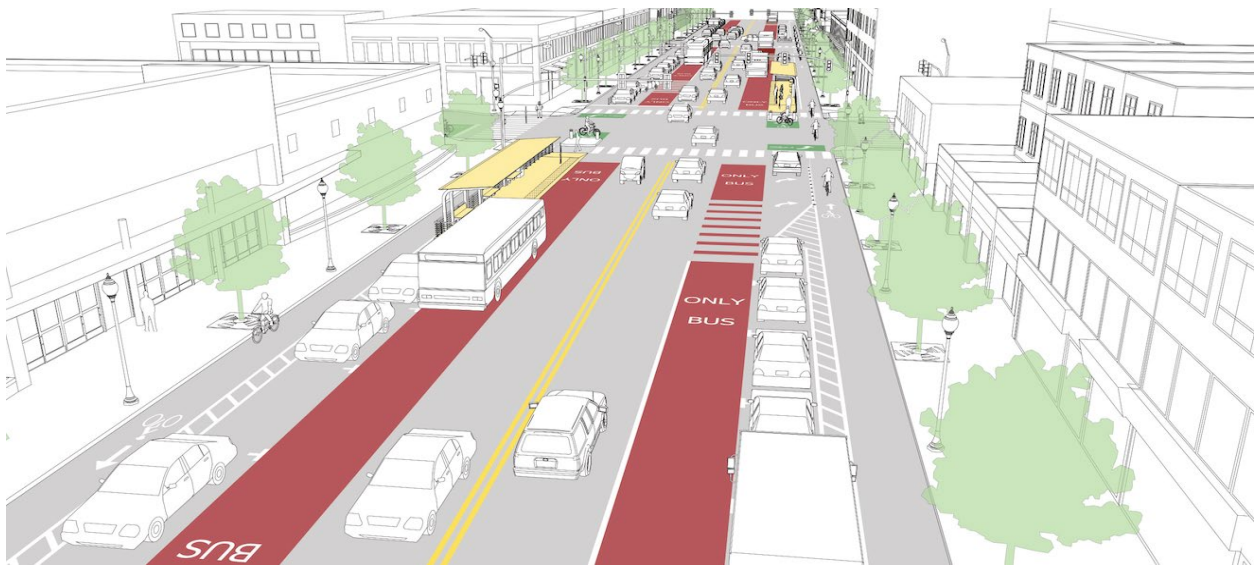

2021 CONCURRENCY REPORT

An Annual Report on the Level-of-Service (LOS) of the County's Arterial Road Network from January 1, 2021 to December 31, 2021



Prepared by the Transportation and Environmental Services (TES)
Division of the Department of Public Works

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Executive Summary

This Concurrency Report details the Level-of-Service (LOS) of Snohomish County’s arterial road system. This report, where possible and known, identifies strategies that may be implemented by either the Department of Public Works (DPW) or another jurisdiction to remedy the LOS deficiencies.

The impacts of the COVID-19 pandemic continue to be seen in traffic counts and patterns in many areas of the county. For concurrency determinations in 2021, DPW continued to use pre-pandemic traffic data for most arterial units. Existing and forecast traffic data will be updated in future reports as traffic volumes begin to normalize over time or trends in traffic data indicate a ‘new normal’ on the road network.

Summary of Arterial Units at Risk of Falling into Arrears, in Arrears or at Ultimate Capacity

Status of Arterial Units	2020	2021
Arterial Units at Risk of Falling into Arrears	12	12
Arterial Units in Arrears	0	0
Arterial Units at Ultimate Capacity	3	3

The number of arterial units in arrears has remained at zero since 2011 and the number of arterial units at ultimate capacity has remained at three since 2007.

List of Acronyms Used in This Report

ACP	Annual Construction Plan	R	Rural
AU	Arterial Unit	SCC	Snohomish County Code
AUAR	Arterial Unit at Risk of Falling into Arrears	SR	State Route (State highway under the jurisdiction of the WSDOT)
AUIA	Arterial Unit in Arrears	TIP	Six-Year Transportation Improvement Program
AUUC	Arterial Unit at Ultimate Capacity	TSA	Transportation Service Area
DPW	Department of Public Works	U	Urban
IRC	Inadequate Road Condition	W	Widening of an Existing Arterial Road
IS	Intersection Improvements	WSDOT	Washington State Department of Transportation
LOS	Level-of-Service		
N/R	Not Required		
N	New Arterial Road Alignment		

Review of the Concurrency Management System

Consistent with the requirements of the Growth Management Act (GMA), the concurrency requirements of Snohomish County Code (SCC) Chapter 30.66B, and the associated Department of Public Works' administrative rules, the County is required to determine if capacity exists (or will likely exist within six years) when a proposed development adds its new trips to the road system. This concurrency determination includes two important considerations:

- 1) An estimate of existing traffic volumes and all new traffic that will be added to the road system from other developments that have been deemed concurrent (pipeline trips), and;
- 2) The additional capacity on the road system that will result from any system improvements which will be constructed and open to the public within the next six years.

Determining Level-of-Service (LOS)

Snohomish County uses a four-tiered approach to determining the LOS on the road system.

- 1) **Screening:** Current peak-hour traffic counts are compared with estimated capacities for each arterial unit and average daily traffic (ADT) counts are compared with the thresholds adopted in Chapter 30.66B SCC.
- 2) **Monitoring:** Monitoring consists of more frequent traffic counts and analysis of the traffic conditions.
- 3) **Operational Analysis:** Operational analysis consists of travel-time studies and/or results from traffic models to determine if the LOS on an arterial unit is currently operating below the adopted standard.
- 4) **Future Level-of-Service Forecast:** A future LOS forecast is used to determine if the LOS within six years is likely to be operating below the adopted standard with the addition of new trips expected to be added to the road system by developments already deemed concurrent (pipeline trips).

