

MEMORANDUM

Date: August 3, 2023
To: Mr. Alan Rappleyea, Multnomah County Hearings Officer
From: Dana Beckwith, PE, PTOE
Re: **Response to Select Testimony from Land Use Review Process
for the Filtration Facility and Pipelines**



P18-035

This memorandum responds to a selection of Multnomah County land use review public comments received as of the date of this response that address the potential for transportation impacts from the project. Global Transportation Engineering has previously provided two reports: "Portland Water Bureau Bull Run Filtration Project Traffic Impact Analysis" dated September 2, 2022 (the "**Project TIA**"), which was included in the land use record as staff Exhibit A.31, and "Bull Run Filtration Facility – Construction Traffic Impact Analysis" dated June 2, 2023 (the "**Construction TIA**"), which was included in the land use record as staff Exhibit A.230. This memorandum builds on the Project TIA and Construction TIA and uses defined terms and other concepts from those reports.

The responses below are intended to broadly address the themes and concepts in this selection of public comments. For that reason, these responses are likely to also be applicable to other public comments now in the record or that are placed in the record after the date of this response.

Exhibit H.8: Michael Ard Memorandum

The following sections under this heading are organized to correspond to the headings in Exhibit H.8.

Construction Traffic – Project Description

H.8 Comment Summary

The H.8 Traffic Engineer raises concern that at the substantially complete date ("operational"), construction and permanent staff will both be accessing the site and the scenario is not analyzed or under-represents traffic.

Response to Comment: Traffic is adequately modeled under the current TIA.

The Construction TIA evaluates the Average and Peak daily construction activities to identify the greatest impact on the transportation system and demonstrate that the roadways have capacity to accommodate the estimated traffic levels. It does not evaluate each stage or traffic condition during the construction process, such as traffic at "substantial completion" or "day of completion," as those traffic volumes will be significantly lower with less impacts than was analyzed for the Average and Peak.

When filtration facility site construction activities are substantially complete, finish work and completion of the final segment of pipeline (along Lusted Road from the Finished Water Intertie to just west of Altman Road) will be the only construction activities remaining across the facility and pipeline projects. As a result, the traffic after substantial completion of the filtration facility will be far less than the Peak or Average daily traffic analyzed in the Construction TIA, and it is a reasonable assumption that commuter

and staff traffic travel patterns will be similar to those prior to the substantially complete date with greatly reduced volumes. Transportation volumes identified for Peak and Average daily traffic more than adequately forecast operational impacts to the transportation network. This is apparent in the Project TIA (Exhibit A.31) that shows project area intersections operate at Level of Service A and B.

It should be noted that the main intent of a TIA is to forecast typical daily peak traffic generation, distribution, and operations and not total traffic generated over a facility's life (or, in the case of the Construction TIA, the filtration facility construction period). A Construction TIA is an unusual request – normally a TIA is only prepared for ongoing operations of a project. To be responsive to community concerns, the Construction TIA was developed to model the worst-case for daily traffic operations and takes an extremely conservative approach by estimating all trips will go to the filtration facility site, modeling the largest volume of traffic propagating through the project area intersections at higher than anticipated traffic volumes. If traffic operations meet County operational standards for a worst-case condition, fewer trips would also be acceptable from an operational perspective.

H.8 Comment Summary

The H.8 Traffic Engineer indicates that there will be a reduced construction timeline if the project is substantially complete by September 2027 and that this scenario is not analyzed or under-represents traffic.

Response to Comment: This is not a correct interpretation of the data and analysis. The Construction TIA does not evaluate specific points in construction, but it does evaluate Average and Peak daily traffic as explained above. Therefore, the analysis is not dependent on the project's substantial completion date.

Physical Condition of Roadway and Intersections

H.8 Comment Summary

The H.8 traffic engineer indicates that some impacted roadways were neither designed nor constructed with the intention to support high volumes of truck traffic.

Response to Comment: This is an incorrect assumption on roadway construction. Traffic volumes along project area roadways are well below the volumes these roadways are designed to support. Rural collectors are designed to carry between 1,000 and 4,000 Average Daily Trips (ADT) per the County's **Functional Classification of Trafficways Findings and Recommendations Technical Report, Appendices A and E**. This document defines rural collectors as follows:

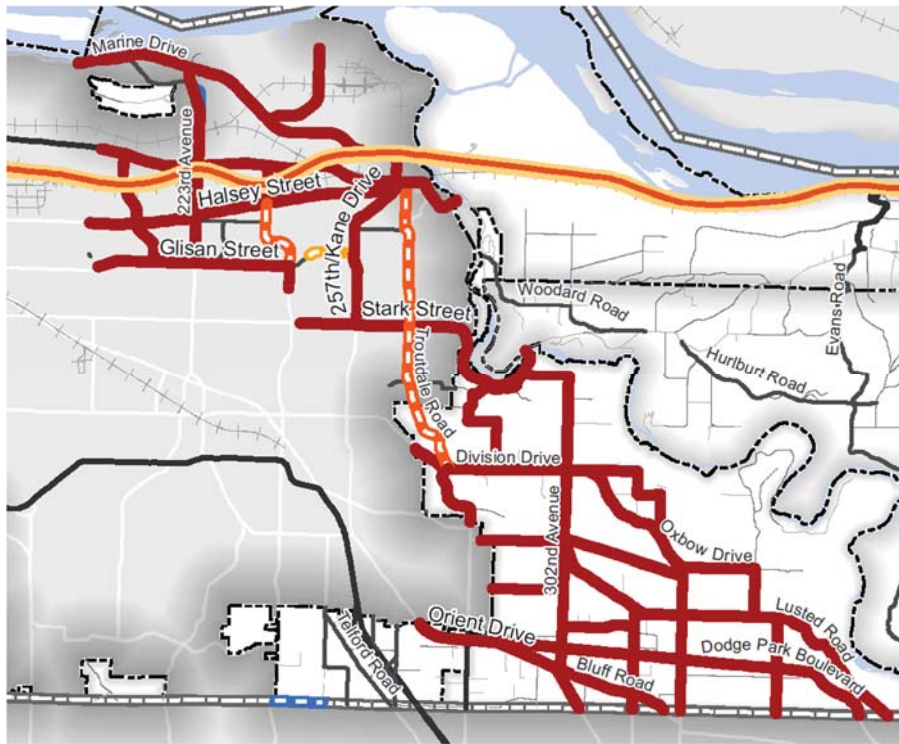
Rural Collector Roads - Rural collector roads are well connected in rural communities to distribute automobile traffic over large areas and generally connect to urban streets or rural arterials. Where rural collector streets connect roads in adjacent counties, through traffic will occur with volumes greater than local rural roads. They may also provide recreational trips by auto, bicycle and equestrian. Primary access is provided to land uses adjacent to the facility and over large rural districts. **Rural collector roads provide for necessary truck transport of (agricultural, timber and minerals) out of rural districts.** [Emphasis added]

Collectors within the project area are typically currently operating under a 1,500 vehicle ADT except for Bluff Road with a 2,700 ADT and Hosner Road with a 2,100 ADT. The addition of construction traffic will not cause these roads to exceed 4,000 ADT. Therefore, the collector roadways to be used by the project are designed and constructed to handle sufficient capacity for the project and for project construction.

Local rural roadways (Local Streets) provide access to abutting land uses on low traffic volume and low speed facilities. The county does not define the ADT level of traffic on these roadways.

