120th and 12th Ave NE are not wide and safe enough.

Opportunities:

There is a great opportunity for affordable housing in the northeast part of Bellevue Lake. North Wilburton is a good place to build mixed-use buildings because it has a wide range of commercial and medical land uses

Redesigning area across the Eastrail for developing pedestrian zones and bike lanes. Multiple transportation

options within the site encourage people to walk.

Figure 8: Site Analysis (Transportation) Source: Q-GIS



Figure 10: Urban Form **Source:** Q-GIS



Site analyses

Urban Form

Findings:

There are several kinds of nodes across the study area. Nodes number one, two and three are located across the commercial and health care zones, and pedestrian priority crosses them. Nodes numbers four and five are connected by 120th and NE 12th St.

Opportunities: Redesigning nodes and sidewalks on moderate and light traffic streets to attract and encourage people to walk. The development opportunities around nodes number four and five by connecting them with a green corridor from Bel-Red Mini park.

Urban Form Analysis (Existing Condition)

Legend

-  Bus Stops
 -  Nodes
 -  Light Rail Station
 -  Light Rail
 -  Bike Lane
 -  Sidewalks (Pedestrian Network)
 -  Highways
 -  High Traffic
 -  Moderate Traffic
 -  Low Traffic
 -  Medical Institution (IG)
 -  Residential (MF)
 -  General Commercial (C)
 -  Office&Limited Business(O)
 -  Multifamily Medium Density (MF)
 -  Single Family Medium Density
 -  Neighborhood Mixed Use
 -  Multifamily High Density
 -  Lake
 -  Multifamily Low Density
 -  Floodplain
 -  Park & Green Space
 -  Creek
 -  Landmark
 -  Active Edges
 -  Eastrail
 -  Proposed Affordable Housing Location
- Source: Carto Light