A review of Snohomish County's concurrency management system is available on the County's [web site](#). The web site includes previous concurrency reports and many other documents related to the County's traffic mitigation and concurrency regulations, including the DPW Rules for concurrency and road impact mitigation requirements of SCC 30.66B.

LOS Designations and Determination Methods

URBAN ¹	DETERMINATION METHOD		RURAL ²
A	Screening	Screening	A
B		Monitoring	B
C		Operational Analysis	C
D	Monitoring	Fails	D
E	Operational Analysis		
F	Fails		

¹ A lower travel speed may be used in conformance with SCC 30.66B.102.

² The level of service for rural arterials designated in the comprehensive plan as carrying urban traffic shall be evaluated utilizing the level of service standard for urban arterials.

Arterial Unit Status Definitions

Arterial Units at Risk of Falling into Arrears (AUAR)

Arterial units are considered to be at risk of falling into arrears when they are close to being deficient, i.e., 1-2 mph above LOS F for urban roads or LOS D for rural roads. For arterial units meeting these criteria, DPW utilizes the Operational Analysis method to determine the existing and future (forecast) LOS and monitors the units with travel time and delay studies conducted on an annual basis (see Determining Level-of-Service (LOS) above).

Arterial Units in Arrears (AUIA)

Snohomish County Code (SCC) defines an Arterial Unit in Arrears (AUIA) as any arterial unit operating, or within six years is forecast to operate, below the adopted LOS standard unless a financial commitment (or strategies) is in place for improvements to remedy the deficiency within six years. The LOS for the urban arterials is LOS F and for the rural arterials is LOS D. DPW utilizes the Operational Analysis method to determine the existing and future (forecast) LOS and monitors the units with travel time and delay studies conducted on an annual basis.

Arterial Units at Ultimate Capacity (AUUC)

SCC 30.66B.110(1) states, “When the county council determines that excessive expenditure of public funds is not warranted for the purpose of making further improvements on certain arterial units, the county council may designate, by motion, following a public hearing, such arterial unit as being at ultimate capacity.”

Occasionally, the contributing factors associated with an arterial unit considered to be “At Risk” can be attributed to another jurisdiction’s roadway. When this is the case, the solution to improve the LOS is entirely under the control of the other jurisdiction. For this type of situation, the County has little, if any, control over the solution, and if the other jurisdiction will not agree to the County’s solution or if the interaction between the two roads has been optimized to the maximum extent, the County is forced to accept the existing condition. When a county arterial is experiencing a decrease in LOS and the source of which is attributable to another agency’s transportation facility, the County Council may designate the arterial unit at ultimate capacity when the provisions of SCC 30.66B.110(2)(c) are met.

Concurrency Report

This concurrency report covers the period from January 1st through December 31st of the report year and details the Level-of-Service (LOS) of Snohomish County's arterial road network. The report, where possible and known, identifies strategies that may be implemented by either the Department of Public Works (DPW) or another jurisdiction to remedy LOS deficiencies.

Many county arterials continue to operate at volumes below pre-COVID-19 levels. For 2021 concurrency determinations, the county used 2019 data for arterial units where existing traffic volumes remained below 2019 volumes. DPW continues to monitor system performance and LOS data used for concurrency will be updated as traffic volumes begin to normalize over time.

Number of Arterial Units

Snohomish County currently has 268 urban and rural arterial units. Of that total, 229, or 85.4%, have not reached the ADT thresholds established in SCC 30.66B.101 that trigger the requirement for screening and monitoring and are operating at or above LOS D for urban arterials and LOS C for rural arterials. See Table 1 Summary of Level-of-Service (LOS) Status on page 17 below for additional information.

Arterial Units at Ultimate Capacity

As of December 31st of the report year, the County Council has designated the following arterial units at ultimate capacity:

Snohomish-Woodinville Road in TSA E (AU# 211)

This urban arterial unit is in TSA E and was designated at ultimate capacity in 1997.

164th Street SW/SE east of Interstate 5 (AU# 218)

This urban arterial unit is in TSA D and was designated at ultimate capacity in 2007.

164th Street SW west of Interstate 5 (AU# 219)

This urban arterial unit is in TSA D and was designated at ultimate capacity in 2007.

Arterial Units in Arrears

As of December 31st of the report year, there are no arterial units in arrears.

List of Arterial Units at Risk of Falling into Arrears

The following is a list of those arterial units considered to be at risk of falling into arrears. The arterial units identified below are divided into urban and rural sections. Each section is then listed in descending order by TSA, then by the AU number. See the definition for an "Arterial Unit at Risk of Falling into Arrears (AUAR)" on page 6.

Urban / Rural	TSA	AU #	Arterial Name and Limits
U	D	204	35 th Ave SE from 168 th St SE to Seattle Hill Road
U	D	225	148 th / Jefferson Way / 150 th St SW / Madison Way from SR 99 to Ash Way
U	D	228	Airport Road / 128 th St SW from SR 99 to I-5 SB On & Off Ramps
U	D	293	Gibson Road from SR 99 to 128 th St SW
U	D	304	Larch Way from 164 th St SW to 178 th St SW
U	D	334	North Rd from Jonathan Rd to 164 th St SW
U	D / E	207 / 336	35 th Ave SE from 188 th St SE to 168 th St SE
U	D / F	217	North Road from SR 524 to 176 th PI SW
R	E	354	Paradise Lake Road from SR 522 to King County Line
U	E	471	Yew Way from Broadway Ave to SR 524
U	E / F	337 / 420	York Road / 35 th Ave SE from SR 524 to 188 th St SE
U	F	278	Poplar Way from Lynnwood C/L to Brier C/L

Breakdown of the Analysis of Arterial Units at Risk of Falling into Arrears

The following is a comprehensive analysis of those arterial units considered to be at risk of falling into arrears. The analysis identifies the AU number, AU name and limits, TSA and date the last travel time and or forecasts were performed, and the existing and forecast LOS with travel speeds. The at risk arterial units identified below are listed in descending order by TSA, then by the AU number. At risk arterial units identified with two numbers (e.g., 287/415) are so identified because they have a TSA boundary dividing the AU and are counted as two arterial units when determining the total number of arterial units. In some special cases two arterial units are listed with two numbers because one of the arterials is too short to accurately measure LOS and must be combined with another arterial.