Carpenter Lane will be improved and widened east of Cottrell Road where construction traffic will be present. The project will not use Carpenter Lane west of Cottrell Road for construction traffic, as clearly stated in the Construction TIA. While the Construction TIA includes a figure that shows this segment of Carpenter Lane as a potential detour route for local traffic, the Water Bureau understands the concerns of local residents and will not include Carpenter Lane west of Cottrell as a detour option in traffic control plans or signage. Other roadways classified as local streets that are impacted by construction activities will be rebuilt prior to or maintained during construction.

Moreover, all roadways proposed for use (construction traffic and detours) within the project area are designated as freight routes, except for Carpenter Lane. As shown in the below image, Figure 9B from the County's **Transportation System Plan**, red colored roadways are freight routes with "no restrictions."¹



¹ "Restrictions include roadways limited to 40-foot-long vehicles, to 50-foot-long vehicles, and to local deliveries only." Transportation System Plan, page 95.

H.8 Comment Summary

The H.8 traffic engineer identified that removal of a pavement conditions analysis that was identified in an early version of the Construction TIA was removed and made it impossible to quantify expected impacts and proportionate mitigation requirements.

Response to Comment: These comments are addressed in the Staff Report and Pre-Hearing Statement by the Applicant (Exhibit H.3).

The pavement conditions analysis referenced in an early version of the Construction TIA was deemed unnecessary by County Transportation Planning in consideration of how to best quantify impacts to pavements, when to address those impacts, and how to address them. The Staff Report includes recommended conditions of approval from County Transportation Planning. Transportation Planning's condition nos. 5, 6, and 7 specifically address pavement conditions. The applicant proposed additional details to the County recommended conditions in **Exhibit H.3 (Pre-Hearing Statement by the Applicant)**. These details propose a "fix it first" approach to fix the roads that staff identified in Condition 5.c as needing maintenance after staff's review of the early Construction TIA. This approach removes the need for further evaluation of current pavement conditions. This resulted in the updated Construction TIA only retaining documentation of the current pavement condition index (PCI).

H.8 Comment Summary

The H.8 traffic engineer states that several roadways are omitted in the physical conditions evaluation and that others are incorrectly stated as having no impacts.

Response to Comment: The H.8 traffic engineer is incorrect in his assumption that conditions of several roadways were omitted and added a roadway that is not within the study area.

The Construction TIA clearly indicates that most roadways showed acceptable existing conditions and, for that reason, only the areas of concern were listed on pages 4 and 5 in the Construction TIA. The Construction TIA also identified what roadways are anticipated to be main haul routes -- and those that are not -- and the associated PCI ratings. The main haul routes would be expected to experience increased wear from construction vehicles and from a proportionate share standpoint would warrant mitigation to maintain pavement conditions.

As noted above, the applicant proposed additional details to the County recommended conditions in **Exhibit H.3 (Pre-Hearing Statement by the Applicant)**. These additional details include a proposed "fix it first" approach to repair the roads that staff identified in Condition 5.c as needing maintenance after staff's review of the early Construction TIA. These proposed conditions also detail the work described in the Construction TIA as the applicant's commitment to maintain the routes in serviceable condition. The project, including the work proposed in the detailed recommended conditions of approval, includes mitigation of all of the roadways identified as areas of concern in the Construction TIA and will ensure that the road network is in a safe condition during construction of the project as well as after completion of construction. The detailed recommended conditions and accompanying description on **Exhibit H.3** pages 4-6 address all of the H.8 Comment

Oxbow Drive and Bluff Road (within Multnomah County) are mentioned in the H.8 Traffic Engineer's analysis; however, both have PCI ratings greater than 75 and were therefore not identified by County Transportation as roadways of concern.

H.8 Comment Summary

The H.8 traffic engineer notes that truck trips have higher structural impacts than passenger vehicles on area roadways, which can degrade roads to an unacceptable level. It is also noted appropriate mitigation measures need to be provided.

Response to Comment: As discussed above, the Construction TIA and proposed conditions of approval address road degradation concerns raised by the H.8 traffic engineer letter. The proposed conditions would require the applicant to mitigate pavement degradation along roadways identified by staff, including haul routes and roadways that will be frequently used by filtration facility traffic.

H.8 Comment Summary

The H.8 traffic engineer notes high truck volumes will be present “during construction and on-going operation.”

Response to Comment: While relatively high volume of construction trucks will be necessary during the temporary construction period, it is not the case that a relatively high volume of trucks will be present during filtration facility operations.

The Construction TIA identifies the forecasted worst-case construction truck volumes that will be present on haul routes. Impacts and concerns to study area roadway operations are identified and are proposed for mitigation, as described above. During on-going operations, truck traffic generated by the site is estimated to be a maximum of 25 trucks per week. This equates to an average of 5 heavy vehicles per day over a five-day work week. Considering background traffic volumes along Dodge Park Blvd (1,300 vehicles) and Cottrell Rd (590 vehicles), the number of trips from operation of the project equates to approximately 0.4% and 0.8%, respectively, of the daily traffic volume. This is a reasonably negligible volume of heavy vehicles. Furthermore, as noted above, the rural collector roads surrounding the filtration facility site are designed and designated to provide truck transport out of the rural area.

Traffic Data Evaluation

H.8 Comment Summary

The H.8 traffic engineer comments that evaluation of the impact of the COVID-19 pandemic on background traffic is flawed and argues that the 2019 count data is higher than the 2022 count data used in the evaluation and should be used with a growth rate to represent “existing” traffic volumes in the analysis.

Response to Comment: COVID-19 created a unique change in developing and conducting traffic analysis. Work at home and changes in requirements for staff to be at their place of work have changed and are still impacting many areas today. For this reason, the use of 2022 background traffic counts which are reasonably comparable with pre-pandemic counts, even if lower, is an accepted traffic engineering approach that has developed in response to the COVID-19 pandemic.

During the development of the Project TIA, in response to community concerns and feedback from County staff, six intersections were added to the evaluation. An additional two intersections were added during development of the Construction TIA per coordination with County staff. For those eight intersections, no historic 2019 count data was available. Staff also raised a concern that older 2019

counts were being used for the balance of the intersections. The outcome of this was to recount traffic volumes at intersections, evaluate the 2022 traffic levels for acceptability (by determining that volumes were not significantly lower than 2019) and provide a consistent data set that was reasonably comparable with earlier obtained 2019 data. Understanding this would be open to interpretation and various conclusions could be made, the approach and outcome of utilizing 2022 counts was clearly presented in both the Project TIA and Construction TIA for review and comment by Multnomah County Transportation. All available data, historic 2019 and 2022 counts, were provided in the reports. The approach considers an overall look at the system, understanding there will be some areas that are low and some that are high. Overall, the traffic count data evaluation shows the use of the 2022 counts is reasonable, especially when considering the common knowledge in the transportation profession that traffic count data can fluctuate by 10 percent on any given day and the conservative approach taken in forecasting construction vehicle trips.

H.8 Comment Summary

The H.8 traffic engineer comments that the description provided in the Filtration TIA misrepresents traffic data with intersections showing more than 10 percent reduction in traffic. The intersection of SE Bluff Road at SE Altman Road was provided as an example with a 14 percent reduction in traffic volume.

Response to Comment: The Project TIA appropriately identified and evaluated reductions in volume between the two data sets.

There are many ways to evaluate a percent change in vehicle trips at an intersection, all providing different outcomes. Acceptable evaluation approaches can include an overall intersection reduction, reduction by approach, reduction by individual lane, and reduction by group of lanes or multiple approaches.

