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To: hcpheidi@yahoo.com
Cc: [Oliver Orjiako](#); [Jose Alvarez](#)
Subject: FW: Comp Plan Internal Inconsistencies
Date: Tuesday, July 28, 2026 10:32:00 AM
Attachments: [Council Memo Internal Inconsistency Concurrency.pdf](#)
[14 Traffic Assessment Memo.pdf](#)

Good day, Heidi,

Thank you for providing feedback related to the July 22nd Council Work Session.

Your comments will be added to the Comprehensive Plan Index of Record.

Best,

Jeff Delapena
Program Assistant
COMMUNITY PLANNING

564.397.4558

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To: Sue Marshall <Sue.Marshall@clark.wa.gov>; Glen Yung <Glen.Yung@clark.wa.gov>; Matt Little <Matt.Little@clark.wa.gov>; Michelle Belkot <Michelle.Belkot@clark.wa.gov>; Wil Fuentes <Wil.Fuentes@clark.wa.gov>
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Subject: Comp Plan Internal Inconsistencies

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Dear Councilors,

Please find attached a memorandum for the record on the 2025 Comprehensive Plan Update. It identifies an internal inconsistency between the Plan's own policies for siting higher-density residential development — which call for that growth in transit corridors, near employment, and in areas already served by urban infrastructure — and the Update's allocation of the County's largest share of unincorporated growth to the Vancouver Urban Growth Area, driven by a land-capacity model that concentrates that growth in the NE 179th Street corridor, which has neither transit nor employment. It also addresses the resulting concurrency and financing deficiency under RCW 36.70A.070.

I respectfully request that Council reconcile the residential allocation with its adopted locational and concurrency policies before adoption.

Thank you for your consideration.

Heidi

MEMORANDUM

To: Clark County Council

From: Heidi Pozzo

Date: July 19, 2026

Re: Internal inconsistency between the Comprehensive Plan's residential-density policies and the growth allocated to the unincorporated Vancouver Urban Growth Area, and the resulting concurrency deficiency — 2025 Comprehensive Plan Update

The purpose of this memorandum is to identify an internal inconsistency in the 2025 Comprehensive Plan Update between what the Plan's own policies say about where higher-density residential development should be located and where the Update actually directs that development. The Growth Management Act requires that a comprehensive plan be an internally consistent document and that its elements be consistent with one another and with the future land use map. RCW 36.70A.070; WAC 365-196-500. The Update does not meet that standard. Across every element that addresses the question, the Plan directs higher-density housing toward transit corridors, employment centers, and areas already served by urban infrastructure — and calls for less intensity in areas that are undeveloped or unserved. Yet the Update allocates the largest single share of the County's unincorporated residential growth to the Vancouver Urban Growth Area on the basis of available land capacity rather than the locational criteria the Plan's policies establish, and that capacity-based allocation concentrates the growth in the NE 179th Street corridor. That corridor lacks the two conditions those policies require — fixed-route transit and co-located employment — and the Plan's own transportation and financing record confirms that the services needed to make the allocation concurrent are neither in place nor funded.

1. The Plan directs higher-density housing to transit corridors, employment, and served areas — and away from undeveloped land.

The Land Use Element's growth-form policy is explicit. Policy 1.3.1 provides that development and redevelopment in the urban growth area should be strongly encouraged to occur in greater intensity in major centers, transit routes, and other areas characterized by both existing higher-density urban development and existing urban services, and should be encouraged to occur with less intensity in areas where urban development is of lower density or has not yet occurred, or where urban services do not yet exist (Land Use Element, Ch. 1, Policy 1.3.1). Policy 1.3.2, one of the Update's climate policies, directs the County to promote higher-density development specifically to support pedestrian and transit travel (id., Policy 1.3.2 [GHG, RES]).

The land use designations carry the same instruction. The Urban High Density Residential designation states that these areas shall be located in transit corridors and near commercial and employment centers, providing easy access to employment; the Urban Medium Density Residential designation requires siting near commercial uses and transportation facilities (Land

Use Element, Ch. 1, page 11, lines 22 and 32–34). The Urban Growth Area centers discussion confirms that higher-than-average densities are to occur along high-capacity and priority public transit corridors (id., page 25, lines 38–40).

The other elements are consistent with the Land Use Element on this point. The Housing Element requires that low-income and special-needs housing be planned so that it is well served by public transit, and that codes promote neighborhood designs that discourage reliance on the automobile (Housing Element, Ch. 2, Policies 2.3.2, 2.2.8); its climate policies link housing strategies to the location of work sites and jobs (id., Policies 2.1.3, 2.1.4). The Community Design Element directs infill and mixed-use conversion to urban centers and transit corridors (Community Design Element, Ch. 11, Policy 11.2.2). The Economic Development Element directs redevelopment to underutilized sites and transit-oriented site design along transit corridors (Economic Development Element, Ch. 9). The Community Framework Plan states the same policy at the countywide level: higher densities occur along high-capacity and priority public transit corridors. The Plan speaks with one voice — density follows transit, employment, and existing service, not raw land availability.

2. The Update directs the County’s unincorporated growth to the Vancouver UGA on a land-capacity basis.

Because each city plans its own urban growth area, the unincorporated Vancouver UGA is the portion of the County’s growth the County itself must site. The County’s allocation concentrates that growth there. The Housing for All Planning Tool (Appendix J) allocates approximately 103,695 housing units countywide and directs on the order of 44,000 of them — roughly 43 percent — to the unincorporated Vancouver UGA and rural areas, under a methodology that has the Vancouver unincorporated UGA “absorb the remainder,” with the majority in the below-80-percent-of-median-income bands. The allocation is derived from the land-capacity assumptions in the Vacant Buildable Lands Model (Appendix K), which assigns each district an assumed density and net developable share. The mechanism is availability-driven: growth is placed where the model shows vacant buildable land. The NE 179th Street corridor within the Vancouver UGA is a principal recipient.

The income-band composition of that allocation, and how it has shifted since the County’s initial 2024 allocation, is shown below for the City of Vancouver and the unincorporated Vancouver UGA side by side. The 2024 figures are the County’s Population, Housing and Employment Allocation (Issue Paper 5, January 17, 2024, Table 4); the current figures are Appendix J (Housing for All Planning Tool). Figures are net-new housing units for 2023–2045 and exclude the separately-listed emergency-shelter beds.

Net-new housing units by income band

	City of Vancouver		Unincorporated Vancouver UGA + rural	
Income band (% of AMI)	2024	Current	2024	Current
0–30% (non-PSH)	3,934	4,641	5,578	5,583
0–30% (PSH)	2,334	2,600	3,309	3,292
>30–50%	5,328	5,227	7,555	7,611
>50–80%	5,408	1,365	7,667	10,063
>80–100%	3,171	1,459	4,497	4,412
>100–120%	3,007	4,881	4,264	2,445
>120%	7,166	16,355	13,981	10,629
Total	30,348	36,527	46,850	44,036

Share of each jurisdiction’s allocation by income band

	City of Vancouver		Unincorporated Vancouver UGA + rural	
Income band (% of AMI)	2024	Current	2024	Current
0–30% (non-PSH)	13.0%	12.7%	11.9%	12.7%
0–30% (PSH)	7.7%	7.1%	7.1%	7.5%
>30–50%	17.6%	14.3%	16.1%	17.3%
>50–80%	17.8%	3.7%	16.4%	22.9%
>80–100%	10.4%	4.0%	9.6%	10.0%
>100–120%	9.9%	13.4%	9.1%	5.6%
>120%	23.6%	44.8%	29.8%	24.1%
<80% subtotal	56.1%	37.8%	51.5%	60.4%

3. The area where this growth is concentrated lacks the transit and employment access the Plan’s siting policies require.