The following is an example of the tables used below for each arterial to identify the existing and forecast LOS.

Existing LOS				Direction	Forecast LOS			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH	LOS	MPH	LOS	MPH	
B	29.23	E	13.49	NB/WB	B	29.20	E	13.50
D	21.67	E	16.63	SB/EB	D	21.60	E	16.60

This side represents the existing AM & PM LOS and travel speed on the AU based on the most current travel time study.	Direction of travel	This side represents the forecast AM & PM LOS and travel speed on the AU determined with the most current travel time study and a future LOS forecast which looks out six years and is based on the existing LOS, pipeline trips, and any programed and funded road improvement project(s).
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Analysis of Arterial Units at Risk of Falling into Arrears

TSAs A, B, and C

There are no arterials in TSAs A, B or C that are at risk of falling into arrears.

TSA D

(AU# 204) 35th Ave SE from 168th St SE to Seattle Hill Road

North Section of the 35th Ave SE Corridor (see page 16 for the entire 35th Ave SE Corridor analysis):

A travel time study was performed for this urban AU on September 17, 2019 for the AM and PM and a subsequent forecast analysis was completed. The travel time study and forecast analysis indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours to be:

Existing LOS				Direction	Forecast LOS (With Projects Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH	LOS	MPH	LOS	MPH	
B	29.00	F	12.40	NB	B	29.30	F	11.90
B	31.00	B	30.70	SB	B	30.90	B	30.70

This arterial unit is the northern leg of what is referred to as the 35th Ave SE Corridor. The travel time study was performed after the county completed construction of the 35th Ave SE Phase I project in 2019. This portion of the corridor was widened to full three-lane urban standards which include two travel lanes plus a center turn lane, bike lanes, curb, planter, and sidewalks on both sides.

The County is also designing a project for 43rd Ave SE (ACP/TIP project E.59) that will provide a through connection from 180th St SE south to SR 524, helping alleviate congestion on 35th. The project is programed in the adopted 2022 TIP for engineering (PE) and right-of-way (RW) in 2022 and for construction to start in 2023, pending available funding.

These projects should help alleviate some of the LOS issues on the 35th Ave corridor and to measure the effectiveness of the projects, DPW will perform additional travel time studies after the projects have been completed and traffic has adjusted to the new construction. Given the extent of recent improvements to this AU and the impracticality of further widening, this arterial unit was designated at ultimate capacity by county council in 2022. The ultimate capacity designation of the 35th Ave AUs will be reflected in the 2022 concurrency report.

(AU# 225) 148th St SW / Jefferson Way / 150th St SW / Madison Way from SR 99 to Ash Way

A travel time study was performed for this urban AU on March 26, 2019 for the AM and PM and a subsequent forecast analysis was completed. The travel time study and forecast indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours to be:

Existing LOS					Forecast LOS (Without Projects Referenced Below)			
AM		PM		Direction	AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
C	22.44	D	20.80	EB	D	19.80	F	12.00
D	19.79	D	17.61	WB	D	17.10	E	13.70

The major contributing factor for the forecast LOS F in the PM EB direction is at the east end of the AU at Ash Way with the EB traffic queuing to make a left turn at the intersection of Madison Way / Ash Way.

The major contributing factor for the forecast LOS E in the PM WB direction is at the west end of the AU at the intersection of 35th Ave W and to a lesser extent the intersection of SR 99. At the 35th Ave W intersection the main conflict is WB vehicles making left and right turns onto 35th Ave W. At the SR 99 intersection the main conflict is the amount of green time the state assigns to the traffic on SR 99, which results in a delay for the WB traffic on 148th St SW and given the short distance between the 35th Ave W and SR 99 intersections, causes a queuing of traffic at SR 99 which may back up to the 35th Ave W intersection and cause delays for the vehicles turning left or right on to 35th Ave W.

This is the second time this AU has been identified with a forecast LOS of F which may be an anomaly. Given the significance of the F LOS, DPW will perform two additional travel time studies at different times of the year to confirm the F LOS. The adopted ACP/TIP includes funding for a design report to widen 148th St SW from 35th Ave W to Jefferson Way (ACP/TIP project E.53.01), as well as design and right-of-way funding for a new 148th St SW alignment from Jefferson Way to Ash Way (E.53.02).

(AU# 228) Airport Road / 128th St SW from SR 99 to I-5 SB On & Off Ramps

The information below is from the 2018 Concurrency Report. DPW will perform additional travel time studies and analyses on this urban AU now that the Adaptive Signal Project is operational and after traffic volumes begin to normalize follow the COVID-19 pandemic.

Existing LOS					Forecast LOS (2018 results) (Without Projects Referenced Below)			
AM		PM		Direction	AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
F	5.55	F	6.52	EB	F	6.40	F	7.20
D	15.74	C	18.32	WB	D	17.30	C	20.40

The major contributing factors for the existing deficient LOS in the PM EB direction are the WSDOT left turn lanes from the I-5 SB off ramp to 128th St SW. These two turn lanes, combined with the state signal at the east end of the I-5 & 128th St SW overpass, continue to cause a significant delay for the EB traffic on 128th St SW between 4th Ave W and I-5. Community Transit (CT) has completed a project to widen the EB shoulder of 128th St SW between 4th Ave W and I-5 to accommodate CT's new Swift Orange Line express buses.

