Transportation and Development in Kirkland

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1. Introduction

There is hope that increasing urban density will foster fewer and shorter trips and more of those trips by walking and transit, and most importantly fewer and shorter trips by auto. Is this hope being realized? If it is we should see less congestion. If not, are we achieving the right kind or amount of density. Mixed use is needed to shorten trips and to enable walking, and increased density is needed to foster enough people to support business and employment centers for the hope to be realized, and to support transit service.

The purpose of this report is to analyze transportation in Kirkland to see if there is consensus on the nature of the problem, thereby providing a common basis for crafting strategies for moving forward. A common understanding of the problem is needed as because traffic congestion will not be relieved easily. Auto traffic is difficult to dial back.

This report examines the expected effects of increased urban density on auto travel. This is applied to different area types and to different types of development that is occurring in Kirkland. Kirkland's growth, commuting, and traffic patterns are assessed. Conclusions and recommendations are drawn from this analysis.

2. Kirkland Redevelopment Types

Four development types that are occurring in Kirkland are examined for likely auto travel impacts. First, are large mixed-use developments, Juanita Village, Kirkland Urban, the Village at Totem Lake. Second, are residential short plats where quarter or half acre parcels are developed in four, six or more single family dwelling, or in some cases row houses. Third, are knock downs replaced by another single-family house, larger and more expensive. Fourth, are new types of apartment developments.

Juanita Village, Kirkland Urban, the Village at Totem Lake are examples of complete redevelopment wherein no prior uses continue and prior travel is zeroed out and is replaced by new travel from a more intensive development at auto travel rates that we assume are lower than auto travel rates of the prior development. But the total auto travel to, from, within these developments will be greater than total auto travel before, due to to increased density. How much greater is an empirical question. Traffic mitigation at these sites is usually of the form of

developer provided traffic signals at entrances and impacted intersections, parking requirements, and ride sharing programs.

The prevalent form of residential development that is occurring in Kirkland is where large lots are being redeveloped by short plats into several single family dwellings on cul-de-sac streets (sometimes they are developed as condos on shared driveways, but still detached or attached single-family dwellings). Unfortunately, the enclave nature of this type of development is not conducive of connectivity or walkability to other parts of the neighborhood within which they are located. It is difficult to anticipate any reduction in auto usage of this development type. Usually one house is replaced by four, six or more single-family dwellings with no reduction in auto use rate but more houses.

Small homes on standard city lots in west of Market, East of Market, and Norkirk are being knocked down and replaced by large homes. This process is nearly complete in these areas. This one-for-one replacement is unlikely to reduce auto travel, because the modest house may have housed residents who worked in Kirkland, and the new residents may work in a larger employment market area.

Kirkland experienced a boom of garden apartments, several in the Juanita neighborhood, during the last half of the last century. Typically these were three-story walkup apartments with surface parking. These proved popular and affordable, but are no longer being built. Rising land values and planning restrictions/incentives have changed the form of apartment developments to three to five story structures over retail and structured parking. Examples of this type of development can be seen on Central Avenue, in Juanita Village, and at the southwest corner of 124th Ave NE and NE 116th St. This new form of apartment development has the potential of reducing auto travel in comparison to garden apartments, but comparative data is needed.

3. Growth By Annexation

Kirkland has grown in recent years by annexing areas that were developed under administration of King County. Consequently, Kirkland has inherited areas that have evolved from rural, to exurban, to urban character via varying development standards. Rural roads have evolved to inadequate urban arterials. Piecemeal development has resulted in enclave developments that are not well connected with collector streets. Street and sidewalk standards have evolved under King County administration and now under the City of Kirkland, resulting in varying vintages and discontinuities of street types and sidewalks, which makes it a challenge to design and build pedestrian and bicycle routes.

One positive aspect of the seemingly haphazard development pattern is a good mix of housing types and values. Unlike some suburban areas that are homogeneous, Kirkland's annexation areas are quite diverse in character. Although the remaining land available for development is a infill challenge it is adding a new development type that adds to the mix. However, this new

type of infill development is adding housing at the high end for the most part. It is only juxtaposed among existing older and more modest housing.