The area where this growth is concentrated does not have — and under the Update will not have — the transit and employment access the Plan’s own policies make prerequisites for higher-density siting. On NE 179th Street itself, the Regional Transportation Council has confirmed that no fixed-route transit service is planned (RTC response, DEIS Questions for Clark County). The high-capacity transit investment that is funded and under construction serves a different alignment: C-TRAN’s Vine on Highway 99 (the Purple Line), a nine-mile bus rapid transit line scheduled to open in 2027, runs along the Highway 99/Main Street spine from the Vancouver Waterfront to a northern terminus at the WSU Vancouver campus in Salmon Creek, and includes conversion of the Salmon Creek Park-and-Ride into the Salmon Creek Transit Center (Transportation Element, Ch. 5; 2024 Regional Transportation Plan six-year project list). That line ends at WSU Vancouver. The housing concentrated in this area lies well north of that terminus. It is concentrated along NE 179th Street from NE 50th Avenue on the east to NE 11th Avenue on the west, and south along NE 11th Avenue — a footprint whose bulk sits far outside the quarter- to half-mile walking

distance that a transit stop or station serves. A limited number of parcels at the southern edge, along NE 11th Avenue, may approach the half-mile mark, but even those lack a walkable connection to the station: the connecting roads are not built out, and the pedestrian network is discontinuous. Straight-line distance therefore overstates the access that exists; measured as an actual walk over a completed, connected network, effectively none of this housing is within walking distance to HCT corridors or public transit (Land Use Element, Ch. 1, page 25, lines 46–47) or well served by public transit (Housing Element, Ch. 2, Policy 2.3.2). The drive-to-transit alternative that this distance would otherwise force is itself being narrowed: C-TRAN’s own traffic assessment for the project confirms that the Salmon Creek Transit Center improvements remove 103 parking stalls, reducing the park-and-ride from 462 to 365 normal stalls (DKS Associates, NE 139th Street / Salmon Creek Transit Center Traffic Assessment, November 22, 2024). Park-and-ride capacity serving this area is therefore contracting even as major new residential growth is concentrated in locations beyond walking distance of the station.

The employment side of the same policy is likewise unmet. The City of Vancouver, in written testimony entered into the Comprehensive Plan Index of Record, warned that the HB 1181 vehicle-miles-traveled reduction targets are “likely impossible” to meet without co-located employment, and identified the absence of employment land in the Vancouver UGA as a major contributor to congestion (City of Vancouver written testimony, November 6, 2024). Density directed to a location without jobs and beyond the transit walkshed does not provide easy access to employment or support pedestrian and transit travel; it produces the automobile-dependent pattern the Plan’s policies are written to avoid.

The transportation record confirms the mismatch is real, not theoretical. Developer-commissioned traffic analyses for the 179th corridor show volume-to-capacity failures on a built-out network assumption, meaning that even the improvements the Plan contemplates would not cure the exceedances; and the funded roadway network extends only from the I-5 interchange to NE 29th Avenue, with the NE 29th-to-50th segment and the NE 50th roundabout unfunded. The impact is not confined to 179th. Because the residential growth radiates outward from the Salmon Creek commercial area — where the area’s shopping is concentrated — its trips load the roads serving that commercial node as well, a set of facilities the Update must equally show to be concurrent and financed.

4. The mismatch is an internal inconsistency the GMA does not permit.

A comprehensive plan must be internally consistent, and its elements must be consistent with the future land use map and with one another. RCW 36.70A.070; WAC 365-196-500. Where the Land Use, Housing, Community Design, Economic Development, and Climate policies all direct higher-density residential development to transit corridors and employment centers, and the capacity-based allocation concentrates that development in a corridor that has neither, the Plan is inconsistent with itself. The inconsistency is not cured by the Vacant Buildable Lands Model: a capacity model identifies where land exists; it does not satisfy — and cannot override — the

locational policies the Plan adopts. The climate element sharpens the point. RCW 36.70A.070(9) and HB 1181 require the Update to plan for reductions in vehicle miles traveled, and the Update's own climate policies for housing and land use (Policies 2.1.3, 2.1.4, and 1.3.2) commit the County to co-location and transit-supportive density. Concentrating dense residential growth in a corridor without transit or employment is inconsistent with those policies and undermines the VMT reductions the climate element is required to achieve.

The climate element compounds the inconsistency with respect to the very communities it is required to protect. HB 1181 makes prioritizing overburdened communities a core requirement of the climate element: the Update lists as "Requirement 3: Prioritize reductions that benefit overburdened communities" and devotes a section to "Prioritizing Actions to Benefit Overburdened Communities and Improve Environmental Justice" (Climate Element, Ch. 14, at 3 and at 10; RCW 36.70A.070(9)). The Update's own climate chapter recognizes that climate-vulnerable and overburdened communities overlap substantially with lower-income households. Yet the residential allocation concentrates the County's lower-income growth in the unincorporated Vancouver UGA — the majority of the units allocated there fall below eighty percent of area median income — and concentrates it in the NE 179th Street corridor, a location with no co-located employment, no fixed-route transit, and unfunded serving infrastructure. Siting the households the climate element is required to prioritize where they will be most dependent on the automobile increases, rather than reduces, their transportation cost and burden. That is inconsistent with the element's own overburdened-communities requirement and with the per-capita vehicle-miles-traveled reductions RCW 36.70A.070(9) requires.

5. The same mismatch is a concurrency and financing deficiency, and concentrates demand on roads the record does not fund.

The Plan's concurrency framework and the Update's own UGA criteria independently require what the allocation does not deliver. The Land Use Element recites the GMA's concurrency mandate: transportation level-of-service standards must be adopted, and development proposals that cannot demonstrate compliance with those standards must be denied (Land Use Element, Ch. 1, page 17, lines 29–35). The Land Use Element does not itself establish a concurrency mechanism; it defers to the element chapters — stating that further information and policies regarding service concurrency are contained in the applicable element chapters (*id.*, page 18, lines 1–2) — which places the full weight of concurrency on a transportation and financing analysis that the record shows is incomplete.

The Update's UGA criteria make the financing obligation mandatory. Each UGA "shall have the anticipated financial capability to provide infrastructure/services needed in the area over the planning period under adopted concurrency standards" (Land Use Element, Ch. 1, page 29, lines 12–14). The transportation financing record does not demonstrate that capability. The Transportation Capital Facilities Plan (Appendix A) projects expenditures of approximately \$1.606 billion against revenue of approximately \$1.021 billion — a shortfall on the order of \$584

million, roughly a 36 percent gap — with the twenty-year program back-loaded to 2032–2045 and acknowledged as speculative. A UGA allocation that concentrates growth in a corridor whose level-of-service failures are conceded and whose serving improvements are unfunded does not have the anticipated financial capability the Plan’s own criterion requires, and does not satisfy RCW 36.70A.070(6)(b).