The County, along with WSDOT and other cities, completed the installation of the Adaptive Signal Project on this corridor in late 2019. DPW planned on performing a new travel time study and forecast analysis in the spring of 2020 after the system had been calibrated but given the significantly reduced traffic due to the COVID-19 pandemic, DPW will wait until traffic conditions have readjusted to more normal levels before performing a new travel time study and forecast analysis. The county plans to add bicycle lanes from 8th

Ave W to the I-5 interchange (ACP/TIP project C.44). This AU was designated as a multimodal corridor in 2022 and that designation will be reflected in the 2022 concurrency report.

(AU# 293) Gibson Road from SR 99 to 128th St SW

A travel time study was performed for this urban AU on June 4, 2019 and a subsequent forecast analysis was completed. The travel time study and forecast analysis indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours to be:

Existing LOS					Forecast LOS (Without Project Referenced Below)			
AM		PM		Direction	AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
D	21.73	E	13.68	EB	D	21.00	F	13.00
D	18.77	E	15.42	WB	D	18.10	E	14.30

The LOS in the existing and forecast AM & PM and the forecast AM WB directions improved over prior years. The reasons for the improved LOS are not clear but could be attributable to several factors such as drivers choosing alternate routes or the completion of a road project in another jurisdiction.

The major contributing factor for the declining LOS in the existing and forecast PM WB direction is the backup at the intersection of Gibson Rd and Admiralty Way. There is also an elementary school on the south side of Gibson Rd east of SR 99 that contributes to the backup in the AM EB direction. The major delays in the PM EB are happening at the intersections of Ash Way, Admiralty Rd and SR 99.

A roundabout at the intersection of Gibson Rd / Admiralty Way is included in the 2022 adopted ACP/TIP (project E.52.05). The project is programmed in the TIP for construction to be completed in 2027 and is anticipated to reduce vehicle delay at the intersection.

This is the second year that the forecast LOS on the AU is At Risk. DPW will continue to analyze this corridor and the operational improvements expected by the project above, when traffic conditions have readjusted to more normal post COVID-19 pandemic levels.

(AU# 304) Larch Way from 164th St SW to 178th St SW

A travel time study and forecast analysis performed on October 1, 2019 indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours for this urban AU to be:

Existing LOS					Forecast LOS			
AM		PM		Direction	AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
D	19.06	E	14.39	NB	E	15.80	E	13.40
E	16.57	D	21.33	SB	E	15.20	D	19.40

The major contributing factor for the declining LOS in the PM NB direction is the signal at 164th Street SW. 164th Street SW is a busy 5-lane facility designated ultimate capacity that carries significantly more traffic than Larch Way, so east and west phases command priority for green time.

To a lesser extent is the NB queue at 172nd Street SW (an all-way stop), and the SB movements through the intersections of 172nd and 178th Street SW (another all-way stop). During the AM peak hour the major hindrance to LOS is the SB queues, and to a lesser extent, NB traffic stopped at 172nd

Street SW. The AM peak is primarily school traffic related to Alderwood Middle School (at 172nd and Larch Way) and Martha Lake Elementary (at Larch Way and 175th).

DPW will explore options for improvements to the 172nd intersection and continue to analyze this corridor for other operational improvements and, due to the COVID-19 Pandemic, will wait until traffic conditions have readjusted to more normal levels before performing a new travel time study and forecast analysis.

(AU# 334) North Rd from Jonathan Rd to 164th St SW

A travel time study was not performed at this time for the PM because the PM LOS is not close to being at risk. A travel time study and forecast analysis performed on September 18, 2019 indicated that the existing and forecast travel time speed and LOS in the AM peak hour to be:

Existing LOS				Direction	Forecast LOS (Without Project Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
C	26.07	NA	NA	NB	C	25.10	NA	NA
D	18.29	NA	NA	SB	E	14.60	NA	NA

The major contributing factors for the forecast LOS decline in the AM SB direction is the signal at SR 524 and to a lesser extent the signal at Lynnwood High School. On some days, the SR 524 queue can back up about 1/5th of a mile north of SR 524, beyond Jonathan Road and north of S Bellflower Road. In addition, school buses add to slowdowns along the length of the AU during the AM peak. DPW has installed a middle turn lane along the entire corridor, which separates the SB/NB through traffic from left turns along the corridor. For SB traffic at the SR 524 intersection there is a short right turn lane and a through/left turn lane. With the problem being the queuing at this intersection, and as an interim solution, DPW will look at extending the right turn lane to allow more vehicles to make the turn without waiting for the light to turn green.

As the main cause of the LOS problem is the state intersection at SR 524 the best solution would be WSDOT converting the signalized intersection into a roundabout. WSDOT has indicated that construction is tentatively planned for 2025 but is subject to funding approval. This AU is a candidate for being designated at ultimate capacity in the future.

TSA's D & E

(AU# 207 / 336) 35th Ave SE from 188th St SE to 168th St SE

Middle Section of the 35th Ave SE Corridor (see page 16 for the entire 35th Ave SE Corridor analysis):

AU# 207 is in TSA E and AU# 336 is in TSA D. A travel time study and forecast analysis performed on September 17, 2019 indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours for these urban AUs to be:

Existing LOS				Direction	Forecast LOS (With Projects Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
B	31.10	C	22.90	NB	C	23.30	D	18.40
F	10.50	C	22.10	SB	F	8.60	D	17.00

This arterial unit is the middle leg of what is referred to as the 35th Ave SE Corridor. The major contributing factors for the existing deficient LOS F in the AM SB direction are due to the traffic volumes in the morning and the lack of other road options for commuters to use. The forecast LOS in the AM SB direction is still an F but the travel speed is further reduced because of added pipeline volumes (an additional +-20%).