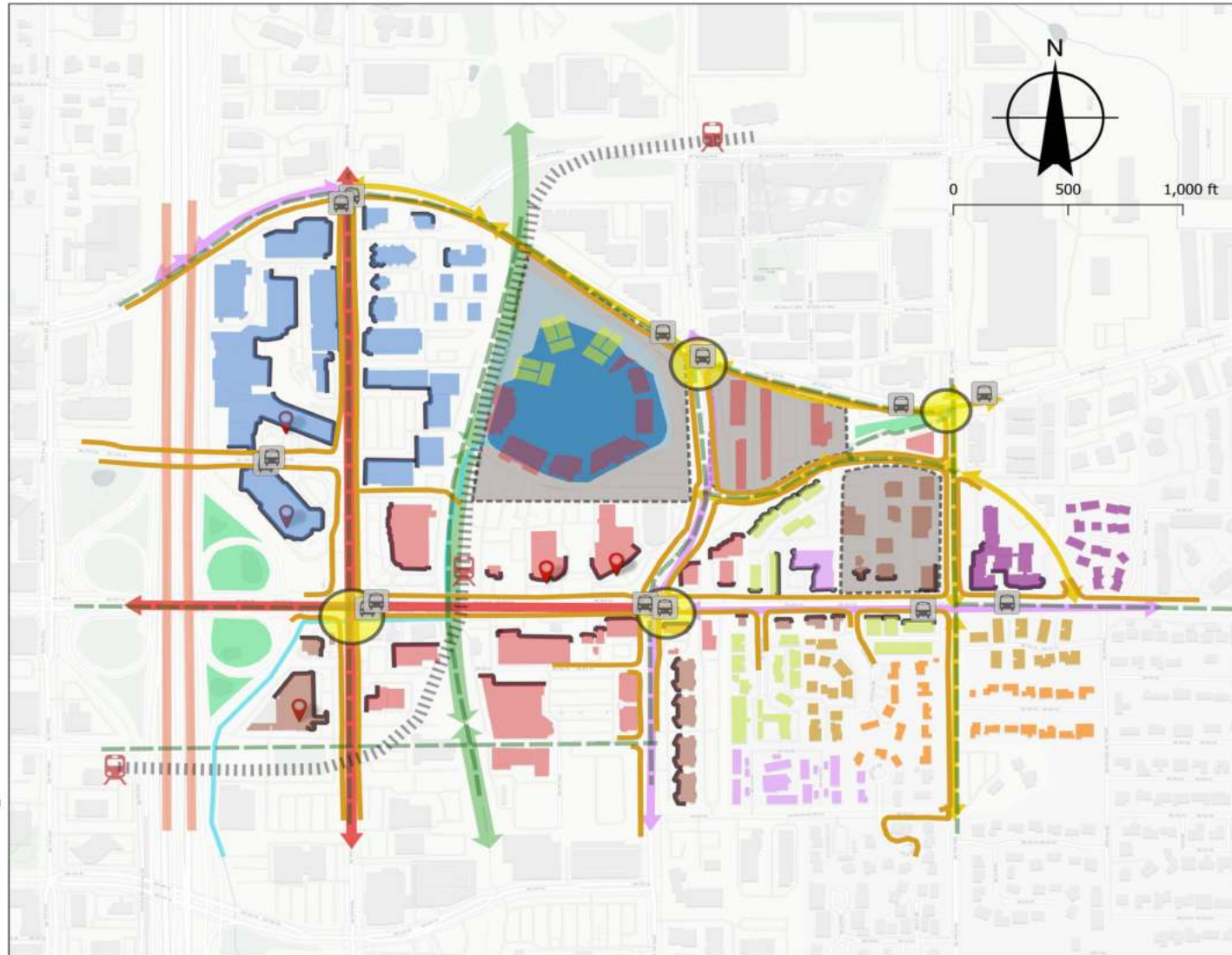


Figure 12: Urban Form Analysis (existing condition) Source: Q-GIS



Figure 11: Green Trail in Taiwan **Source:** <https://www.youfab.info/2020/winners/s-o-s-solution-of-school-urban-plug-in>

Urban design approach

Urban form analysis: Urban form analysis shows the existing condition of the site plan. The map includes different layers from road hierarchy to land-uses, active edges, nodes, transportation and floodplain.

Additional Information:

Urban form analysis map proposes different locations for affordable housing. These locations are proposed based on Wilburton Draft Land Use Concepts for EIS for 12000 or more housing units.

Urban Form Analysis (Existing Condition)

Legend

-  Bus Stops
 -  Nodes
 -  Light Rail Station
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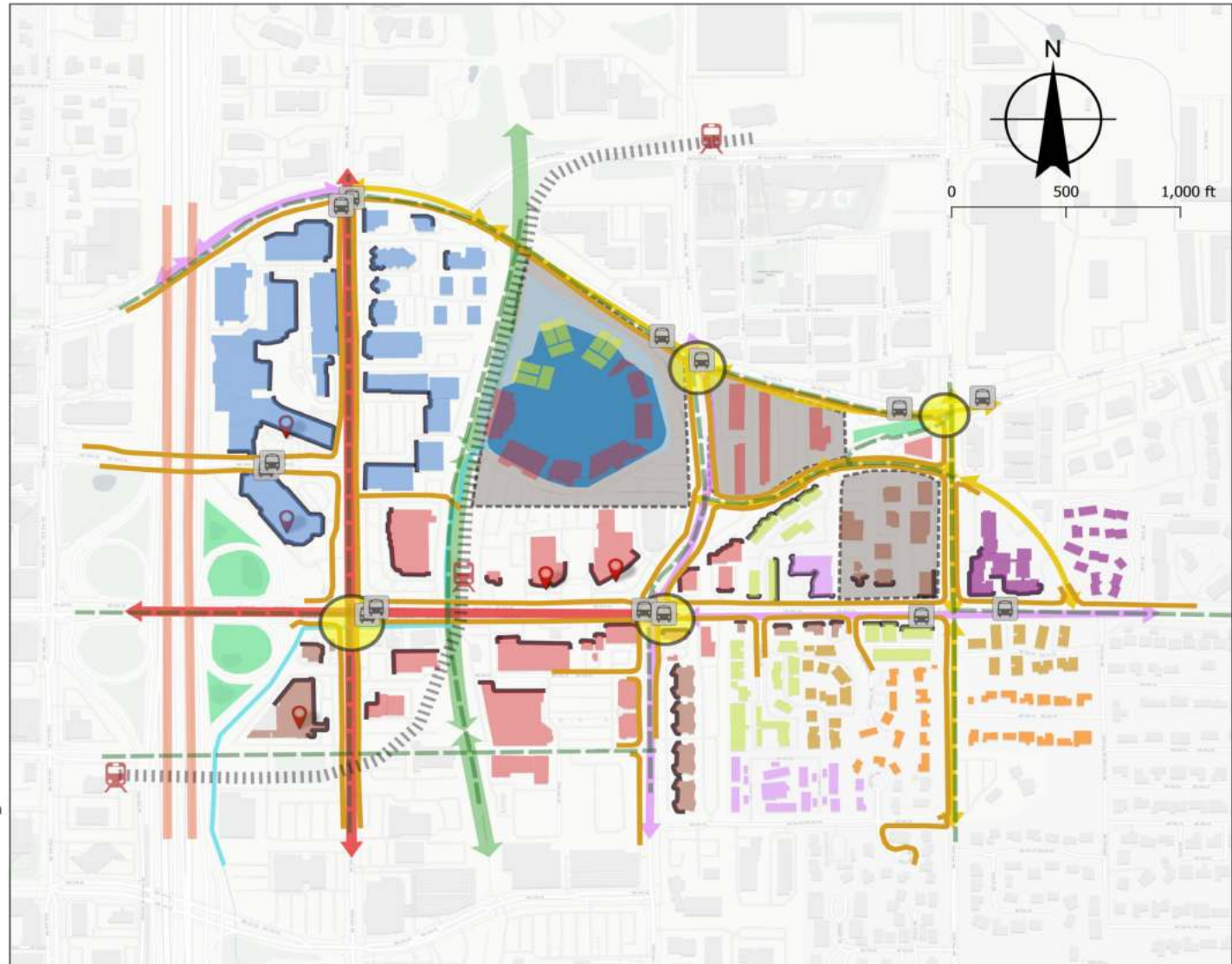