The approach taken in the Project and Construction TIAs are clearly defined in both documents (page 9 of the Project TIA and pages 5 and 7 of the Construction TIA). To further clarify, data was reviewed for an overall volume reduction at the intersections and the consistency of mainline volumes between the 2019 and 2022 count data as the mainline routes support local business traffic and commuters going to work locations. This process has been used on various projects throughout the COVID-19 pandemic when count data was not available and is an accepted evaluation method for transportation engineering. It is understood that the model will sometimes vary more or less than the historic data and could change up to 10% of total traffic moving through an intersection.

The H.8 Traffic Engineer keys in on evaluation of individual intersections and looks for percentage increases in vehicles as being detrimental to the study. It in fact is not detrimental when considering intersection operations. A comparison of 2019 intersection operations and 2022 intersection operations shows little difference in delay between the two data sets.

The following table shows the existing conditions analysis conducted with the original 2019 counts and 2022 counts, showing no significant change in level of service or delay at intersections where counts exist for both time periods.

Intersection	Peak Hour	2019 Existing Conditions			2022 Existing Conditions		
		Delay	LOS	V/C	Delay	LOS	V/C
SE Altman Rd/ Dodge Park Blvd	AM	7.7	A	0.09	7.5	A	0.05
	PM	7.7	A	0.10	7.6	A	0.09
SE Altman Rd/ Carpenter Ln	AM	9.7	A	0.09	8.6	A	0.01
	PM	9.7	A	0.08	8.9	A	0.01
SE Altman Rd/ Bluff Rd	AM	8.9	A	0.06	9.9	A	0.04
	PM	9.5	A	0.12	10.5	B	0.06
SE Cottrell Rd/ Dodge Park Blvd	AM	9.5	A	0.04	9.4	A	0.04
	PM	9.4	A	0.04	9.3	A	0.03
SE Cottrell Rd/ Carpenter Ln	AM	9.3	A	0.01	9.2	A	0.01
	PM	8.9	A	0.01	8.5	A	0.01
SE Cottrell Rd / Bluff Rd	AM	10.1	B	0.10	10.0	A	0.03
	PM	10.5	B	0.07	10.2	B	0.04
SE Proctor Rd / Bluff Rd	AM	11.7	B	0.23	11.3	B	0.16
	PM	9.9	A	0.10	10.3	B	0.04

Note: Delay, LOS, and V/C reported for the worst minor approach.

It should be noted that the H.8 traffic engineer’s comparison of traffic volumes at the Bluff Rd and Altman Rd intersection for 2019 and 2022 is incorrect. The count data collected at this intersection was collected at different locations between 2019 and 2022. In 2019, the data was collected at the south end of the bend in the roadway, at a location more accurately represented as SE Bluff Road at SE 327th Avenue. In 2022 the data was collected at the north end of the bend in the roadway. As such, these are essentially two different intersections and comparing the count data does not accurately represent changes in volumes.

H.8 Comment Summary

The H.8 traffic engineer comments that between 2019 and 2022 an increase of 2 percent per year growth would be expected and the difference between some 2019 and 2022 count data represents a “meaningful and unexplained” decrease. Three years of 2 percent growth (6 percent) coupled with a 7 percent average decrease at intersections creates a 13 percent discrepancy.

Response to Comment: This is an incorrect assessment.

The newer 2022 counts, based on the analysis conducted in the Project TIA, are comparable to pre-pandemic 2019 volumes. A 2 percent per year growth factor would not logically be applied as the 2022 volumes are accepted as being comparable and current. Therefore, the H.8 traffic engineer’s proposed 6 percent increase is not relevant to the study. When events disrupt or stop traffic growth like COVID-19, it is common transportation engineering practice to assume traffic levels will eventually return to pre-event levels. In our case, this would be traffic levels in 2019 without factoring in additional growth for the intervening years.

The average 7 percent decrease in volumes noted by the H.8 Traffic Engineer is insignificant. Looking at the data as an overall average generalizes the data set and creates the perception of a disparity when some intersections fall above and others below this number. The approach does not look for the 2022 volumes to equal or exceed the 2019 volumes, but rather to approximate them. There is no set rule or expectation that the 2022 data will be equal to or greater than the historic pre-pandemic number.

Project-Generated Trips

Background:

This background is provided to avoid repetition in the response to each of the comments under this heading. The H.8 comments grouped under Project-Generated Trips are of a similar nature in that they all question the validity of the trip generation approach described in the Construction TIA on the premise that it did not consider a key factor or were somehow not sufficiently precise. These comments ignore that the Construction TIA was developed to model the worst-case for daily traffic operations and takes an extremely conservative approach by estimating all trips will go to the Filtration Facility site, allowing the largest volume of traffic to propagate through the project area intersections. This approach constitutes modeling the largest volume of traffic through the project area intersections based on reasonable (higher than anticipated traffic volumes) assumptions. It is fully anticipated and clearly stated in the Construction TIA that this overestimates the concentration of trips, and that pipeline construction traffic is anticipated to go directly to the pipeline work zone. The intent was to show that traffic operations will meet County operational standards for a worst-case condition, and therefore anything less would be acceptable from an operational perspective.

H.8 Comment

“Where will commuter trips destined for the pipeline project park? If the parking facilities are located within the filtration facility site, then these commuters will indeed arrive and depart from the filtration site. But they will also need to travel from the parking facilities to the work sites as additional shuttle trips. If this is the case, the modeled volumes may underestimate actual site trips.”

Response to Comment: As described in the Construction TIA, commuter trips destined for pipeline project work are expected to primarily travel directly to the pipeline work sites. Based on Tables 3 and 4 on page 8 of the Construction TIA, this would reduce commuter trips to the filtration site during the AM and PM peak during average construction conditions by approximately 73 trips and during peak construction conditions by 106 trips. The exact locations of parking facilities for these work sites will be determined by the contractor and will vary depending on the specific segment. Parking is anticipated to occur within the work zone and public right-of-way unless other staging areas are available. In the event parking is not available at the pipeline construction site for a specific segment, the trips of those workers to the facility site were conservatively factored into the Construction TIA. Shuttle traffic under these conditions would be minimal. Based on this approach, site trips are appropriately estimated. Also see the Background above for this section of comments.

H.8 Comment

“Where will pipeline trips actually travel? Are the actual impacts of these trips on affected roadways adequately captured in the analysis?”

Response to Comment: The pipeline truck trips evaluated in the Construction TIA will travel to each pipeline work zone along the routes presented in the Construction TIA and will stop short of the filtration facility at pipeline work sites or will travel to pipeline work sites adjacent to the routes, such as between Dodge Park Blvd. and Lusted Road. As discussed above, it is also anticipated that the pipeline commuter trips will also go to the pipeline work sites. The trips modeled as traveling to the filtration facility are overestimated for a conservative analysis and as noted earlier in this section, this overestimation was

done to logically propagate the worst-case construction trips through the model. Additionally, four anticipated haul route scenarios were analyzed where 100% of truck trips were traveling along those routes. In reality, trip dispersion along routes not captured in the commuter and truck routes will travel through intersections with lower existing volumes. Since the conservative analysis shows acceptable operations at the study intersections with higher volumes, any dispersed trip distribution will not have a significant impact to study intersections along pipeline routes.

Construction of the pipelines will utilize single lane and full roadway closures to accommodate construction. It is fully anticipated some commuters and businesses will choose alternate routes that will result in a further reduction in traffic along the pipeline routes.