The travel time study was performed after the county completed construction of the 35th Ave SE Phase I project in 2019, which widened the north half of this AU to full three lane urban standards. The south half of this AU will be widened to full standards as part of the 35th Ave SE Phase II project that will be complete in 2022.

The County is also designing a project for 43rd Ave SE (ACP/TIP project E.59) that will provide a through connection from 180th St SE south to SR 524, helping alleviate congestion on 35th. The project is programed in the adopted 2022 TIP for engineering (PE) and right-of-way (RW) in 2022 and for construction to start in 2023.

Based on the results of the forecast analysis DPW will develop further strategies for this AU and the 35th Ave corridor to provide travel route alternatives. Given the extent of recent improvements to this AU and the impracticality of further widening, this AU was designated at ultimate capacity in by county council in 2022. The ultimate capacity designation of the 35th Ave AUs will be reflected in the 2022 concurrency report.

TSAs D & F

(AU# 217) North Road from SR 524 to 176th Place SW

A travel time study was not performed at this time for the PM because the PM LOS is not close to being at risk. A travel time study for the AM peak period was performed for this urban AU on September 18, 2019 and a subsequent forecast analysis was completed. The travel time study and forecast analysis indicated that the existing and forecast travel time speed and LOS in the AM peak hour to be:

Existing LOS				Direction	Forecast LOS (With Project Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
C	24.83	N/A	N/A	NB	D	17.90	N/A	N/A
F	9.82	N/A	N/A	SB	F	7.20	N/A	N/A

The major contributing factor for the existing and forecast deficient LOS in the AM SB direction is the delay at WSDOT's signal at SR 524 and to a lesser extent the delay at the Lynnwood High School signal. For SB traffic at the south end at the SR 524 intersection there is a short right turn lane and a through/left turn lane. With the problem being the queuing at this intersection, and the very limited

ability to widen this AU, DPW will analyze the potential of extending the SB right turn lane at SR 524 to allow more vehicles to queue and make the right turn without waiting for the light to turn green for the through traffic.

As the major contributing factor for the LOS problem is at the state intersection, the solution would be converting the signalized intersection at SR 524 into a roundabout. WSDOT has indicated that construction is tentatively planned for 2025 but is subject to funding approval. This arterial unit is a good candidate to be designated at ultimate capacity.

This is the third time an LOS of F has been identified for this AU and, due to the COVID-19 pandemic, DPW will wait until traffic conditions have readjusted to more normal levels before performing the new travel time study and forecast analysis.

TSA E

(AU# 354) Paradise Rd from SR 522 to King County Line

This primarily rural arterial (approximately the west 900 feet is in the urban area) has been designated in the Transportation Element of the 2015 Comprehensive Plan as a Rural Arterial with Urban Traffic. The travel time study and forecast analysis performed on May 8, 2019 indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours to be:

Existing LOS				Direction	Forecast LOS (Without Project Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
A	37.02	A	36.08	EB	A	36.90	A	36.10
B	31.66	E	15.18	WB	B	31.40	E	14.30

As a Rural Arterial with Urban Traffic, the LOS standard for the rural portion of this AU is the same as the urban portion. The major contributing factor for the existing LOS in the PM WB direction is the queue at the state signal where Paradise Lake Road meets SR 522. Based on existing travel times, the traffic backs up beyond the Maltby urban growth boundary into the rural portion of the AU. The major contributing factor that put this AU at risk of falling into arrears in the PM WB direction is the added pipeline volumes. The added pipeline volumes do not include trips from the proposed Paradise Lake Apartments development because the development has not been determined concurrent.

WSDOT has a design project that is funded through Connecting Washington that would move the Paradise Lake Road crossing to the north so it will be a direct overcrossing of SR 522. The project is currently on hold due to the COVID-19 Pandemic. DPW will continue to work with WSDOT on this intersection and monitor the traffic conditions.

(AU# 471) Yew Way from Broadway Ave to SR 524

A travel time study was performed for this urban AU on December 4, 2019 for the AM and on May 7, 2019 for the PM and a subsequent forecast analysis was completed. The travel time study and forecast analysis indicated that the existing and forecast travel time speed and LOS in the PM peak hours to be:

Existing LOS					Forecast LOS (With Project Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH	Direction	LOS	MPH	LOS	MPH
B	28.48	B	31.91	NB	C	25.40	B	31.80
F	9.66	C	23.50	SB	F	12.30	E	16.10

The major contributing factor for the deficient LOS for this AU is the queuing of the SB traffic on Yew Way at the SR 524 intersection which is caused because the WB/SB SR 524 traffic queuing through SR 524/Yew Way intersection from the signalized intersection of SR 524/SR 522. WSDOT recently signalized the intersection and Snohomish County has a project to install a SB left turn lane on SR 524 from Yew Way to the W Bostian Rd / SR 524 intersection in 2023. After the turn lane project is complete and traffic has the chance to integrate the changes into their driving, DPW will reanalyze this AU to determine how effective the changes were.

TSAs E and F

(AU# 337 / 420) York Rd / 35th Ave SE from SR 524 to 188th St SE

South Section of the 35th Ave SE Corridor (see page 16 for the entire 35th Ave SE Corridor analysis):

AU# 337 is in TSA F and AU# 420 is in TSA E. A travel time study and forecast analysis performed on September 17, 2019 indicated that the existing and forecast travel time speed and LOS in the AM and PM peak hours for these urban arterials to be:

Existing LOS					Forecast LOS (With Projects Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH	Direction	LOS	MPH	LOS	MPH
D	21.1	F	9.2	NB	D	21.6	F	6.9
F	11.3	D	19.6	SB	F	8.3	D	20.1

This arterial unit serves one of the most populous residential areas in the county. The major contributing factor for the existing deficient LOS F in the AM SB and PM NB directions is due to the lack of other road options for users. The anticipated extension of 43rd Ave SE and completion of the 35th Ave SE / 39th Ave SE (York Rd) Phase II project in 2022 appears to be improving the conditions to a certain extent. The forecast LOS in the AM SB and PM NB directions is still LOS F but the travel speed is further reduced because of added pipeline volumes.