Figure 13: Urban Form Analysis (existing condition)-Before Diagram Source: Q-GIS

Urban Framework



Figure 1: Urban green walking and biking network in Singapore. Ever since the government came up with the concept and the phrase "garden city" in 1967, Singapore has been renowned as a city that is set within a garden. The proposed green walking and bike network has as its primary goal the improvement of public transportation, cycling, and walking as modes of transportation. Green pedestrianized networks have the potential to cut down on emissions of greenhouse gases while also allowing for higher residential densities in future developments. These green walking networks connect nodes and activate them.



Figure 2: One of the best examples of how urban design can make use of underutilized spaces is the transformation of an abandoned railway in Taiwan into a sustainable green corridor. Alongside the light rail, the Eastrail line continues its way. By activating the edge and constructing a green buffer zone surrounding the Eastrail, it is possible to establish a sustainable green corridor that can be used for walking and biking.



Figure 3: One of the best examples of activating the edge and space around a lake and blue space is found at China's SWAN LAKE PARK. Because of the way the land is used, the public is not permitted to enjoy Bellevue Lake, which is surrounded by offices. It will be beneficial for future sustainable urban growth with high density to construct a park with a tree canopy surrounding the lake. The proposed park is going to be connected to a network of trails for walking and riding.



Figure 4: Along the Harbor Way in Boston are a number of nodes that can be accessed. Figure 4: These nodes are linked by a variety of modes of transit, and they provide a space for people to walk around and sit down. Activating nodes throughout the site plan by building a place to sit in addition to paths for people to walk and ride bikes can support high density in future development.

Figure 14: Urban Formwork-After Diagram Source: Q-GIS

Urban design approach

Urban design framework: The approach is based on developing public and green spaces and also developing mixed-use areas to support the new development which can bring more population to this area.

Additional Information:

In the project is inspired by the urban green walking and biking network in Singapore which was first introduced by the phrase “garden city” in 1967. the underutilized space could be best inspired by the transformation of an abandoned railway in Taiwan. Another good example for activating the edge and space around Bellevue Lake is China’s Swan Lake Park. Boston has also linked a number of nodes via a variety of modes of transit and a proper space for walking around and sitting.