The GMA specifies what the County owed once that shortfall appeared, and the County’s own July 15, 2026 work session recited it. Under RCW 36.70A.070(6)(a)(iv)(C), where probable funding falls short of the transportation system’s identified needs, the finance sub-element must contain a discussion of how additional funding will be raised, or how land use assumptions will be reassessed, “to ensure that level of service standards will be met.” The obligation is not merely to acknowledge the gap; it is to resolve it along one of those two paths so that the adopted level-of-service standards are in fact met. The County has done neither. The funding options presented at the work session — a councilmanic road levy generating roughly \$400,000 per year, a local option gas tax generating roughly \$6.9 million per year and requiring voter approval, and a transportation benefit district generating roughly \$3.4 to \$3.9 million per year — are annual amounts in the low single-digit millions, the largest of which is neither adopted nor within the County’s power to enact without a public vote, set against a twenty-year shortfall on the order of \$584 million. They do not raise the funding the identified needs require. Nor has the County taken the alternative path of reassessing its land use assumptions: the residential allocation to the NE 179th Street corridor is carried forward unchanged. The capital facilities element imposes the same duty from the other direction, requiring the County to reassess the land use element if probable funding falls short and to keep the land use element, capital facilities plan, and financing plan coordinated and consistent (RCW 36.70A.070(3)(e)). Discussing the shortfall and then neither funding it nor reassessing the allocation satisfies neither provision.

The Salmon Creek area compounds the problem on the County’s own record. The transportation concurrency chronology in Appendix A documents a multi-year series of emergency development moratoria in the Salmon Creek area between 2001 and 2006, imposed and repeatedly extended because roadway capacity could not keep pace with development — the County’s own demonstration that this area’s concurrency margin is thin. Yet the roadway projects that would serve the growth now directed there are unfunded or in doubt: the Salmon Creek Interchange Project Phase 2 (NE 20th Avenue to the WSU entrance, estimated at \$35 million) is expressly excluded from the CFP’s funding analysis, and the NE Salmon Creek Avenue realignment (WSU to NE 50th Avenue), which the CFP lists as a current 2026–2031 TIP project, is reported as rescinded in RTC’s July 2026 project obligation status report. A concurrency and financing showing for this area that rests on unfunded and rescinded projects does not establish the anticipated financial capability the Plan’s UGA criterion requires.

The concentration of demand on this area is structural, not incidental. The everyday commercial services this new population will rely on — groceries, fuel, fast food, and medical and professional offices — are clustered in the Salmon Creek Commercial Area along NE 10th and NE 20th

Avenues and NE 134th and NE 139th Streets. There is little comparable commercial to the north, and the residential growth being added along the NE 179th Street corridor carries no co-located commercial of its own. Every routine errand trip that growth generates is therefore funneled onto the same roads, on top of the commute and transit-access trips already described. This is a distinct concentration from employment: the Salmon Creek Commercial Area is where daily-needs shopping is, not where the jobs are, so directing housing to the corridor neither places it near its services nor gives it access to employment — the two conditions the Plan’s siting policies require. The Update must show the roads serving that commercial node to be concurrent and financed for the concentrated demand this allocation creates, and the record does not.

6. Conclusion.

The Update cannot simultaneously adopt policies directing higher-density housing to transit corridors and employment centers and allocate the County’s largest share of unincorporated residential growth to the Vancouver UGA on a land-capacity basis that concentrates it in a corridor that has neither, funded by a capital program that concedes a multi-hundred-million-dollar shortfall. The inconsistency is internal to the Plan and is confirmed by the County’s own transportation and financing record. This memorandum requests that the Council reconcile the Update’s residential allocation with its adopted locational and concurrency policies before adoption.



NE 139TH STREET / SALMON CREEK TRANSIT CENTER TRAFFIC ASSESSMENT MEMO

DATE: November 22, 2024

TO: Randy Parker | C-TRAN

FROM: Randy Johnson, PE, PTOE | DKS Associates
Ilana Burstein, PE | DKS Associates



SUBJECT: C-Tran Hwy 99 BRT Project: NE 139th Street / Salmon Creek Transit Center Traffic Assessment Project #22224-001

INTRODUCTION

The C-TRAN Highway 99 Bus Rapid Transit (BRT) Project is proposing to add BRT investment along Highway 99 and into downtown Vancouver. The Locally Preferred Alternative travels through the existing transit-only access to the Salmon Creek Transit Center along NE 139th Street.

To enter the proposed Transit Center, outbound bus operations will enter from the southern portion of the transit center by traveling northbound along NE 10th Avenue, eastbound at the NE 136th Street roundabout, and northbound into the Park and Ride. The inbound bus operations will enter from NE 139th Street and be required to take a westbound left at the proposed signalized intersection. To exit the proposed Transit Center, both inbound and outbound bus operators will be required to take a northbound right turn onto NE 139th Street. Currently the intersection is a three-legged intersection with a stop sign on the south leg.

To provide improved safety for bus operations, operators, and passengers a traffic signal and median is being proposed to improve access to the Transit Center.

The proposed traffic signal is located along NE 139th Street at the existing access to the Salmon Creek Transit Center shown in Figure 1 and the proposed site plan is shown in Figure 2. The proposed traffic signal intersection is located approximately 500 feet east of the existing traffic signal at the NE 139th Street / NE 10th Avenue intersection, and 950 feet west of the existing traffic signal at the NE 139th Street / I-205 Southbound On-Ramp.

NE 139th Street is classified as an Urban Minor Arterial. It has five lanes and a posted speed limit of 35 mph. NE 10th Avenue is classified as an Urban Collection and has a posted speed limit of 35 mph. It too has three lanes.