4. Kirkland Growth Patterns

Kirkland is in the wake of Seattle's affluent growth sector. Consequently, Kirkland is attracting high-end residents and jobs. A new book by Richard Florida, the New Urban Crisis identifies the growing stratification of our cities, with mounting inequities and rising home prices. He identifies Seattle as a knowledge hub with gentrified areas, such as Kirkland that is unaffordable to blue collar and service workers. Increasingly, the metro area is seeing more spatially separated haves and havenots. Displaced by gentrification, havenots are forced to seek more distant affordable places to live. Clustering of haves and displacement of lower income residents has and continues in Kirkland. The following analysis of commuting and development data illustrate this gentrification phenomenon.

According to 2010 Census Kirkland had 24,345 housing units. The State of Washington Office of Financial Management estimates the 2016 count of housing units is 38,017, an increase of 56.2 per cent. However, annexation accounts for approximately 12,500 housing units. The adjusted increase in housing units is 1112, which is an increase of 4.57 per cent. This compares to increase of 8.8 % for Bellevue, 9.65% for Redmond,10.36% for Seattle, 2.46% for Shoreline, and 3% for Mercer Island.

During the period of 2009-2015 300 SF units were demolished and 46 units in 10 duplexes, 2 3-plexes, 2 4-plexes and one 8-plex according to data compiled by PSRC.

Active development permits can be viewed at maps.kirklandwa.gov. Appendix A displays active (May 2017) permits for, single-family residents, multi-family residents, mixed use, and demolitions. The pattern of development permits are not concentrated, but widely distributed. Consequently the new development will not well served by transit. When comparing the maps single-family permits and demolitions it is clear that the more central development is knock downs and replacements.

5. Kirkland Commuting Patterns

Kirkland is often thought of as a typical suburban community where resident workers have to travel elsewhere to work. But Kirkland has matured with a growing employment base with a near balance of jobs and workers. But most jobs are not filled by resident workers. According to LODES 2013 data[1], Kirkland city, including annexation area; 36,637 workers were employed in Kirkland and Kirkland was home to 39,777 workers. Even more surprising, 31,960 of the 36,637 Kirkland workers live outside Kirkland, and 35,100 of the 39,777 workers who live in

Kirkland are employed outside of Kirkland. Only 4677 workers, or 11.8 per cent, are employed in Kirkland and live in Kirkland.

These data illustrate that Kirkland is part of a complex metropolitan area and help explain why peak hour congestion appears to be everywhere and in all directions. One member of a Kirkland household may work in Seattle while another member may work in Redmond. Or an employee may live miles away, not being able to afford to live in Kirkland. This examination of patterns of home and work for Kirkland worker residents and Kirkland workers illustrates the interconnectivity of the Seattle metropolitan area that Kirkland is part.

As shown in Table 1 workers that reside in Kirkland work in Seattle (9132), Redmond (7182), Bellevue (6319), Kirkland(4677), Bothell (1181), Everett (930), Renton (820), Woodinville (585), Issaquah (583), Lynnwood (567), and the remainder elsewhere (7811). However, this remainder amounts to 20 per cent of resident workers who are employed elsewhere, in at least 20 other locations and in small numbers ranging from 50 to 500 each, to places like Mill Creek, Monroe, Kent

As shown in Table 2 Persons working in Kirkland commute from Seattle (4872), Kirkland (4677), Bellevue (1988), Redmond (1369), Bothell (1010), Renton (797), Everett (761), Sammamish (721), Cottage Lake (631), Kenmore (614), and the remainder from elsewhere (19,197). But this remainder is 52 per cent of all Kirkland workers, which means over half of Kirkland workers are coming from a number of locations, but in small numbers from any one location, say 400 each from 50 other locations.

The LODES data does not include self-employed workers, only workers where unemployment insurance was paid for by a company or firm. Some "headquartering" exists where a group of employees are listed at the firm main office rather than the individual establishment, most notably school districts and construction companies.