H.8 Comment Summary

“Commuter trips were assumed to be inbound only during the morning peak hour and outbound only during the evening peak hour. However, there are no land uses in the ITE Trip Generation Manual which exhibits this travel pattern. The assumed commuter travel pattern implies that no employees will be dropped off or picked up from work, no errands will be run, no visitors will stop by the site, no short-term meetings will occur including off-site personnel at the beginning or end of the day, and no other miscellaneous passenger vehicle trips to or from the site will occur. This is unrealistic. Consequently, the commuter trip projections are not credible.”

Response to Comment: The ITE Trip Generation Manual is the industry standard for developing trip generation estimates when other data is not available. The manual was developed to represent land use trip generation for permanent developments and does not apply as construction commuters and truck traffic are not represented by any land use codes in the manual. For the Construction TIA, trip generation was based on information provided by the contractors on estimates of construction needs for this project specifically. Standard traffic engineering practice is to use site-specific information when available. In this case, the ITE Trip Generation Manual is not an appropriate reference.

The commuter travel patterns represented in the study are conservative and are modeled to assume all trips occur during the peak hour – when in reality a portion of them will occur outside of the peaks. Peak traffic flow is modeled correctly with the AM traffic running into the site and PM out of the site. While some contra-flow trips will occur for drop-offs, pick-ups, and errands, this construction site is relatively remote and construction schedules do not typically align with other sectors of the work force for people to drop-off and pick-up. Therefore, the number of contra-flow trips will be low and insignificant enough to have no negative impact on intersection operations as they are functioning at Level of Service C or better. Meetings would be considered a part of the commuter trip generation.

The use of ITE Trip Generation Manual data is inappropriately applied. The H.8 traffic engineer cites the ITE Trip Generation Manual land use codes 110 - General Light Industrial and 710 - General Office Building as being comparable to the Filtration Project construction trip generation and develops a contra-flow concept based on trip splits from these land uses. The ITE Trip Generation Manual does not gather or publish construction trip generation data for various land uses.

H.8 Comment

“It was noted that the analysis also assumed zero passenger vehicle trips in and out of the project site outside the morning and evening commute hours. As such, the daily traffic volumes reported in Table 2 reflect only the incoming trips in the morning and outgoing trips in the evening, inaccurately omitting

both the contra-flow commuter trips during the peak hours and the miscellaneous passenger vehicle trips which occur outside the morning and evening peak hours. As a result, both the peak-hour commuter trips and the daily commuter trips are underestimated in the construction traffic impact analysis provided for the project.”

Response to Comment: This comment is incorrect and the H.8 Traffic Engineer’s approach to trip generation and distribution is based on flawed use of data.

Multnomah County, as is standard for traffic engineering, requires peak hour analysis to evaluate intersection operations. This is when background traffic is highest during the average day, and therefore if an intersection functions at acceptable levels during the peak hour, it logically will function at acceptable levels during other hours of the day. The analysis was conducted per the County requirements outlined in the Multnomah County Design and Construction Manual, Section 1.1.3 Traffic Study Requirements. The traffic analysis makes no assumptions, nor would it be expected to make assumptions, about trips made outside of the peak analysis hours.

The H.8 Traffic Engineer’s approach to developing traffic volume distributions is flawed and inappropriately applies ITE land use trip generation and distribution data gathered on permanent land uses and applies it to construction traffic. The data source does not gather data on construction traffic, nor is it used to forecast construction traffic.

Traffic Impacts Analysis – Intersection Performance

H.8 Comment Summary

The H.8 traffic engineer asserts that failure to provide a “background conditions” analysis is unusual and that the omission makes it more difficult to follow the calculations and verify that appropriate traffic volumes are calculated.

Response to Comment: The comment ignores the background conditions analysis included in the Project TIA (Exhibit A.31).

The Construction TIA looks at the roadway network to evaluate the project temporary traffic concerns. The Construction TIA was preceded by, and builds on, the Project TIA, which evaluated 2022 and 2040 background conditions utilizing a 2% growth rate over a 20-year period. The results of that evaluation are in the Project TIA on page 16, Table 6. This table shows that study intersections with 20 years of growth still operate at Levels of Service A and B with marginal increases in delay and no mitigation. This negates the need to document another interim 2025 background traffic scenario that would represent 17 fewer years of traffic growth. If the 20-year horizon scenario had not been considered, an additional evaluation would have been documented in the TIA.

When developing the 2025 Peak and Average traffic volumes for the Construction TIA, 6% (2% per year) growth was added to the 2022 background condition counts.

H.8 Comment

“Even without detailed diagrams showing precisely how future traffic volumes were calculated, the analysis appears to underestimate future traffic volumes in four ways.”

Response to Comment: Each H.8 assumption will be discussed and evaluated.

Assumption 1: *“The analysis used year 2022 traffic volume counts which were demonstrably lower than the historical 2019 traffic volumes, indicating that current traffic levels are depressed by an average of more than 7 percent even when we ignore the fact that we would normally expect increases in these traffic volumes over the three intervening years.”*

Response to Comment: This comment repeats criticisms discussed above related to the use of 2022 background traffic and the COVID-19 pandemic. A response is provided above under “Traffic Data Evaluation.” Even absent the COVID-19 pandemic, it is not the case that we would necessarily expect an increase in volumes from 2019 to 2022, especially when you consider the day-to-day fluctuations in traffic (usually up to 10 percent) and the low volumes that are at study intersections. What we would expect to see to consider the 2022 counts valid for use for background traffic levels is that they approximate 2019 counts, which they do.

Traffic data is based on a point in time with typically one day of traffic data. It is well-understood in the transportation profession that traffic data can vary up to 10 percent on any given day. So, the H.8 Traffic Engineer’s criticism that there is a 7 percent “depression” is well within the normal variation in traffic volumes. Whether the data is seven percent low or seven percent high, at each intersection it equates to a very minor change in traffic levels. With the low volume intersections in the study area, the H.8 Traffic Engineer represents this as a percentage difference to make it appear more impactful than it is. The background traffic volumes are so low that the difference between 2022 and 2019 levels would not be expected to change the Construction TIA’s conclusions on intersection operations levels of service.

Assumption 2: *“The analysis considered traffic conditions for the year in which construction is projected to start (year 2025). However, the construction project will continue for several years. Traffic growth during the interim was not considered. Since the project is expected to continue through year 2027 or 2028, the analysis should address operation through those years to ensure that any operational concerns are identified and appropriate mitigation is recommended to address problems that may arise during the duration of construction.”*

Response to Comment: 2025 is not “the year in which construction is projected to start.” Instead, based on input from the CM/GCs, 2025 is when construction traffic is at its peak with the greatest potential impact. After that point traffic volumes begin to reduce. This is clearly shown in Appendix B of the Construction TIA graph of Total Vehicle Trips per Day 3.8.23. For this reason, 2025 background traffic was used as the most conservative analysis point. The 2025 Peak traffic condition identifies the point that construction traffic is highest and any adverse impacts to the transportation network are most likely. Any additional analysis, as construction traffic drops, will not result in identifying any further impacts. The additional 2% growth per year over an additional three years noted as being necessary by the H.8 Traffic Engineer would result in a minimal increase in traffic volumes. The reduction in construction traffic will reduce traffic volumes far quicker than the 2% annual growth that would theoretically occur. For example, the reduction in peak construction traffic between 2025 and 2026 is at its just under 2.4%. After 2026 volumes are forecast to drop at a much faster rate. Additionally, the H.8 Traffic Engineer again

over-represents the volume change that occurs with a 2% growth per year, which, in the case of the study intersections with low volumes, is insignificant.