Based on the results of the forecast analysis DPW will develop further strategies for this AU and the 35th Ave corridor to provide travel route alternatives. Given the extent of recent improvements to this AU and the impracticality of further widening, this AU was designated at ultimate capacity by county council in 2022. The ultimate capacity designation of the 35th Ave AUs will be reflected in the 2022 concurrency report.

TSA F

(AU# 278) Poplar Way from Lynnwood C/L to Brier C/L

The section of Poplar Way is a two-lane urban major collector with three traffic signals along its length. This AU serves as an important north-south corridor between the Brier/Kenmore residential and commercial areas on the south and the Alderwood Mall commercial area along with I-5 / SR 524 access on the north. A blended travel time study using a combination of pre-pandemic and late pandemic data indicated the travel time speed and LOS in the AM and PM peak hours to be (forecast pending):

Existing LOS				Direction	Forecast LOS (Without Project Referenced Below)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH		LOS	MPH	LOS	MPH
D	18.10	D	17.37	NB	NA	NA	NA	NA
E	15.25	E	14.12	SB	NA	NA	NA	NA

The major contributing factors for the declining LOS are somewhat complex and not the result of a single issue. Several signals, a large percentage of “pass through” traffic, the crossing of several roads that carry equal or greater amounts of traffic, the two-lane nature of the road, the slower 30 mph posted speed, and schools in the area all contribute to the declining LOS.

The section from Lynnwood City Limits to Larch Way is programmed in the adopted 2022 TIP (ACP/TIP project E.54) to be widened to full three-lane urban standards which include two travel lanes plus a center turn lane, bike lanes, curb, planter, and sidewalks on both sides. Design and right-of-way are funded, with construction tentatively scheduled to begin in 2027. The county will continue with operational analysis to monitor this arterial.

Analysis of the 35th Ave SE Corridor from SR 524 to Seattle Hill Road.

This is one of the fastest growing areas of Snohomish County. The major contributing factor for the decreased LOS in both directions along AUs 204, 207 and 337 is the new building and road construction associated with growth in the area and trips in the pipeline from all the approved (but not completed) and pending developments in the area, and the new Northshore School District high school located at the SE corner of 35th Ave SE and 188th St SE which opened in the fall of 2017.

Two new signals on 35th Ave SE at the 198th St SE/197th St SE intersections have been completed as well as the signal at 35th Ave SE and 188th St SE (Grannis Rd). Fine tuning of the signal timing is still ongoing to optimize operations along the corridor.

The County completed a small area transportation study to determine what other road projects in the area would help to alleviate the pressure on the 35th Ave SE corridor. The study determined that completing two new alignments on 43rd Ave SE and widening the corridor between SR 524 and 180th St SE to current standards would help provide relief on 35th Ave SE.

Recently completed and programmed projects in the adopted 2022 Transportation Improvement Program (TIP) to improve the LOS are:

- Project E.28.06 – 35th Ave SE Phase I from 180th St SE to Seattle Hill Rd. Construction of this project was completed in 2019.
- Project E.28.05 – 35th Ave SE / 39th Ave SE (York Rd) Phase II from SR 524 to 180th St SE. Construction of this project will be completed in 2022.
- Project E.59 – 43rd Ave SE from SR 524 to 180th St SE. Design of this project is ongoing and construction is programmed to start in 2023 and end in 2025, pending available funding.

A travel time study performed on September 17, 2019 for the AM and PM peak hours and a subsequent forecast analysis for all three sections of this corridor indicated that when analyzed as one contiguous corridor the existing and forecast travel time speed and LOS in the AM and PM peak hours are:

Existing LOS				Direction	Forecast LOS (With Projects Referenced above)			
AM		PM			AM		PM	
LOS	MPH	LOS	MPH	LOS	MPH	LOS	MPH	
C	26.30	E	13.60	NB	C	24.00	F	10.90
E	13.90	C	23.50	SB	F	12.10	D	19.90

When the LOS is measured along the entire corridor, the existing LOS slightly decreases in both times and directions, and for the forecast the LOS significantly decreases in both times and directions. Traffic analysis indicates that the funded and programmed road capacity projects (listed above) and signal timing modifications will not substantially improve the forecast LOS. Based on these results, the extent of recent improvements to this corridor, and the impracticality of further widening, these arterial units were designated at ultimate capacity by county council in 2022. The ultimate capacity designation of the 35th Ave AUs will be reflected in the 2022 concurrency report.

Summary Tables

Table 1: Summary of Level-of-Service (LOS) Status

Table 1 is a summary of the LOS of all the County’s arterial units for the past six years. The Table represents those arterials above or below the screening level in the LOS determination process. Above the screening level means the ADT volume on the unit has not reached the thresholds in SCC 30.66B.101 needed to trigger screening. Below the screening level means that the ADT volume has reached or exceeded the ADT thresholds in SCC 30.66B.101.

The top half of the table gives a general breakdown of those AUs above or below the screening level. The bottom half of the table shows a more detailed breakout of just those AUs below the screening level.

Breakout of The No. of Arterial Units (AU) Above or Below Screening Level							
LOS STATUS ¹	2017 ²	2017 ²	2018	2019	2020	2021	% of Total
Total number of arterial units³	273	273	273	272	272	268	100.0%
Arterial Units above screening level	236	236	236	235	235	229	85.4%
Arterial Units below screening level	37	37	37	37	37	39	14.6%
Breakout Of Arterial Units (AU) Below Screening Level ⁴							
Monitoring (M) level	15	4	11	15	15	20	7.5%
Operational Analysis (OA) level ⁵ (includes future LOS forecast)	22	35	26	22	22	19	7.1%
Arterial units in arrears (AUIA)	0	0	0	0	0	0	0%
Total AU below screening level	37	39	37	37	37	39	14.6%

¹ See “Review of Concurrency Management System” described on page 5 for an explanation of the various ‘tiers’ of the concurrency management system.