[1] U.S. Census Bureau. 2013. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. http://onthemap.ces.census.gov/
U.S. Census Bureau. 2013. LODES Data. Longitudinal-Employer Household Dynamics Program. http://lehd.ces.census.gov/applications/help/onthemap.html

Table 1
Where Kirkland Resident Workers Work

Place	Number	Percent
Seattle	9132	23.0
Redmond	7182	18.1
Bellevue	6319	15.9
Kirkland	4677	11.8
Bothell	1181	3.0
Everett	930	2.3
Renton	820	2.1
Woodinville	585	1.5
Issaquah	583	1.5
Lynnwood	567	1.4
Elsewhere	7811	19.6

Table 2
Where Kirkland Workers Live

Place	Number	Percent
Seattle	4872	13.3
Kirkland	4677	12.8
Bellevue	1988	5.4
Redmond	1369	3.7
Bothell	1010	2.7
Renton	797	2.2
Everett	761	2.1
Sammamish	721	2.0
Cottage Lake	631	1.7
Kenmore	614	1.7
Elsewhere	19197	52.4

Current urban planning thinking stresses the importance of a balance of jobs and housing, and urban village design to reduce travel. Although Kirkland has a good job-housing balance, the data show the amount of external travel to work exceeds what one would expect from a balanced number of jobs and housing. Primarily, Kirkland residents work outside of Kirkland and Kirkland jobs are filled by non-residents. Partly, this can be explained by the lack of affordable housing in Kirkland for many of the Kirkland workers, and the mismatch of jobs for the skills of Kirkland residents.

Nevertheless, this may be a worse case scenario as it does not include self-employed workers who may work more locally than other workers. Similarly, the LODES data does not report workers who work from home and do not commute daily.

6. Growth in Kirkland Traffic

Growth of traffic is measured by the change of entering volumes at signalized intersections. For all signalized intersections in Kirkland traffic grew 3.54% from 2011 2015. Signalized intersections in neighborhoods experiencing growth show a larger increase in traffic.

1058 housing permits were finalized from 2010 to 2014, an increase of 2.87% housing units in Kirkland.

The intersection at NE 70 St and 132 Ave NE in South Rose Hill increased from 18,882 entering volume in 2011 to 20,965 in 2015, an increase of 11.0%. The increase in housing units in South Rose Hill was 2.59% from 2010 to 2014.

The intersection at Juanita Dr and NE 122 St in Finn Hill experienced an increase in traffic of 6.66% and a growth of housing units of 1.72%.

Kingsgate housing units grew 1.22% from 2010 to 2014, while traffic grew by 39.1% at NE 132 St and 132 Ave NE, 20.9% at NE 140 St and 132 Ave NE, 5.49% at NE 144 St and 124 Ave NE, and 8.96% at NE 132 St and 124 Ave NE. Housing units in East Kingsgate grew by 6.61%.

Houghton-Lakeview area grew by 1.66% in housing units from 2010 to 2014 and traffic grew by 10.8% at NE 68 St and 108 Ave NE, and 14.0% at State and NE 68 St.

This analysis shows that not all the traffic growth is attributable to new development. The economy improved during that period as well.

Conventional wisdom says we cannot build our way out of congestion, so we ought not to try. This is due to a concept called Triple Convergence, which states that new underused capacity will be quickly filled by auto shifting their time of travel to take advantage of new capacity, or

shifting their route, or transit riders shifting their mode of travel to auto. Nevertheless, capacity improvements are beneficial in that the duration of congestion is reduced, but not eliminated.

7. Density and Congestion

We are experiencing that increasing residential density worsens traffic congestion rather than improving it. Even if the more densely new development drives less and relies more on walking and transit than the current residents, the new auto traffic adds to the current traffic, more than the current residents reduce their auto trips. Even if we see more new households driving less the increased population leads to more overall driving.

This is particularly true in Kirkland where much of the increase in density is the result of developments of single-family (SF) projects using short plats wherein four to ten units are constructed small lots served by cul-de-sacs or private drives. They are not transit-oriented or walkable developments, and add auto traffic. Street connectivity that is needed for walkable communities suffers from this proliferation of cul-de-sacs.

It might be advisable to stop or reduce this type of SF development that adds congestion rather and does not improve walking environment and transit orientation. However the horse is out of the barn and it may be too late to increase the minimum lot size to 5000 square feet, which would deter or improve his type of development. This type of small-scale SF development is already being squeezed by financing, land, and labor costs. In addition, permitting and stormwater management costs add to a final product that is not affordable for many who might drive less.