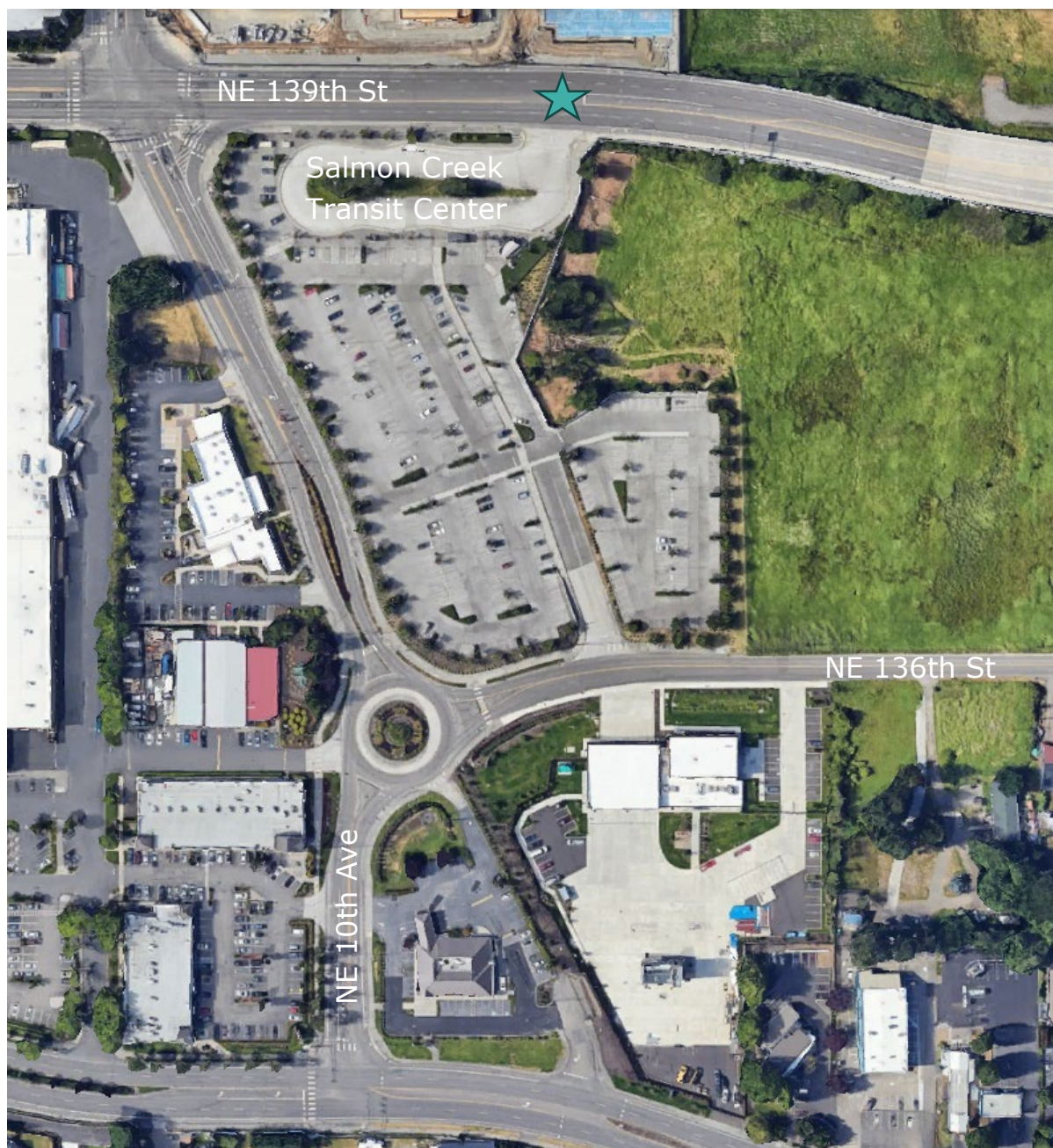


FIGURE 1. PROPOSED SIGNAL LOCATION

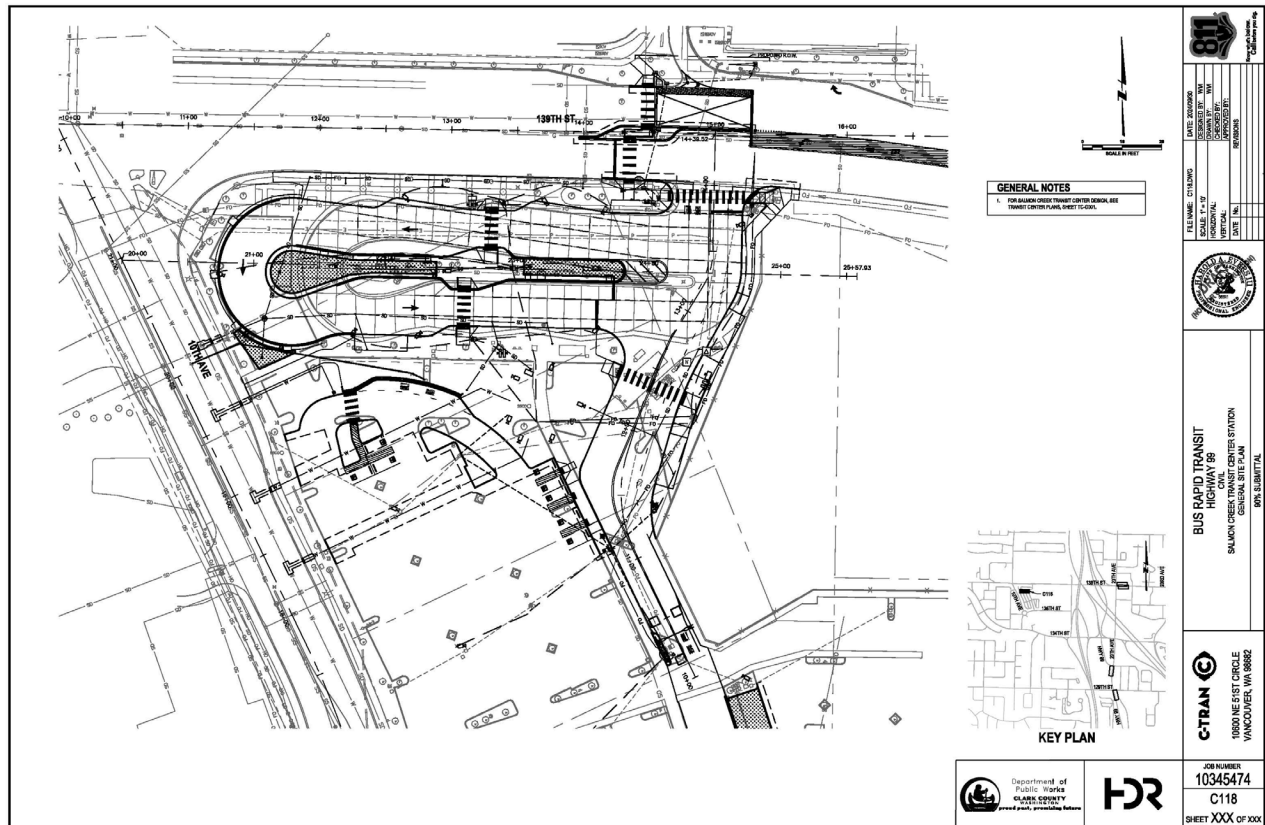


FIGURE 2. PROPOSED SITE PLAN

PROPOSED CONDITIONS

A new traffic signal and median is proposed at the intersection of NE 139th Street / Salmon Creek Transit Center to facilitate the ingress and egress to the Salmon Creek Transit Center for the westbound left and northbound right movement for the BRT vehicles. The proposed design and signal phasing plan are shown in Figure 3 and Figure 4. The plan includes the following:

- The westbound right turn into Skyview Station remains green full time
- The westbound through phase only stops when there is a pedestrian crossing
- The northbound right transit phase overlaps with the westbound left bus phase and pedestrian phase
- Under future C-TRAN service plans, the max demand for the westbound left bus-only turn is 20 vehicles with 4 BRT buses, 13 local service buses, and up to 4 C-VAN/other vehicles.