Assumption 3: *“Since the commuter trip estimate for the project did not include any contra-flow trips, commuter traffic impacts are underestimated, and the full impact of the project is not captured by the analysis. The future conditions analysis should account for commuter trips departing during the morning peak hour and arriving during the evening peak hour.”*

Response to Comment: This comment repeats criticisms discussed above under the comments to the “Project-Generated Trips.” The opinion of contra-flow trip estimates from the H.8 Traffic Engineer is based on the incorrect use of industry standard data sources that do not gather, nor publish construction related land use trip generation data. Please refer to the “Project-Generated Trips” Response to Comments for further discussion.

Assumption 4: *“The analysis utilized the same peak hour factors for existing and future traffic conditions. This means that the relative variation in traffic volumes that occurs during the peak hour is projected to be similar either with or without construction traffic. However, typical construction projects have a common start time for most employees. This concentrates most arrivals and departures to the periods immediately prior to the start of work and immediately after “quitting time.” This phenomenon results in increased delays, worsened levels of service, and increased queue lengths at area intersections during the morning and evening peak hours. These spikes in traffic demand are not captured in the analysis provided.”*

Response to Comment: This is not an accurate assumption on start and stop times. Trades involved in construction do not always have common start and stop times. Many times, a trade may have to wait on another before starting, which has the impact of a varied start time.

Moreover, the Construction TIA does assume – in order to ensure the most conservative approach – that all Commuters will be traveling during the peak hour periods. The model already concentrates arrivals and departures to these peak hours and does not result in levels of service below standards. These spikes in traffic demand are captured in the analysis provided.

Changing a peak hour factor is an engineering judgement call, especially for “future conditions.” Although in this case we are considering several years in the analysis and not a 20-year forecast. Changing the peak hour factors has the most impact in areas that are operating at or near capacity, meaning the volume of traffic on the roadway equals or exceeds the capacity of that roadway, otherwise known as the V/C ratio. When an intersection is at capacity, the intersection will have an overall V/C ratio of 1 or greater. In the case of the intersections in the study area, none of them operate in this manner and none operate at or near capacity. Therefore, the choice was to retain peak hour factors based on the existing count data in the analysis.

The ODOT Analysis Procedures Manual Version 2, Section 5.9 has an in-depth discussion on approach and reasoning behind the use of peak hour factors and identifies that the use of peak hour factors and how to apply them comes down to engineering judgement.

H.8 Comment Summary

“Even with the underestimated traffic volumes and impacts, Table 6 of the June 2, 2023, report prepared by Global Transportation Engineering demonstrated that none of the four analysis scenarios results in acceptable operation for all study intersections. ... A delay increase of just 10 percent would cause the intersections of SE Dodge Park Boulevard at SE Cottrell Road and SE Bluff Road at Orient Drive to fail to meet the performance standards under some analysis scenarios.”

Response to Comment: The Construction TIA was developed to identify areas that would not meet operational standards without mitigation. Those were identified under each of the scenarios. Mitigation and a subsequent TDM plan (Attachment 3 to Exhibit H.3) have been provided. With mitigation, study intersections show acceptable levels of operation, even under extremely conservative analysis assumptions.

The H.8 Traffic Engineer indicates a 10 percent increase in delay will cause the intersections of SE Dodge Park Boulevard at SE Cottrell Road and SE Bluff Road at Orient Drive to fail to meet the performance standards. This observation is not relevant as the Construction TIA analysis, assumptions, and forecast volumes all demonstrate these intersections do not exceed the allowed delay threshold as defined by the County. There is no reason to believe that there is an unaccounted-for 10 percent increase in delay, particularly given the extremely conservative analysis assumptions.

H.8 Comment

“The Global Transportation Engineering report opines that the operation of the intersection of SE Carpenter Lane at Cottrell should be acceptable despite not meeting the performance standard because there are very few vehicles on the eastbound approach which are subject to long delays and level of service “F” operation. It is notable that operation of this intersection is projected to worsen from level of service “A” under existing conditions to level of service “F” with the addition of construction traffic. As such, the impacts will be very noticeable to affected residents. Additionally, SE Carpenter Lane was identified as a local traffic detour route to be used during road closures, and it is the closest and most direct detour route for traffic navigating around a road closure on SE Dodge Park Boulevard west of Cottrell Road. Accordingly, traffic volumes would not be projected to remain low throughout construction.”

Response to Comment: The H.8 traffic engineer ignores the statement at the top of p. 14 of the Construction TIA:

"The TDM strategies for Commuter traffic recommended below in the Mitigation Analysis section will allow the intersection to operate at acceptable levels of service."

Table 8 on p. 19 shows that this intersection, with TDM strategies employed, will operate at level of service B and C in the PM and AM peak hour periods.

Construction traffic will not utilize Carpenter Lane west of Cottrell Road. The project will not use Carpenter Lane west of Cottrell Road for construction traffic, as clearly stated in the Construction TIA.

While the Construction TIA includes a figure that shows this segment of Carpenter Lane as a potential detour route for local traffic, the Water Bureau understands the concerns of local residents and will not include Carpenter Lane west of Cottrell as a detour option in traffic control plans or signage. This will be controlled and restricted. The traffic that is anticipated to use Carpenter Lane that cannot reasonably be restricted are residents that know the area. This route will not be signed as a detour, but some residents may choose to use it on occasion. Construction traffic will be managed, and detours will be signed for routes that do not impact Carpenter Lane west of Cottrell Road.

Pipeline Construction Lane and Roadway Closures

Pedestrian and Bicycle Accommodation During Construction

H.8 Comment

“... providing similar dimensions for pedestrians and cyclists during project construction is in no way equivalent to or better than current accommodations.”

Response to Comment: The Construction TIA accurately describes the current conditions on study roadways for pedestrian and bicycle use. In evaluating pedestrian and bicycle accommodations, the following factors were considered:

1. Work zones along roadways will be predominantly along pipeline construction routes and at Cottrell Rd and Carpenter Ln near the filtration facility. The latter two roadways will be reconstructed prior to peak construction traffic volumes being present.
2. The project is located within rural Multnomah County. Rural road standards apply and do not require bike lanes or sidewalks.
3. Roadways currently have limited accommodations for ped/bike traffic.

The bicycle and pedestrian accommodation section of the Construction TIA specifically discusses accommodating pedestrians and bikes around work zones. The approach identified in the report is common practice in the industry along rural roadways, as sidewalks and wide shoulders typically are not present. The intent is to maintain access for all travel modes. This practice is the same irrespective of the number of pedestrians and bikes that may be on the facilities. For example, the 2022 counts conducted at the 15 study intersections showed a total of 4 pedestrians and 4 bikes in the AM peak and 3 peds and 2 bikes in the PM peak. Even if this number of pedestrian and bikes were larger, they will be provided safe lanes of travel around the work zones as detailed on pages 17-18 of the Construction TIA.

Most motorists will reroute if they understand construction may delay their trip even for a few minutes. The project area provides a roadway network that allows motorists to reroute with 2 to 3 minutes of delay. This reduces traffic volumes near the work zone. When work zones are close to travel lanes, it also slows traffic. Pedestrian rerouting noted in the Construction TIA will be accompanied by the appropriate construction signing, striped shoulders, and tubular markers increasing their visibility. These will be applied based on local, state, and federal standards.