For density to decrease the amount of auto travel for an area the reduction in rate of travel by auto must more than offset the increase in auto travel from the new development.
In order to achieve a reduction in auto travel we must achieve a reduction in auto use by the existing population of the area that is greater than the auto travel by the new population. This is a challenge, to reduce the rate of travel by existing residents to offset the travel of new residents. Similarly, existing workers and shoppers coming into the area have to reduce auto rates of travel to offset the new auto trips by new employees and new shoppers.

8. Conclusions and Recommendations

This analysis illustrates the challenge to the management of transportation in Kirkland. Kirkland is growing at a rapid pace, and the growth in traffic is even faster. The build out of Kirkland to current zoning is outstripping the capacity of our inherited system of arterials and collectors.

Kirkland does not have a legacy of continuous and wide boulevards. Instead we have a discontinuous system of arterials on narrow rights-of-way with houses so near that privacy fences are the primary scenery for motorists. New arterials or street widening are not very viable options. Even if we could build a major north south arterial it would attract traffic diverted from

I-405. Perhaps it would be better to rebuild the add/drop lanes on I-405 between 85th and 116th that were eliminated when the toll lanes were created.

As shown in the analysis of commuting in, out, and within Kirkland, workers do not work at the closest employment location. Kirkland workers are employed throughout the region and Kirkland employees come from afar. It is a complex economic region that leads to long commutes for specialized and service workers. Two worker households add to this complexity of home and work travel.

Similarly, household members do not shop at the nearest shopping center, go the school at the nearest school, or go the the nearest medical center for health care. Evergreen, Costco and Fred Meyer serve more than Kirkland customers. And Kirkland residents travel to Bell Square, Home Depot and Lowes in adjacent cities. And most of this non-work travel is by auto.

What changes to transportation management and growth management should be done. One thing is in process, a local transit plan for Kirkland has been initiated will identify strategies and programs to promote greater reliance on transit. However, this is unlikely to reduce auto traffic much. Another possibility would be accelerate traffic mitigation projects using faster than budgeted revenue from traffic impact fees derived from the rapid rate of development. This would likely take the form of intersection and traffic signal improvements.

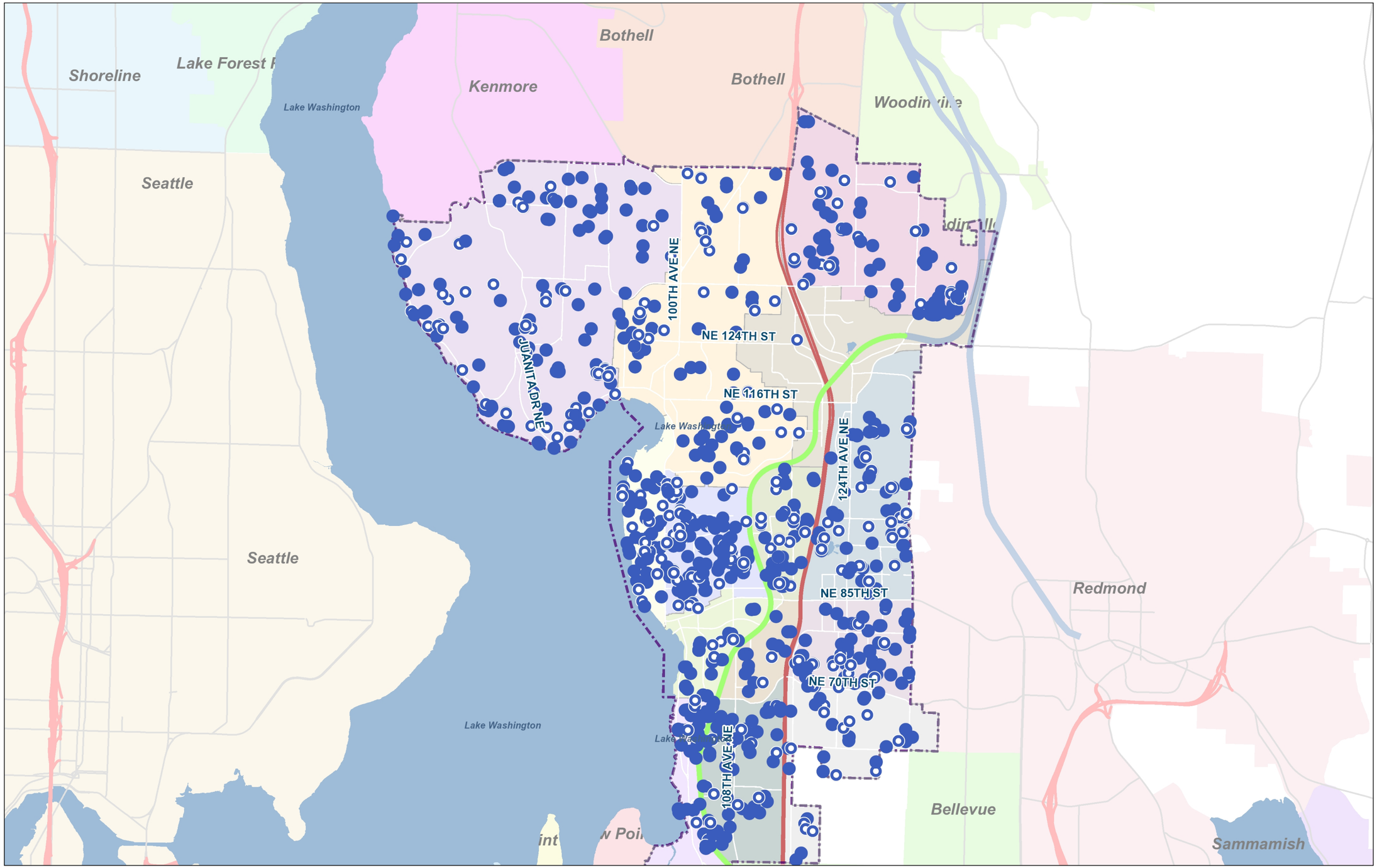
On the other side of the coin, the City of Kirkland might institute changes to planning and permitting. This could take the form of increasing the minimum lot size for short plats that presently produce large houses on small lots that seemingly do not produce walkable or transit-oriented developments. Another possibility would be to meter building permits to reduce the pace of development that would allow traffic mitigation to keep pace. The role of the Transportation Commission is limited in this arena. One area we can play a role is to examine the "neighborhood plan new connections map" process to see if street connectivity can be improved. Similarly, discontinuities of sidewalks and bicycle paths needs attention as the inherited varying street types pose significant problems to pedestrian and bicycle routing.