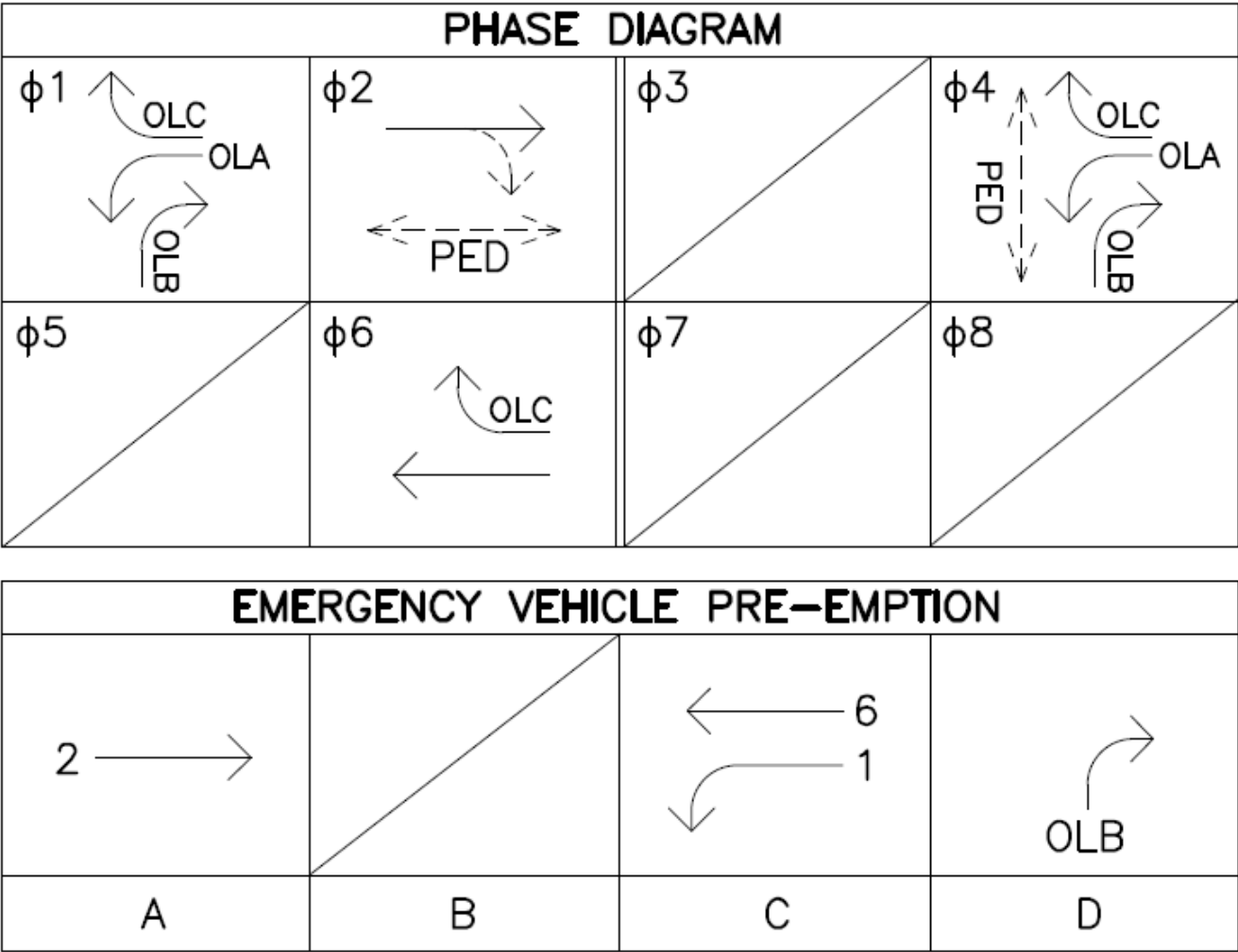
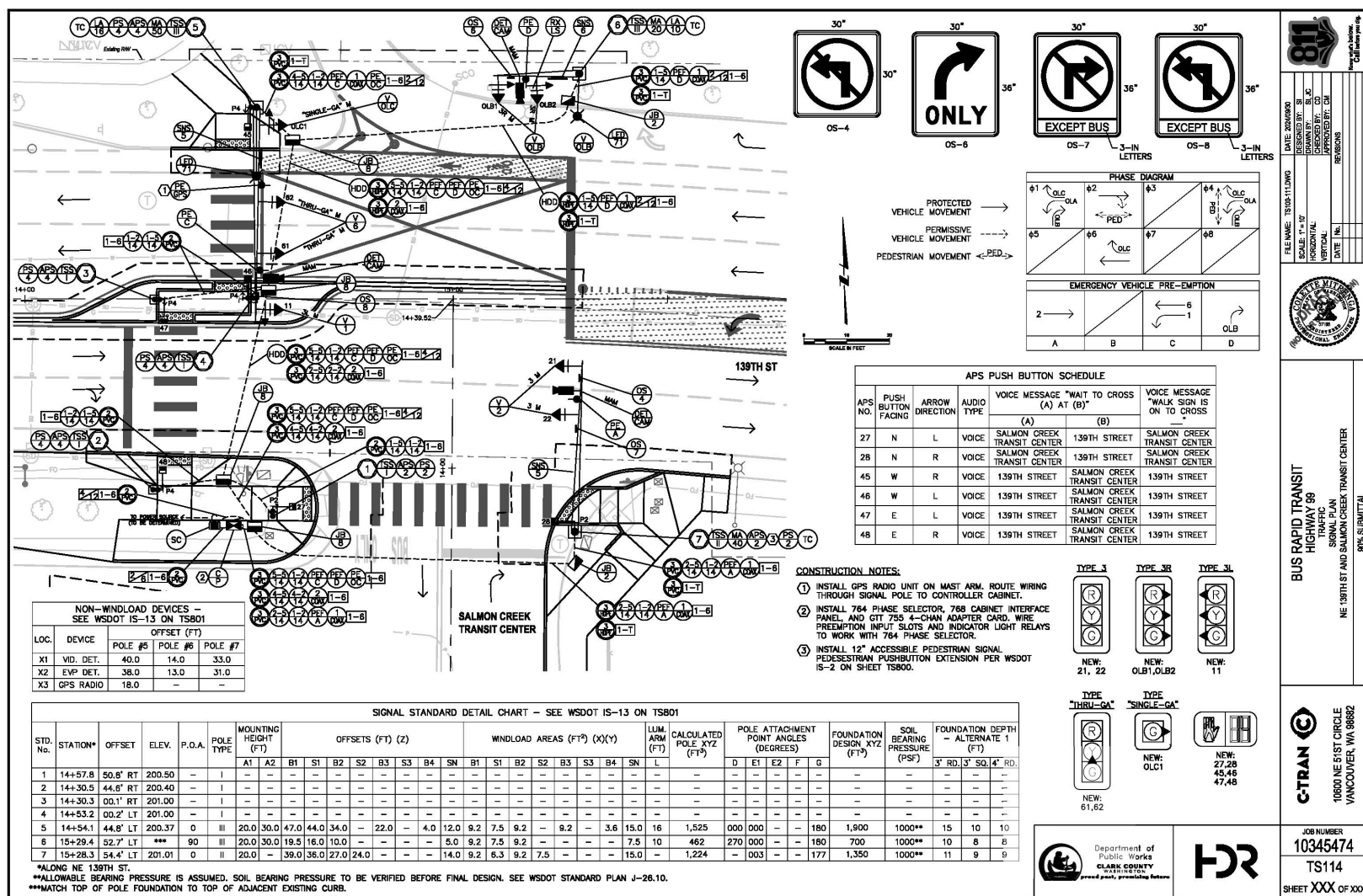


FIGURE 3. PROPOSED PHASE DIAGRAM



JUSTIFICATION FOR SIGNAL

With the Highway 99 BRT Project, C-TRAN will be adding 60-foot articulated buses compared to the standard 40-foot buses operating at this location today. Without the addition of the signal, the access requires 60-foot articulated buses to make an unprotected westbound left turn across two eastbound travel lanes from NE 139th Street to the Salmon Creek Transit Center. C-TRAN has a strong preference not to operate permitted left turn movements for the 60-foot buses, across multiple opposing lanes, for the safety of the operator and passengers.

C-TRAN prefers protected movements due to the 60-foot buses requiring a larger gap in traffic over the 40-foot buses and not wanting to put additional burden on the operator to estimate and select a safe gap for a larger fleet bus. The need to wait for a safe gap in opposing or cross traffic can also contribute negatively to transit travel time reliability. A traffic signal at this location would mitigate the safety and efficiency issues associated with BRT operations to provide safe ingress/egress to the Salmon Creek Transit Center.

Posted speeds along NE 139th Avenue are 35mph. The 95th percentile and 75th percentile speeds based on INRIX data collected from September through October 2024 indicate there is not a systemic speeding issue along the NE 139th Street frontage of the Salmon Creek Transit Center in both the eastbound and westbound direction. Table 1 shows the eastbound and westbound 95th and 75th percentile speeds for every hour averaged for a 24-hour period. Unprotected left turn movements onto higher speed facilities of 35 mph and greater pose a safety concern for C-TRAN.