Currently, bicycles share the road within the project area along roadways that facilitate high speeds. There will be an increase in construction traffic but not that exceeds what the roadways are designed for.

The appropriate construction signs that follow local, state, and federal standards will be provided increasing awareness for all motorists.

When evaluating pedestrian routes, not only is the size of available space considered, but other physical site characteristics are considered such as surfacing, ditches, drop-offs, traffic, etc. All of these will be considered during construction as work zones progress.

This section does not limit the use of other means for facilitating pedestrian and bike routing such as detouring or providing shuttle services.

H.8 Comment Summary

The project will result in massive increases in traffic: 749 added trips as indicated in the traffic analysis or 851 if the H.8 traffic engineer's contra-flow trips are considered. This is equal to that of building 900 new single-family homes.

Response to Comment: The H.8 traffic engineer focuses on the peak traffic volumes and does not consider that those volumes were a conservative forecast and that most of the time, commuter and truck volumes will be less. The Construction TIA models commuter traffic as condensed to the peak hour along with 15% of the truck traffic. This creates a conservatively high forecast of traffic. The Construction TIA was developed to identify worst-case traffic operations knowing that volumes will typically be less than the peak and 50% of the time less than the forecasted average traffic volumes. And, as previously noted, with mitigation per the submitted TDM plan, all intersections perform at an acceptable level.

H.8 Comment Summary

Dedicated facilities will be needed to accommodate people walking and biking on Carpenter Ln to address increased traffic loads.

Response to Comment: The applicant is widening and reconstructing Carpenter Lane to facilitate traffic volumes during construction and during on-going operations. The applicant is required to develop the roadway improvements to meet Multnomah County Design Standards. Pavement design and lane widths will meet the County's Rural Collector standards for rural roads. These standards do not specify sidewalks or bike facilities (the rural roadway cross-section from the Multnomah County Design Standards is shown in the following figure).

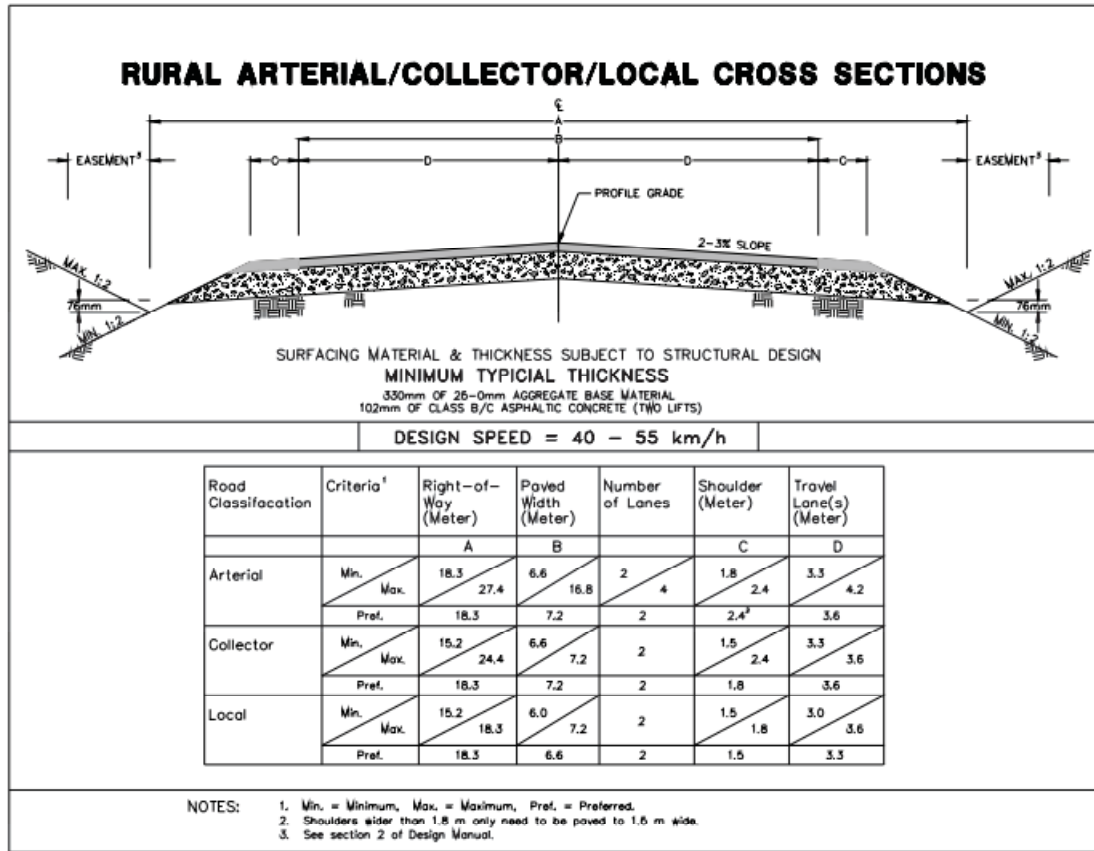


Table 2.2.5 Rural Cross Sections

Multnomah County Design Standards
 Part 1 – Design Manual

H.8 Comment

“Given the massive impact of construction traffic, significant improvements can and should be required to area roadways and intersections.”

Response to Comment: The applicant is proposing significant improvements to area roadways and intersections, including all improvements recommended by Multnomah County staff in their review of the Construction TIA and Project TIA.

Roadways are being replaced along haul routes and roadways impacted by construction as detailed in the **Staff Report** and the proposed specific conditions of approval provided in **Exhibit H.3 (Pre-Hearing Statement by the Applicant)**. In addition to the work required by those conditions of approval, the intersection of Dodge Park Blvd at Cottrell Rd, Cottrell Rd from Dodge Park Blvd to Carpenter Ln, and Carpenter Ln to the site driveway is being improved to facilitate Filtration site traffic. All improvements are being designed and constructed to meet Multnomah County requirements.

Mitigation Analysis

H.8 Comment

“In lieu of suggesting operational or safety enhancements for area roadways and intersections, the construction traffic impact analysis suggests several Transportation Demand Management (TDM) strategies to address site impacts.”

Response to Comment: As noted above, the applicant is proposing extensive operational and safety enhancements for area roadways and intersections in addition to several TDM strategies.

H.8 Comment Summary

Transportation Demand Management (TDM) strategies lack specificity, are difficult to implement, are not analyzed, and it is unclear if they restore acceptable operations.

Response to Comment: This is incorrect. The H.8 traffic engineer does not have tangible evidence to support the claim that the noted TDM strategies are difficult to implement, and the argument is based on his interpretation of traffic volumes that are not supported by analysis. Each tool in the toolbox of strategies is routinely and feasibly implemented for construction projects. Additionally, this H.8 comment was submitted prior to the submittal of the applicant’s proposed Construction Transportation Demand Management Plan included as Attachment 3 to ***Exhibit H.3 (Pre-Hearing Statement by the Applicant)***.

The TDM strategy defines the requirement of reducing traffic volumes at the Cottrell Rd at Carpenter Ln intersection to bring the access point (Access A) into acceptable operational standards. It also defines the level of traffic (190 trips) that needs to be diverted during the “peak hours”. This was defined by the analysis that is documented under the heading “Mitigation Analysis” within the Construction TIA.

The TDM mitigations provide a toolbox of strategies that are used in construction to reduce trips to the Project. These are commonly used under temporary traffic conditions in lieu of unnecessary and expensive infrastructure improvements that, once construction is done, are not warranted and would require the County to operate and maintain. It may take more than one strategy to lower volumes during the short Peak traffic period.