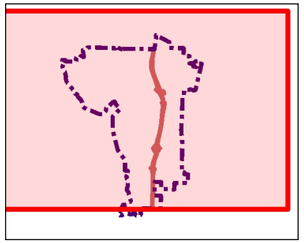
The Transportation Commission should reexamine its approach to concurrency as the pace of development is outstripping the implementation of transportation improvements that contained in the Transportation Master Plan. Is it merely a question of pace or is the Transportation Master Plan deficient in managing the growth in traffic?

Appendix A

See attachment for maps of current development permits as of May 2017. Map 1 is for Single-Family permits. Map 2 is for Multi-Family permits. Map 3 is for Mixed-Use permits. Map 4 is for Demolition permits. Open circles indicate permit applications and solid circles indicate permits that have been issued and are active.

City of Kirkland GIS





Legend

- Single Family New
  - Applied For
  - Issued
- Single Family Alterations
  - Applied For
  - Issued
- City Limits
- Cross Kirkland Corridor
- Regional Rail Corridor
- Major Streets
  - Interstate
  - Major Roads
- Lakes
- Neighborhood
  - Bridle Trails
  - Central Houghton
  - Everest
  - Finn Hill
  - Highlands
  - Juanita
  - Kingsgate
  - Lakeview
  - Market
  - Moss Bay
  - Norkirk
  - North Rose Hill
  - South Rose Hill
  - Totem Lake