TABLE 1. INRIX SPEED DATA

TIME PERIOD	95TH PERCENTILE SPEED		75TH PERCENTILE SPEED	
	EASTBOUND	WESTBOUND	EASTBOUND	WESTBOUND
12:00 AM	38	39	36	36
1:00 AM	37	39	34	36
2:00 AM	38	36	27	34
3:00 AM	40	36	25	34
4:00 AM	42	38	31	34
5:00 AM	39	38	34	35
6:00 AM	38	37	34	35
7:00 AM	36	36	33	34
8:00 AM	34	35	31	31
9:00 AM	34	34	30	30
10:00 AM	34	33	31	30
11:00 AM	32	33	29	30
12:00 PM	32	32	29	29
1:00 PM	31	33	29	30
2:00 PM	32	32	29	30
3:00 PM	31	32	29	29
4:00 PM	33	32	30	29
5:00 PM	32	32	30	29
6:00 PM	34	34	30	30
7:00 PM	35	35	32	32
8:00 PM	36	36	33	33
9:00 PM	38	37	35	34

TIME PERIOD	95TH PERCENTILE SPEED		75TH PERCENTILE SPEED	
	EASTBOUND	WESTBOUND	EASTBOUND	WESTBOUND
10:00 PM	39	39	36	36
11:00 PM	43	38	38	35

An additional need for a traffic signal at this location is to provide a protected pedestrian crossing between the transit center and the Skyview Station Development to the north. The proposed transit center design locates the BRT station platforms near the eastern edge of the transit center. The Skyview Development adds significant new retail and commercial land use that has a walking corridor along the businesses and a sidewalk connection to NE 139th Street directly opposite of the Salmon Creek Transit Center. The added jobs, attractions and site plan layout create a desire-line to and from the transit center. In addition, the north sidewalk along NE 139th Street terminates at the Skyview Station east driveway (opposite of the transit center driveway) and there is no continued or planned pedestrian facility on the northside of NE 139th Street between the east Skyview Station driveway and NE 20th Avenue 0.5 mi to the east. As there is no pedestrian wayfinding signage, eastbound pedestrians on the north side of NE 139th Street would have to double back over 1,000 feet to cross at the NE 10th Avenue signal. This substantial out of direction travel for pedestrians may lead to unsafe behaviors, such as jaywalking. The addition of a west leg crosswalk at the proposed Salmon Creek Transit Center signal provides a natural crossing location serving both the pedestrian desire line between the transit center and the development, and intuitive continuity of the pedestrian network along the NE 139th Street corridor.

SALMON CREEK PARK AND RIDE ENTRANCE AT NE 136TH STREET

The C-TRAN Hwy 99 BRT project will add 8 BRT buses per peak hour (4 inbound, 4 outbound) to the 9 local and express buses serving Salmon Creek Transit Center. The transit Center will have an anticipated 10 additional trips to the site per day: 4 security trips, 4 maintenance trips, and 2 bus cleaner trips. These trips are spread throughout the day and may or may not occur during the peak hour. The transit center improvements also remove 97 normal parking stalls, 5 motorcycle stalls, and 1 ADA stall. The existing transit center has a parking capacity of 462 normal stalls. With the reduction of 103 total stalls, the maximum trip generation potential of the site is reduced by up to 103 AM in-trips and 103 PM out-trips, assuming a worst-case of all trips arriving and departing during the peak hours. This results in a net reduction of trips generated by the Salmon Creek Transit Center. The reduction in total parking capacity still provides sufficient overall parking capacity with 365 normal stalls as the park and ride utilization averaged between 54 and 97 vehicles from January through August, before some service was removed from the Park & Ride in September 2023.

This project is reducing volumes at the NE 136th Street / Salmon Creek Park and Ride intersection. Inbound buses will travel through this intersection, but outbound buses will use the NE 139th Street intersection. Despite adding buses to the NE 136th Street intersection, volumes will be reduced because the max parking potential will be reduced and therefore max trip generation is reduced.

NE 136th Street is a low volume local roadway that dead ends at a hotel and veterinary hospital with a 25 mile per hour posted speed limit. No significant impacts are anticipated along this roadway or at the NE 136th Street / Salmon Creek Park and Ride intersection, so a formal traffic analysis at this location is not warranted.

OPERATIONS

The project includes a future year 2040 weekday PM peak period Vissim microsimulation model to analyze the LPA. The model includes the proposed signal at NE 139th Street / Salmon Creek Transit Center and assumes the signal operated with a 55 second cycle length as a half cycle to the 110 sec cycle length of the adjacent NE 10th Avenue signal to reduce transit travel time and improve schedule reliability. A conservative estimate of 20 pedestrians per hour were assumed to use the crosswalk at the proposed signal. The total pedestrian crossing time is shorter at this signal (crossing five lanes) as compared to the NE 10th Avenue signal (crossing six lanes), resulting in less total disruption to westbound green time for pedestrian crossing activity. Figure 5 shows the 2040 PM peak period 15-minute congestion plot from Vissim simulation representing the following queue conditions:

- Dark Green = Free flow, no delay (delay less than 5 percent of travel time)
- Light green = Slight slowing (5-20 percent)
- Yellow = Increased slowing, but not yet stop and go (20-40 percent)
- Orange = Furthest extend of stop and go queues, rough approximation of 95th percentile queue (40-60 percentile)
- Red = Fluctuates between low-speed flow and stopped queue (60-80 percentile)
- Dark Red = Stop and go queue during the entire 15-minutes peak interval (delay greater than 80 percentile of travel time)



FIGURE 5: 15-MINUTE CONGESTION PLOT

As shown in the congestion plot, westbound remains clear of the interchange area with the average queue of 90 feet and the 95th percentile queue of 205 feet. The eastbound queues do not extend back to the 10th Avenue signal with the average queue of 95 feet and the 95th percentile queue of 210 feet. These 2040 PM peak hour 95th percentile queue lengths are well outside the available queue storage of 1600 feet westbound and 375 feet eastbound.

The new signal has minimal impact on the signal progression along the corridor given the relatively low pedestrian crossing demand and amount of transit phase calls. Even during the 2040 peak hour, the controller may rest in green east- and westbound for several consecutive cycle lengths. The corridor progression can further be optimized by running full-cycle operations, however this will result in transit travel time reliability impacts.

SAFETY

In the past six years (2017 – 2022) there have been a total of nine crashes along the NE 139th Street roadway segment. Six of the crashes happened at the NE 10th Avenue / NE 139th Street intersection, two crashes happened at the NE 16th Avenue / NE 139th Street intersection, and one crash happened at the Salmon Creek Transit Center driveway / NE 139th Street intersection. The severity of these crashes include no apparent injury, possibly injury, and suspected minor injury. There have been no fatal or serious injury crashes along this segment. If proper safety treatments are applied and sight distances are accurately determined, a signal could mitigate any potential safety issues in the future.

The one crash that occurred at the Salmon Creek Transit Center driveway / NE 139th Street intersection occurred on August 19, 2019 and resulted in a possible injury. A driver making a northbound left turn from the driveway hit a vehicle traveling eastbound through along NE 139th Street. This movement will be prohibited with the proposed improvements.

The Federal Highway Administration¹ provides a formula to determine a crash rate for roadway departure crashes on a roadway. Using volumes from the adjacent intersection at NE 10th Avenue / NE 139th Street, the crash rate is calculated to be 99.3 crashes per 100 million vehicle-miles of travel.

CONCLUSION

A traffic signal and median at the Salmon Creek Transit Center at NE 139th Street is recommended to be included as a part of the C-TRAN Highway 99 BRT project. Installation of the signal would facilitate the ingress and egress to the Salmon Creek Transit Center for the westbound left and northbound right movement for the BRT vehicles and provide safe and reliable access for longer buses. It would also provide a protected pedestrian crossing between the transit center and the Skyview Station Development to the north.

As discussed above, this signal can operate within the 2040 PM peak conditions without impacting traffic operations. It is anticipated that 4 BRT buses, 13 local service buses, and up to 4 C-VAN/other vehicles vehicle per hour will go to/from the proposed transit center. Despite adding buses to the NE 136th Street intersection, this project is reducing volumes at the NE 136th Street / Salmon Creek Park and Ride intersection because the max parking potential will be reduced and therefore max trip generation is reduced.