The initial TDM Plan has been provided to the County as Attachment 3 to ***Exhibit H.3***. The TDM defines a plan to provide a means of monitoring traffic accessing the site to ensure that the appropriate toolbox of strategies is implemented to reduce traffic volumes at the Cottrell Rd at Carpenter Ln intersection to bring the access point (Access A) into acceptable operational standards. The plan includes a forecast of trips using a look ahead of construction activities as well as a tube counter or similar device for monitoring actual traffic volumes. If total peak hour trips exceed the defined vehicle capacity, TDM measures are available and feasible and will be implemented as described in the TDM. The plan also requires the applicant to submit monitoring reports to the County describing traffic counts and mitigation methods used to lower trips below the threshold number.

Agricultural Business Access

H.8 Comment Summary

Defined measures to accommodate agricultural business access which includes information and notifications of construction activities are unlikely to satisfy most farmers or meaningfully reduce impacts to their operations.

Response to Comment: The H.8 traffic engineer makes general statements about what will “satisfy most farmers” and the “nature of farming” without providing evidence to support the claims or coordination with subject matter experts. Global Transportation Engineering has consulted with the applicant’s agricultural expert (Globalwise) for input on this response and provided input on Globalwise’s separate response submitted into the land use record concurrently with this memorandum.

Notifications for road-related travel conditions and work zones are useful tools and will be employed by the Water Bureau. However, measures to accommodate agricultural businesses far exceed “information and notification of construction activities.” The full set of measures are based on Globalwise study of farm traffic for over 2 years. Measures include: 1) adoption of 11 pipeline construction constraints to assist farm related vehicle movement on the public roads, 2) scheduling pipeline construction in key farm travel intersections during low farm travel times, 3) accommodating farmers who need to reach fields near pipeline construction zones, and 4) using flagger-controlled passage for farmers to reach lower Lusted Road using Dodge Park Boulevard.

Farmers also use accepted farm practices to reach fields and improve their mobility. These include: 1) maximizing use of private farm roads 2) tracking road conditions and using alternative routes as indicated, 3) re-positioning farm equipment in fields at the end of the day for the next day's field activity, 4) entering fields at alternative access points or any point with minimal barriers to access such as shallow ditches, 5) using early start times seasonally when there is early morning daylight, and 6) adding Saturdays for workdays when seasonal work requires it. Farmers that need to move equipment longer distances often use trucks pulling trailers, pickups, or crew buses to reach their destinations. These vehicles travel at the normal, posted traffic speed.

Farmers indicated to Globalwise that they prefer having two segments of road constructed with pipelines at the same time to reduce the total construction time.

All farmers are able to check routes for the best routes to destinations. Dispatched truck drivers picking up loads have easy access to the same route information to determine how they want to reach destinations and avoid pipeline construction routes.

Dispatched truck drivers who haul products to customers can determine the best routes for travel using Trip Check and Google Maps to monitor traffic conditions.

For more details about farm traffic see the report, Compatibility of Proposed Portland Water Bureau Filtration Facility & Pipelines Construction with Farm Traffic. This work informed the planning for pipelines construction scheduling.

The Construction TIA shows that all intersections studied will remain within Multnomah Count LOS standards. This means there are no significant travel time delays.

The Water Bureau's efforts to minimize impacts on farmers will not result in changes to their farm practices for farm-related traffic or for shipment of farm products. Furthermore, any cost increases will be insignificant, because farmers who rely on the public roads to reach fields have a full set of accommodations planned by the Water Bureau. Furthermore, the farmers and shipping companies are mobile and adjust to changing traffic conditions already as part of their accepted farm practices.

H.8 Comment Summary

Movements of farm vehicles that extend across more than a single lane are problematic, especially when conflicting vehicles include heavy dump trucks, tankers, and when construction limits roadway widths.

Response to Comment: This is an incorrect assumption with no data to back the assertion. Large farm vehicles will be accommodated around construction work zones. Construction trucks (driven by professional licensed drivers) and commuters will stop and travel behind those farm vehicles just as

traffic currently does. The same is true for vehicles traveling towards a large farm vehicle, each will adjust to accommodate passing.

Furthermore, according to Globalwise, winter harvest is the primary time wide farm loads are on public roads. This is when trees are taken to headquarters. At other times of the year there are few incidences of wide loads carrying farm equipment. Finally, construction vehicle drivers will be instructed to watch for wide loads and to slow down, especially on the narrow roads.

Haul Routes

H.8 Comment Summary

The traffic study demonstrates each distribution scenario for haul routes fails to meet the operational standards, traffic volumes are deflated, trip distribution omits contra-flow peak-hour trips was only conducted for the year 2025, shows no diversion of traffic to other routes and analysis depends on Access A (Carpenter Ln) and Access B (Bluff Rd) to be present or the implementation of and offset arrival plan which he indicates impractical.

Response to Comment: This comment mostly restates comments that have been addressed above, such as related to use of 2019 or 2022 background traffic volumes, contra-flow trips, and use of the year 2025 for the analysis. The general objection to the statement that “no mitigations are recommended with respect to truck routes” misrepresents the intention: as is clear in the Construction TIA, there are distribution scenarios that require mitigation, but the mitigation is not related to any recommended change in truck routes. The H.8 traffic engineer also assumes a failure at an intersection is a failure of the scenario. It is not, but rather identifies areas of concern with a need for mitigation, which are typical in an area-wide evaluation such as this.

Each haul route scenario was run to identify areas of concern. To be extremely conservative, all trucks were shown to follow each route. As clearly presented in the Construction TIA, truck traffic will be more distributed in the network. The Construction TIA identifies the intersections of Dodge Park at Altman to be of concern under Scenario 2 and Cottrell Rd at Carpenter Ln under all scenarios. The Construction TIA identifies mitigation options that consist of TDM strategies. TDM strategies are typically implemented under temporary conditions to handle traffic mitigations as permanent improvements are not needed to support normal traffic conditions. Agencies do not want to be responsible for additional infrastructure that is not warranted after the end of construction as it creates liability and increases maintenance and operations for them. For this reason, TDM strategies are appropriate mitigation for the scenarios that present intersections of concern.

H.8 Comment Summary

“Operation of heavy vehicles on the area roadways exacerbates concerns regarding conflicts with pedestrian and bicycle traffic (as well as passenger vehicles).”

Response to Comment: All haul routes are County-designated freight routes. As such, the roadways are designed to accommodate heavy vehicles. Heavy vehicles currently utilize the roadways in the form of farm equipment, school buses, and semi-trucks associated with businesses within the project area. Pedestrians and bicycles are present along the roadway; however, those numbers are reasonably minor. Traffic counts at the 15 study intersections showed a total of 4 pedestrians and 4 bikes in the AM peak

and 3 peds and 2 bikes in the PM peak. As explained above, pedestrians and bicycles will be accommodated around work zones.

Construction will temporarily increase truck volumes along various roadways; however, construction vehicles are driven by professional licensed drivers that understand the potential presence of pedestrians and bicyclists. Construction projects managed by public agencies are all required to have safety briefings which can keep this safety concern at the forefront.

H.8 Comment Summary

Heavy trucks also require longer sight distances at intersections than passenger vehicles due to their slower acceleration and there should have been a separate analysis of “truck intersection site distance.”

Response to comments: This is an incorrect assessment.