² The reason there are two reports for 2017 is because in January 2018 DPW decided to change the April 1st to March 31st time frame the report has been representing to now represent from January 1st to December 31st of each year.

³ The number of AUs shown represents the total number of AUs for each year and may not match those identified in Table 4 which only shows those AUs that have been upgraded to Monitoring and then are removed if they stay at Monitoring for two consecutive years.

⁴ See Table 4 “Status of Arterial Units Compared with Prior Year” for more detailed information for all arterial units at this level.

⁵ Those AUs below the screening level identified as either OA, or OA-AR both utilize future LOS forecasts.

Table 2: Summary of Arterial Units at Risk

Table 2 shows a summary of the arterial units at risk (AUAR). The data includes; the TSA, the AU number, limits of the AU, if the AU is listed in Table 14 of the adopted Transportation Element (TE) and if so the identified year of completion, the improvement type, the status and number of the improvements in the adopted TIP, if the AU is located within a pending annexation area, and if the AU is a candidate for being designated at ultimate capacity. The abbreviations used in the table are:

W	=	Widening of an Existing Arterial Road	IP-TIP	=	Improvements Programmed in Current TIP
N	=	New Arterial Road Alignment	PD-TIP	=	Project Design Programmed in Current TIP
IS	=	Intersection Improvements	RW-TIP	=	Right-of-Way Acquisition Programmed in Current TIP
NP	=	Not Programmed	OI	=	Operational Improvement
DR	=	Design Report	NIT	=	Not in TIP
PIC	=	Programmed Improvements Completed	ANNEX PEND	=	Annexation Pending
WDI	=	WSDOT Dependent Improvement			
UCC	=	Ultimate Capacity Candidate			

This table is organized in descending order starting with TSA then the AU number.

TSA	AU No(s).	Name and Limits of Arterial Unit	In TE Table 14	Table 14 Identified year of Completion	Imp Type	Imp Status and Number in Adopted TIP	Annex Pend	UCC
D	204	35 th Ave SE from 168 th St SE to Seattle Hill Road	YES	2021	W	PIC	NO	YES
D	225	148 th / Jefferson Way / 150 th St SW / Madison Way from SR 99 to Ash Way	YES	2028	W, N	PD-TIP, RW-TIP (E.53.02)	NO	NO
D	228	Airport Rd / 128 th St SW from SR 99 to I-5 SB On & Off Ramps	NO			IP-TIP (C.44)	NO	YES
D	293	Gibson Road from SR 99 to 128 th St SW	YES	2035	W	IP-TIP (E.52.05)	NO	NO
D	304	Larch Way from 164 th St SW to 178 th St SW	NO			NIT	NO	NO
D	334	North Rd from Jonathan Rd to 164 th St SW	NO			PIC	NO	YES

TSA	AU No.	Name and Limits of Arterial Unit	In TE Table 14	Table 14 Identified year of Completion	Imp Type	Imp Status and Number in Adopted TIP	Annex Pend	UCC
D/E	207/336	35 th Ave SE from 188 th St SE to 168 th St SE	YES	2021	W	PIC (E.28.06) IP-TIP (E.28.05)	NO	YES
D/F	217	North Road from SR 524 to 176 th PI SW	NO			PIC	NO	YES
E	354	Paradise Lake Road from SR 522 to King County Line	NO			NIT	NO	NO
E	471	Yew Way from Broadway Ave to SR 524	NO			NIT	NO	NO
E/F	337/420	York Road / 35 th Ave SE from SR 524 to 188 th St SE	YES	2021	W	IP-TIP (E.28.05)	NO	YES
F	278	Poplar Way from Lynnwood C/L to Brier C/L	YES	2028	W	PD-TIP, RW-TIP (E.54)	NO	NO

Table 3: Status of Arterial Units Compared with Prior Year

Table 4 lists arterial units with a status of Operational Analysis (OA), At Risk (AR), or In Arrears (AUIA) in 2020 or 2021. The AU status definitions and methods for determining that status can be found at the beginning of this report and in DPW Rule 4224.

The abbreviations used in the table are:

<u>Arterial Unit Status</u>			<u>OA Level Study Terms</u>		
S	=	Screening	TTS	=	Travel Time Study
M	=	Monitoring	IntTTS	=	Intermediate TTS
OA	=	Operational Analysis	RECON	=	Reconnaissance
AR	=	At Risk			
AUIA	=	Arterial Unit in Arrears			
<u>Additional Terms</u>					
LOS	=	Level-of-Service	PEND	=	Pending
ADT	=	Average Daily Traffic	UNIT	=	Number assigned to the arterial unit
FCST	=	Forecast	NB	=	North Bound
V/C	=	LOS estimate based on comparison of volumes	SB	=	South Bound
W / IMPS	=	With fully funded improvements expected to be complete within six years	WB	=	West Bound
U	=	Urban	EB	=	East Bound
R	=	Rural	AM	=	The morning (AM) Peak Hours for traffic
			PM	=	The evening (PM) Peak Hours for traffic
			NA	=	Not Applicable

The Arterial Units identified below are listed in descending order by TSA, then the AU number. Arterial Units identified by two numbers (e.g., 287/415) indicate the arterial units are split by the boundary of two TSAs.