¹ Federal Highway Administration- Roadway Departure Safety: A Manual for Local Rural Road Owners
https://safety.fhwa.dot.gov/local_rural/training/fhwasa1109/app_c.cfm

APPENDIX

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SECTION 1: TRAFFIC COUNT

SECTION 2: SPEED DATA

SECTION 3: CRASH DATA

SECTION 1: TRAFFIC COUNT



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

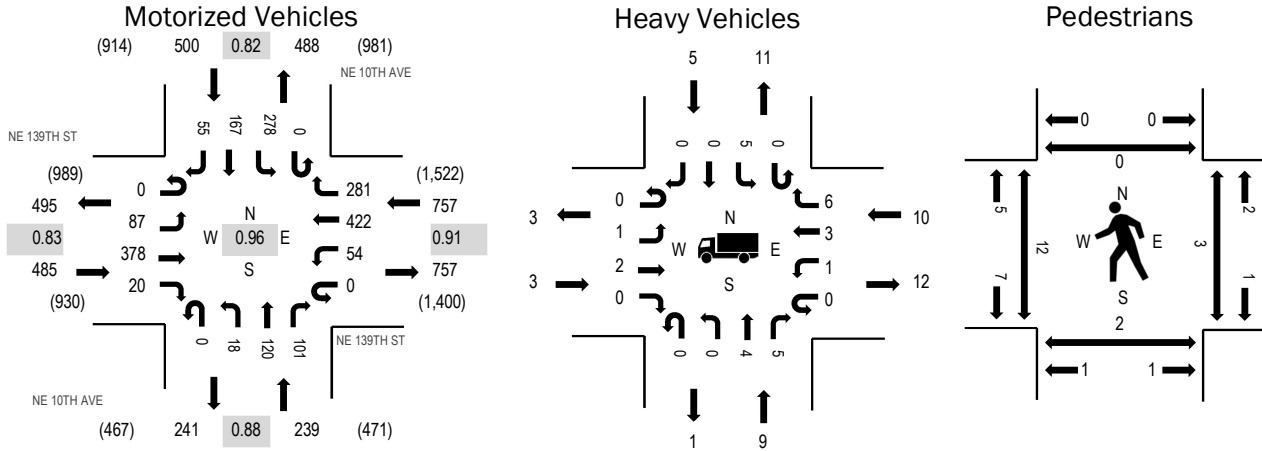
Location: 1 NE 10TH AVE & NE 139TH ST PM

Date: Wednesday, June 15, 2022

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:40 PM - 04:55 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.6%	0.83
WB	1.3%	0.91
NB	3.8%	0.88
SB	1.0%	0.82
All	1.4%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	NE 139TH ST Eastbound				NE 139TH ST Westbound				NE 10TH AVE Northbound				NE 10TH AVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	10	30	0	0	7	33	32	0	2	12	7	0	17	13	10	173	1,911
4:05 PM	0	1	26	1	0	3	34	15	0	2	6	9	0	23	16	6	142	1,893
4:10 PM	0	6	30	4	0	6	31	21	0	1	6	4	0	14	11	5	139	1,923
4:15 PM	1	6	36	5	0	8	29	29	0	2	12	9	0	11	6	11	165	1,961
4:20 PM	0	7	29	2	0	6	31	24	0	2	6	10	0	20	16	5	158	1,941
4:25 PM	0	11	28	3	0	3	32	24	0	2	5	9	0	15	10	9	151	1,960
4:30 PM	0	5	37	1	0	5	38	24	0	1	6	8	0	17	17	9	168	1,981
4:35 PM	0	6	29	2	0	6	33	24	0	1	4	8	0	30	10	5	158	1,980
4:40 PM	0	5	28	2	0	10	32	31	0	4	16	4	0	12	11	10	165	1,973
4:45 PM	0	11	31	1	0	3	27	21	0	1	9	10	0	32	15	3	164	1,971
4:50 PM	0	10	41	1	0	5	53	26	0	1	6	11	0	23	8	3	188	1,970
4:55 PM	0	5	16	1	0	1	30	19	0	4	13	9	0	21	16	5	140	1,933
5:00 PM	0	8	27	2	0	1	19	18	0	0	12	11	0	31	25	1	155	1,926
5:05 PM	0	8	38	1	0	5	27	24	0	0	9	9	0	26	22	3	172	
5:10 PM	0	6	29	1	0	3	37	26	0	2	10	14	0	30	16	3	177	
5:15 PM	0	7	27	0	0	2	41	17	0	1	7	6	0	26	9	2	145	
5:20 PM	0	9	30	3	0	6	46	27	0	2	12	6	0	16	11	9	177	
5:25 PM	0	7	45	5	0	7	39	24	0	1	16	5	0	14	7	2	172	
5:30 PM	0	8	38	4	0	4	31	28	0	0	9	9	0	15	18	3	167	
5:35 PM	0	4	26	4	0	6	37	20	0	2	9	8	0	17	10	8	151	
5:40 PM	0	9	27	1	0	5	40	25	0	2	19	5	0	23	4	3	163	
5:45 PM	0	7	20	1	0	5	45	32	0	2	12	14	0	11	10	4	163	
5:50 PM	0	9	20	2	0	4	25	27	0	2	9	7	0	32	11	3	151	
5:55 PM	0	6	22	1	0	6	34	23	0	2	4	11	0	11	10	3	133	
Count Total	1	171	710	48	0	117	824	581	0	39	229	203	0	487	302	125	3,837	
Peak Hour	0	87	378	20	0	54	422	281	0	18	120	101	0	278	167	55	1,981	