1: 52,055

1.6 0 0.82 1.6 Miles

NAD_1983_StatePlane_Washington_North_FIPS_4601_Feet

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Notes

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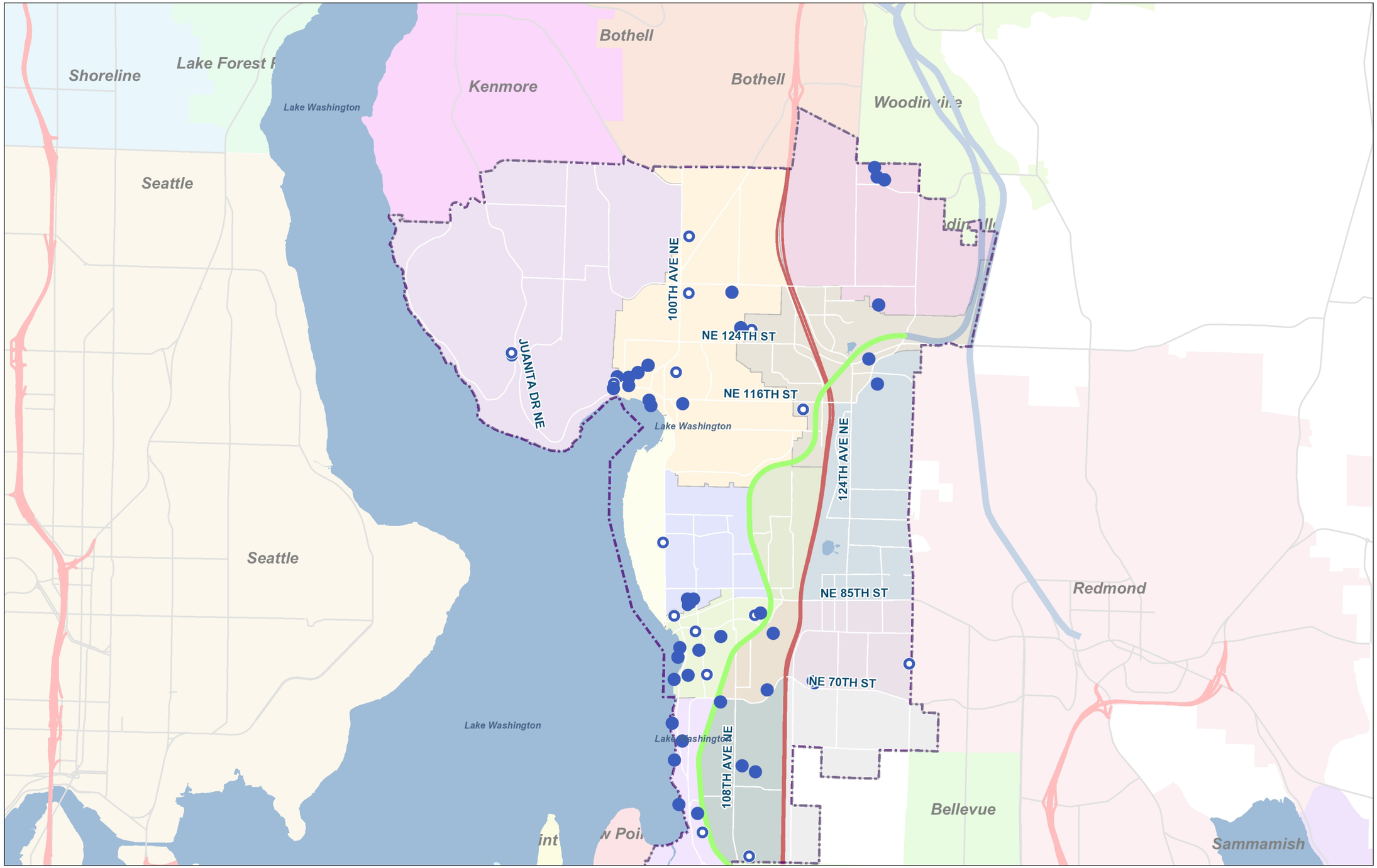
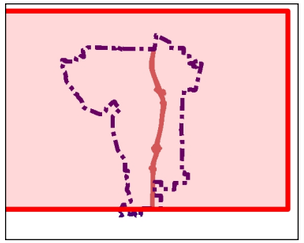
Multi Family New & Alteration Building Permits