TSA	UNIT	ROAD NAME	FROM	TO	R/U	2020	2021	2021 Notes
C	353	AIRPORT WY	SR 9	SNOH C/L	U	OA	M	SB AM & NB PM EXIST LOS D. FCST PENDING BUT PIPELINE MINIMAL. NO SIGNIFICANT CHANGES EXPECTED IN FCST.
D	204	35 AVE SE	168 ST SE	SEATTLE HILL RD	U	OA-AR	OA-AR	PM NB EXIST & FCST LOS F. 2022 ULTIMATE CAPACITY DESIGNATION.
D	220	ALDERWOOD MALL PKWY	164 ST SW	LYNN C/L	U	OA	OA	UPDATED EXIST PM NB & SB LOS D. FORECAST PENDING
D	225	148 & 150 ST SW/JEFFERSON/MADISON	SR 99	ASH WY	U	OA-AR	OA-AR	EXIST PM WB LOS F AND EB LOS D. EXIST PM EB LOS E. FORECAST PENDING.
D	227	BEVERLY PARK RD	SR 525	AIRPORT RD (EVT)	U	OA	M	IMPROVED AM/PM NB/SB EXIST LOS C. FCST AND ADDITIONAL ANALYSIS NEEDED TO DETERMINE CRITICAL LIST STATUS.
D	228	AIRPORT RD/128 ST SW	SR 99	I-5 SB ON/OFF RAMPS	U	OA-AR	OA-AR	BLENDED EB AM LOS F, WB AM LOS D. BLENDED EB PM LOS F USING AVERAGE PERSON TRAVEL SPEED. WB PM LOS D. FORECAST PENDING.
D	229	4 AVE W	128 ST SW	112 ST SW	U	OA	M	IMPROVED AM/PM NB/SB EXIST LOS C. FCST AND ADDITIONAL ANALYSIS NEEDED TO DETERMINE CRITICAL LIST STATUS.
D	230	112 ST SW	EVT C/L	EVT C/L	U	OA	OA	PM EB FCST LOS E, EXIST LOS D; PM WB EXIST & FCST LOS D; AM EB EXIST & FCST LOS D. NEW TRAVEL TIME REQUEST PENDING.

TSA	UNIT	ROAD NAME	FROM	TO	R/U	2020	2021	2021 Notes
D	288	ASH WY	164 ST SW	LYNN C/L	U	M	OA	PM SB EXIST LOS E, & NB EXIST LOS D, AM NB/SB LOS C. FORECAST PENDING.
D	293	GIBSON RD/134 ST/4 AVE/ASH WY	SR 99	128 ST SW	U	OA-AR	OA-AR	AM WB EXIST LOS E, PM EB EXIST LOS D; PM EB EXIST LOS E, PM WB EXIST LOS D; FORECAST PENDING.
D	304	LARCH WY	164 ST SW	TSA F/ 178 ST SW	U	OA-AR	OA-AR	PM NB EXIST & FCST LOS E; PM SB EXIST & FCST LOS D. AM NB/SB FCST LOS E (EXIST NB LOS D, SB LOS E). IMPROVED TRAVEL TIME DATA BEING EVALUATED.
D	334	NORTH RD	JONATHAN RD	164 ST SW	U	OA-AR	OA-AR	AM SB FCST LOS E, EXIST LOS D. IMPROVED TRAVEL TIME DATA BEING EVALUATED. ULTIMATE CAPACITY CANDIDATE.
D	352	4 AVE W	112 ST SW	EVT C/L	U	OA	OA	PM EXIST NB & SB LOS D. FORECAST PENDING.
D	453	LINCOLN WY	BEVERLY PARK RD	W of LAKE RD	U	OA-AR	S	ADT THRESHOLD NOT MET
D/E	207/336	35 AVE SE	188 ST SE	168 ST SE	U	OA-AR	OA-AR	AM SB EXIST & FCST LOS F. PM NB/SB FCST LOS D. 2022 ULTIMATE CAPACITY DESIGNATION.
E	330	BROADWAY AVE	SR 524	164 ST SW	U	OA	OA	PM NB EXIST & FCST LOS E. IMPROVED TRAVEL TIME DATA BEING EVALUATED.
E	354	PARADISE LAKE RD	SR 522	KING CO LINE	U	OA-AR	OA	PREVIOUS PM WB EXIST & FCST LOS E. IMPROVED TRAVEL TIME DATA AND BLENDED RESULTS BEING EVALUATED, HOWEVER AU NOT AT RISK.

TSA	UNIT	ROAD NAME	FROM	TO	R/U	2020	2021	2021 Notes
E	471	YEW WAY	BROADWAY AVE	SR 524	U	OA-AR	OA-AR	UPDATED AM SB EXIST LOS F, AM NB EXIST LOS D; PM SB EXIST LOS D. FCST PENDING.
E/F	420/337	YORK RD/35 AVE SE	SR 524	188 ST SE	U	OA-AR	OA-AR	PM NB EXIST & FCST LOS F (W TIP, SIG OPT. W 43RD + SIG OPT); AM NB FCST LOS E, SB FCST LOS F (W TIP, SIG OPT W/OUT 43RD): AM EXIST LOS D/F. NEW TRAVEL TIME REQUEST PENDING. 2022 ULTIMATE CAPACITY DESIGNATION.
F	217	NORTH RD	SR 524	176 PL SW	U	OA-AR	OA-AR	AM SB EXIST & FCST LOS F (W OPT. SPLIT OF BOTH LYNN HS & STATE SIGNALS); PM NB FCST LOS D, EXIST LOS C. NEW TRAVEL TIME REQUEST PENDING. IMPROVED TRAVEL TIME DATA BEING EVALUATED. ULTIMATE CAPACITY CANDIDATE.
F	278	POPLAR WY	LYNN C/L	BRIER C/L	U	OA	OA-AR	NEW BLENDED TRAVEL TIME RESULTS: AM NB EXIST LOS D, SB LOS E; PM NB EXIST LOS D, SB LOS E. FORECAST PENDING.