SECTION 2: SPEED DATA

Speed (mph) for 1 TMC segment

Eastbound					
	September 2024 through October 2024	September 2024 through October 2024 - 5%	September 2024 through October 2024 - 95%	September 2024 through October 2024 - 25%	September 2024 through October 2024 - 75%
12:00 AM	29.9	24	39	25	35
12:15 AM	29.8	24	39	25	36
12:30 AM	29.2	24	38	25	36
12:45 AM	28.6	24	37	25	35
1:00 AM	27.7	24	36	25	34
1:15 AM	27.5	24	36	25	32
1:30 AM	28.2	24	37	25	34
1:45 AM	27.8	24	38	25	34
2:00 AM	27.6	24	38	25	33
2:15 AM	26.7	24	37	25	26
2:30 AM	26.5	24	39	25	25
2:45 AM	26.3	24	39	25	25
3:00 AM	26.7	24	40	25	25
3:15 AM	26.8	24	39	25	25
3:30 AM	26.6	24	39	25	25
3:45 AM	26.5	24	40	25	25
4:00 AM	26.3	24	39	25	25
4:15 AM	27	24	42	25	28
4:30 AM	28.7	24	44	25	26
4:45 AM	29.5	25	43	25	36
5:00 AM	31.6	27	41	29	35
5:15 AM	30.7	25	37	29	33
5:30 AM	30.6	24	37	29	34
5:45 AM	31	25	39	29	34
6:00 AM	30.8	25	38	29	34
6:15 AM	30.9	26	39	29	34
6:30 AM	30.7	25	38	29	33
6:45 AM	30.7	25	36	29	33
7:00 AM	30.7	26	36	29	34
7:15 AM	30.2	25	36	29	33
7:30 AM	29.9	25	37	28	32
7:45 AM	29.3	25	34	28	31
8:00 AM	29.3	25	34	28	31
8:15 AM	29	24	34	27	32
8:30 AM	28	23	34	26	30
8:45 AM	28.1	24	34	26	30
9:00 AM	29.1	25	35	27	31
9:15 AM	28.4	24	34	27	30
9:30 AM	28.3	24	34	27	30
9:45 AM	28.2	24	33	27	30
10:00 AM	28.7	24	34	27	31
10:15 AM	28.5	24	34	27	31
10:30 AM	28.5	24	34	27	31
10:45 AM	28.5	24	33	27	30
11:00 AM	27.9	24	33	26	30
11:15 AM	27	22	32	25	29
11:30 AM	26.8	23	32	25	29
11:45 AM	27	24	32	25	29
12:00 PM	26.9	22	31	25	29
12:15 PM	26.7	22	32	25	29
12:30 PM	27	23	32	25	29
12:45 PM	27.2	22	32	26	30
1:00 PM	26.8	22	31	25	29
1:15 PM	26.7	22	31	25	29
1:30 PM	26.8	22	32	25	29
1:45 PM	26.5	22	31	25	29
2:00 PM	26.3	22	32	25	29
2:15 PM	26.5	22	31	25	29
2:30 PM	26.5	21	32	25	29
2:45 PM	26.8	23	32	25	29
3:00 PM	26.4	22	31	25	29
3:15 PM	26.2	22	32	24	29
3:30 PM	25.6	21	30	24	28
3:45 PM	25.7	21	31	24	29
4:00 PM	26.5	22	31	25	29
4:15 PM	27.1	23	32	25	30
4:30 PM	27.7	23	34	26	30
4:45 PM	27.4	23	33	25	30
5:00 PM	27	23	33	25	30
5:15 PM	26.8	22	32	25	29
5:30 PM	27.3	24	32	25	29
5:45 PM	27.6	24	32	26	30
6:00 PM	28.2	24	34	27	30
6:15 PM	27.8	23	34	26	30
6:30 PM	27.7	23	34	26	30
6:45 PM	28.4	24	34	27	30
7:00 PM	28.8	24	34	27	30
7:15 PM	28.9	24	34	27	31
7:30 PM	30.1	25	36	28	32
7:45 PM	30.3	24	37	29	33
8:00 PM	30	26	37	29	32
8:15 PM	30.1	25	36	29	32
8:30 PM	30.8	24	36	29	34
8:45 PM	31.3	26	36	29	33
9:00 PM	31.7	27	37	30	34
9:15 PM	32.4	26	39	30	36
9:30 PM	32.5	26	38	31	35
9:45 PM	33.1	28	38	31	35
10:00 PM	32.9	25	39	31	36
10:15 PM	32.3	25	39	30	26
10:30 PM	32.2	25	39	30	26
10:45 PM	31.8	25	39	29	35
11:00 PM	33.5	25	44	30	39
11:15 PM	34.3	25	45	31	40
11:30 PM	33.2	25	42	30	38
11:45 PM	30.7	24	39	25	35

Speed (mph) for 1 TMC segment

Westbound					
	September 2024 through October 2024	September 2024 through October 2024 - 5%	September 2024 through October 2024 - 95%	September 2024 through October 2024 - 25%	September 2024 through October 2024 - 75%
12:00 AM	31	25	39	27	35
12:15 AM	31.1	25	39	27	35
12:30 AM	30.7	25	39	25	36
12:45 AM	30.2	25	40	25	36
1:00 AM	29.2	25	39	25	36
1:15 AM	29.3	25	39	25	36
1:30 AM	29.1	25	38	25	37
1:45 AM	29.4	25	38	25	36
2:00 AM	28.8	25	37	25	35
2:15 AM	27.9	25	35	25	32
2:30 AM	27.6	24	36	25	32
2:45 AM	30.1	24	37	25	35
3:00 AM	31.1	25	37	29	35
3:15 AM	30.9	25	36	29	34
3:30 AM	28.2	23	35	25	34
3:45 AM	27	23	35	25	32
4:00 AM	27.2	23	35	25	32
4:15 AM	28.7	23	38	25	34
4:30 AM	29.9	23	39	25	35
4:45 AM	30.3	23	39	25	35
5:00 AM	31.5	27	38	28	34
5:15 AM	32	27	37	29	35
5:30 AM	32.3	27	37	31	34
5:45 AM	33	28	38	32	35
6:00 AM	32.9	27	37	31	36
6:15 AM	31.6	27	37	30	34
6:30 AM	31.2	27	37	29	34
6:45 AM	31.4	27	36	30	34
7:00 AM	31.6	27	36	30	34
7:15 AM	31.1	26	37	29	34
7:30 AM	30.1	24	36	27	34
7:45 AM	30.1	25	36	28	33
8:00 AM	29.5	24	35	28	32
8:15 AM	27.8	22	35	26	31
8:30 AM	27.9	22	35	26	30
8:45 AM	27.4	23	34	25	30
9:00 AM	28.2	24	34	26	30
9:15 AM	28.5	24	34	27	31
9:30 AM	28.4	24	34	27	30
9:45 AM	28.1	24	32	27	30
10:00 AM	28	24	33	26	30
10:15 AM	28.2	24	32	27	30
10:30 AM	28.1	24	33	27	30
10:45 AM	27.7	24	33	26	30
11:00 AM	27.7	23	34	26	30
11:15 AM	27.7	24	33	26	30
11:30 AM	27.5	23	32	26	30
11:45 AM	27	23	32	25	29
12:00 PM	26.9	23	32	25	29
12:15 PM	27.4	23	33	26	29
12:30 PM	27.8	24	33	26	30
12:45 PM	26.9	23	30	25	29
1:00 PM	27	23	32	25	29
1:15 PM	27.5	23	34	26	30
1:30 PM	27.8	24	32	26	30
1:45 PM	27.4	23	32	26	30
2:00 PM	26.9	22	32	25	29
2:15 PM	26.6	22	31	25	29
2:30 PM	27.3	23	32	26	30
2:45 PM	27.2	23	32	25	30
3:00 PM	26.4	22	31	25	29
3:15 PM	26.1	22	32	24	29
3:30 PM	26.5	21	32	25	29
3:45 PM	26.5	22	32	25	29
4:00 PM	26.9	22	32	25	29
4:15 PM	27.2	23	32	26	29
4:30 PM	27.6	24	32	26	29
4:45 PM	27.4	24	32	26	29
5:00 PM	27.2	24	32	25	29
5:15 PM	26.6	23	32	25	29
5:30 PM	27	24	32	26	28
5:45 PM	27.1	24	32	26	29
6:00 PM	27.9	24	34	26	30
6:15 PM	28.3	24	34	27	30
6:30 PM	28.3	24	35	27	30
6:45 PM	28.2	24	34	27	30
7:00 PM	28.8	24	35	27	31
7:15 PM	29	25	34	28	31
7:30 PM	29.4	25	34	28	32
7:45 PM	29.6	26	35	28	32
8:00 PM	29.9	26	36	29	32
8:15 PM	29.7	26	36	29	32
8:30 PM	30.4	26	36	29	32
8:45 PM	31.3	27	36	30	34
9:00 PM	31.7	28	37	30	34
9:15 PM	31.6	28	36	30	34
9:30 PM	31.3	26	36	30	34
9:45 PM	32.1	27	37	31	34
10:00 PM	32.6	27	39	32	35
10:15 PM	32.8	28	39	31	35
10:30 PM	33.5	29	39	32	36
10:45 PM	33.2	25	39	32	36
11:00 PM	32	25	39	30	35
11:15 PM	31.7	25	39	29	35
11:30 PM	31.2	25	38	29	35
11:45 PM	31.2	25	37	28	35

SECTION 3: CRASH DATA

[illegible]