Legend

- Multi Family New
  - Applied For
  - Issued
- Multi Family Alterations
  - Applied For
  - Issued
- City Limits
- Cross Kirkland Corridor
- Regional Rail Corridor
- Major Streets
  - Interstate
  - Major Roads
- Lakes
- Neighborhood
  - Bridle Trails
  - Central Houghton
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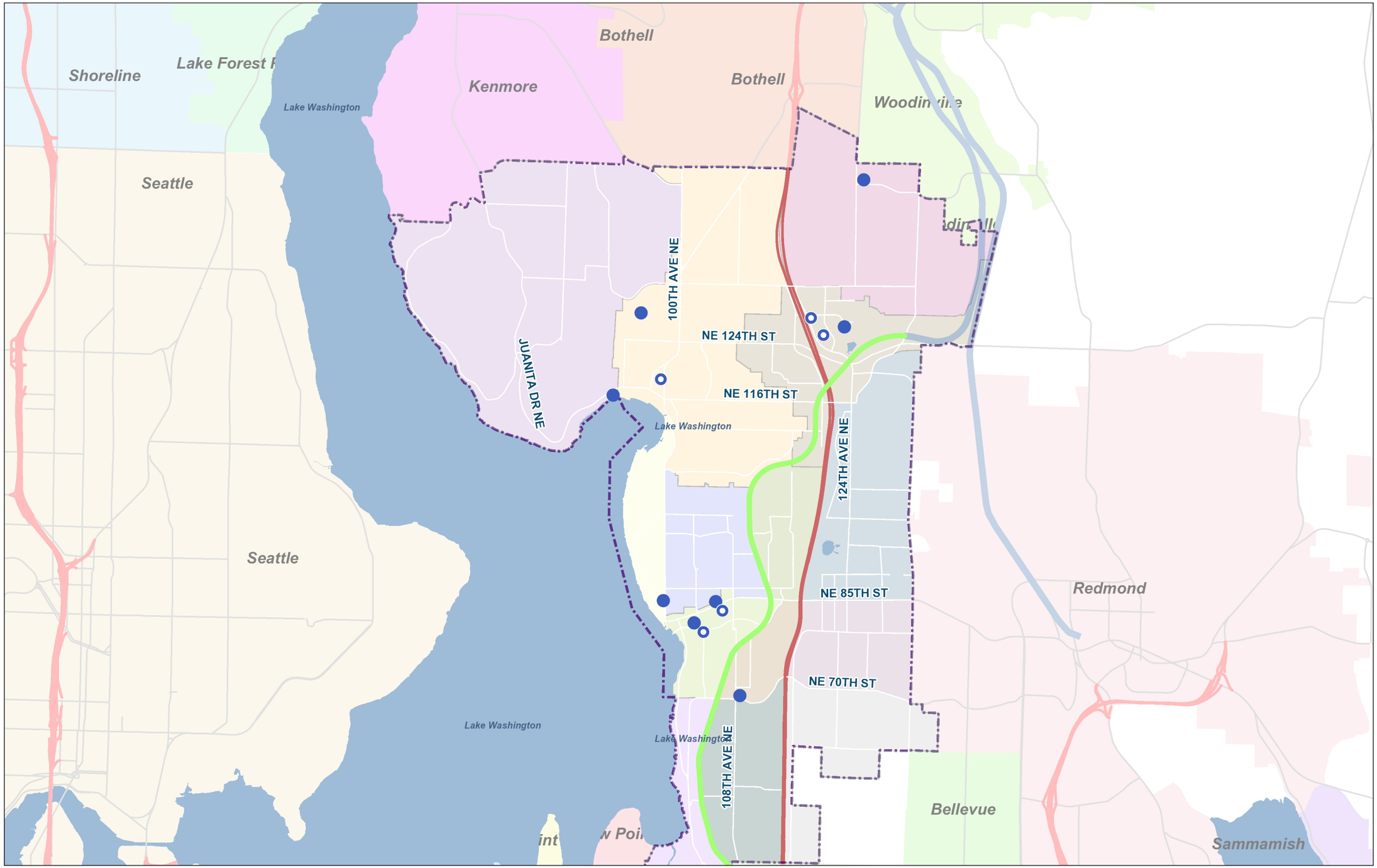
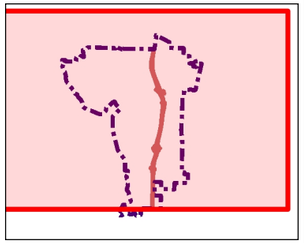
Mixed Use Permits New & Alterations





Legend

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- Mixed Use Alterations
  - Applied For
  - Issued
- City Limits
- Cross Kirkland Corridor
- Regional Rail Corridor
- Major Streets
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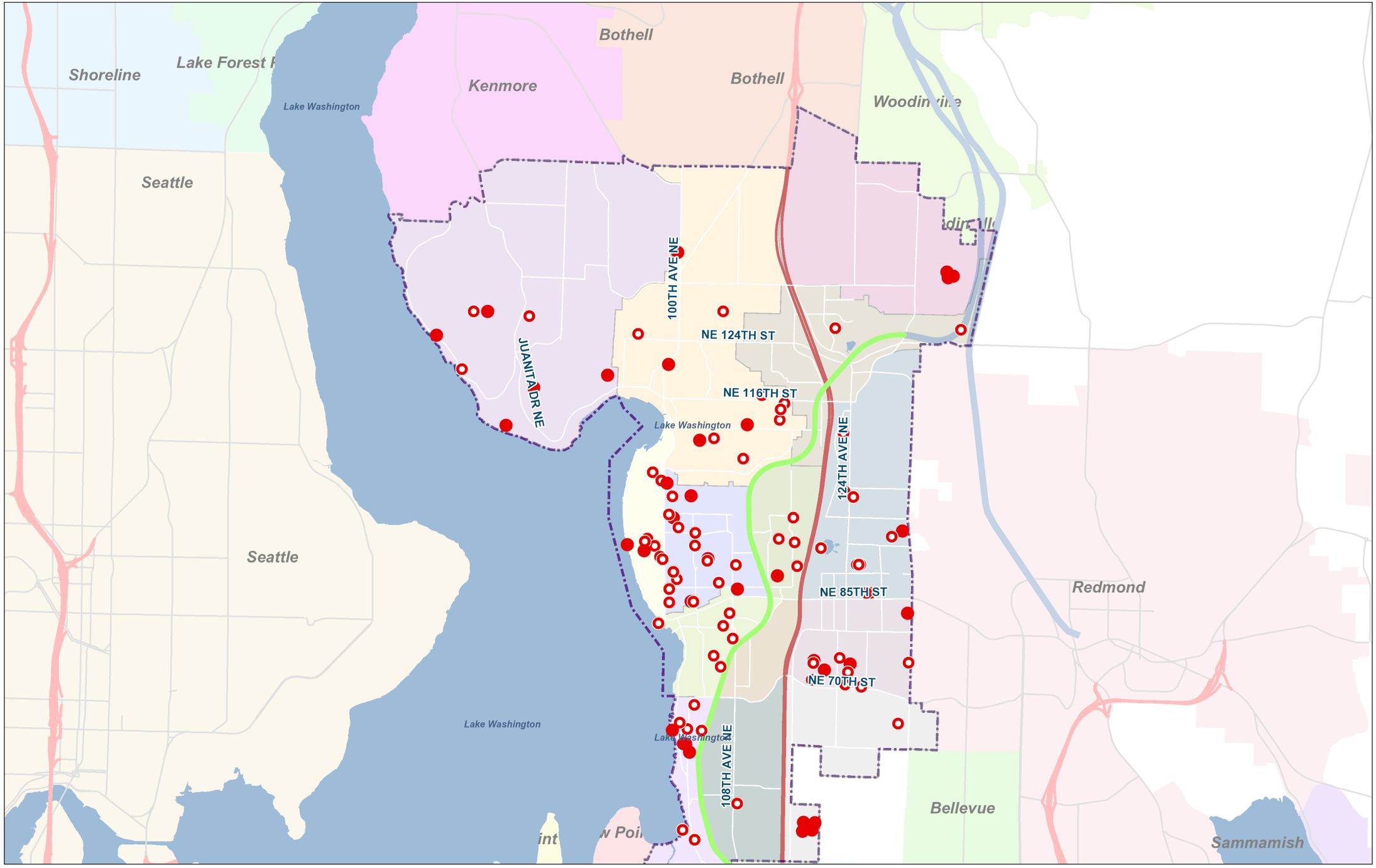
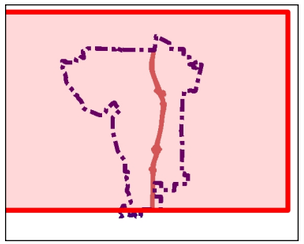
Demolition Permits





Legend

- Demolition Permits
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  - Issued
- City Limits
- Cross Kirkland Corridor
- Regional Rail Corridor
- Major Streets
  - Interstate
  - Major Roads
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