The addition of traffic to the study area road network does not change sight distance conditions at area intersections. All construction Trucks will be operated by professional, trained, licensed drivers that receive comprehensive safe driver training and are directed to follow this training at all times. These professional drivers know to take into account the slower acceleration of the vehicles they are operating in assessing the necessary gap for safely entering a roadway.

As with any site development, improvements performed by the project within the public right-of-way including intersections and access points are required to meet County Standards. This includes sight distance requirements. The intersections of SE Cottrell Road / SE Carpenter Lane and SE Cottrell Road / SE Dodge Park Boulevard will be modified as part of the Project and County sight distance requirements met.

Vegetation can be a frequent cause of sight distance restrictions. Ongoing mitigation of vegetation is a function of County roadway maintenance. Field evaluations at study intersections did not identify sight distance obstructions.

Schools

H.8 Comment Summary

Regarding the 40-minute window around school start and end times for construction traffic to avoid school zones: “no mechanism for achieving this goal is described.”

Response to Comment: The comment ignores text earlier in the Construction TIA explaining that: “CM/GCs will take note of start and end times for these schools (listed below) when developing delivery schedules for transporting materials to avoid impacting the schools and creating delays due to construction traffic. Contractors will allot an additional 20 minutes before and after school starts in the morning and an additional 20 minutes before and after school ends in the afternoon to allow for school-related traffic to dissipate.”

H.8 Comment Summary

Comment: It does not appear that the concept of restricting construction traffic around schools is feasible due to the traffic volume and commute times.

Response to Comment: The applicant is not proposing to “require limiting the times when commuters could arrive and depart the site” as the H.8 Traffic Engineer states (other than as otherwise may be part

of a TDM plan). Instead, as noted above, the contractors will develop delivery schedules for Truck trips to avoid impacting the studied schools. Limiting the times when haul routes can be used by Trucks is feasible both because there are other available alternative haul routes and because the CM/GCs can allot additional time in delivery schedules as described.

The Construction TIA summarized field evaluations of several of the schools during the AM and PM school start and stop times. The AM peak hour is the more critical as it corresponds with local area commuters traveling to work in the morning. The avoidance by construction Trucks of the 20 minutes before and after the start and end of school will reduce the number of vehicles during the times parents are dropping off/picking up students.

As previously noted, the Construction TIA models traffic consolidating trips to specific routes to represent worst case operations. The reality is that construction Commuters will be coming from various directions throughout Multnomah County. Therefore, Commuter traffic volumes will be dispersed throughout the transportation network.

Crash History

H.8 Addition to Record Summary

The H.8 traffic engineer introduces the ODOT crash analysis concept of statewide 90th percentile crash rates for different intersection types.

Response to Addition to Record: The ODOT crash rate analysis procedure uses the crashes per million entering vehicles (CMEV) concept based on an aggregation of data from an evaluation of statewide crashes at over 500 intersections in the State of Oregon. The evaluation in the Project TIA utilized the CMEV approach and looked at the total number of identified crashes at each intersection. This approach is appropriate for a traffic evaluation in the project area as both the number of crashes and CMEVs are relatively low, and the crash data set was small. Both are tools used to evaluate the need for additional evaluation of crashes at an intersection.

However, neither the CMEV (as ODOT uses it or as it was used in the Project TIA) nor the total number of crashes provides information about the improvement to mitigate or whether there is actually an issue causing crashes. Once intersections of concern are identified based on CMEV or other methods, an investigation into the crash data specifics must be conducted to determine if there are any patterns in the crash data that may support possible changes in traffic control, geometric design, or site characteristics to mitigate the reported collisions. As explained on page 4 of the Project TIA, this analysis was conducted for the intersections of SE Lusted Road / SE Altman Road and SE Bluff Road / SE Proctor Road.

The H.8 Traffic Engineer's result of the statewide 90th percentile crash rate analysis is similar to the results of the analysis presented in the submitted Project TIA. In addition to the intersections analyzed in the Project TIA, the H.8 Traffic Engineer identifies the additional intersection of SE Oxbow Drive at SE Altman Road as one that meets the 90th percentile crash rate.

As shown in Table 2 of the Project TIA, the Oxbow Dr at Altman Rd intersection had two reported crashes in five years. A detailed investigation into that crash data shows one rear-end collision between northbound vehicles and one fixed object collision where an eastbound vehicle was driving too fast for

the wet conditions and ran off the road. Those two crashes do not represent a pattern that could be mitigated and therefore no mitigations are identified. Therefore, even if the H.8 Traffic Engineer's process for identifying intersections of concern is used, no mitigatable patterns are identified.

H.8 Comment

"For the two intersections with crash rates in excess of 1.0 CMEV, the report included a more detailed discussion of the crash history, but there was no apparent analysis of whether roadway geometry, sight obstructions, topography or other factors may have contributed to high crash rates....."

Response to Comment: Analysis of the two identified intersections of concern (SE Lusted Road / SE Altman Road and SE Bluff Road / SE Proctor Road) included a review of all reported crash history, potential causes, and the errors and causes listed in the crash results. For example, at SE Lusted Road / SE Altman Road, "the errors and causes listed in the crash results included failure to yield the right-of-way and disregarded traffic control." Project TIA, page 4. There was no indication of a need to further evaluate roadway geometry, sight obstructions, topography, or other factors.

Nevertheless, conditions were evaluated along all study roadways and at all study intersections for the Safety Analysis of the Physical Condition of Roadways and Intersections section at page 4 of the Construction TIA. That evaluation for safety concerns included a review of roadway geometry, sight obstructions, and topography. No issues of those kinds were detected in the field research at the study intersections where crashes occurred. The Construction TIA only listed areas where problems were identified.

At the Bluff Rd at Proctor Road intersection, it should be noted that the intersection underwent improvements in 2019 that removed direct school traffic from the school to the intersection via a fifth leg to the intersection and changed the roadway geometry. The conditions were clearly stated in the traffic analysis. That leg is now a gated access with infrequent use. The intersection for all intents and purposes functions as a four-legged intersection. The change in geometric conditions negates crash data prior to that time as the intersection operated differently following the intersection change and continues to operate more safely because of the change.

H.8 Addition to Record Summary

The H.8 traffic engineer included crashes from 2022 at the intersection of SE Dodge Park at SE Cottrell Road which are too recent to show up in ODOT crash data.

Response to added Record: The data for these crashes have not yet been confirmed and finalized by ODOT. It is standard practice for traffic engineers to use ODOT's data in Oregon. The additional reports are noted as having come from the fire department's dispatch records.

Obtaining crash data from a fire department's dispatch records is not a typical resource for crash data information. In Oregon, the Oregon Department of Transportation maintains a statewide database on reported crashes. This database is typically a year behind in reporting crashes but is still accepted as a standard traffic engineering method of evaluating intersections for mitigatable patterns. The H.8 Traffic Engineer does not provide – and presumably the fire department's dispatch records do not provide – reasons for the crashes other than what type of medical attention was provided. This information is not relevant to determining how or why an accident occurred or for drawing conclusions about mitigatable patterns. Of the information provided, no directional, time-of-day, weather conditions, causes, or errors

are reported for these crashes. As such, a functional analysis of them is not possible and no mitigations can be determined.

As a part of the project, the intersection of Dodge Park Blvd at Cottrell Rd is being improved to accommodate on-going operations truck traffic. The proposed intersection improvements will increase the sight distance at the intersection, increase room for turning movements, and widen SE Cottrell Road.

H.8 Comment

“It is reasonable to expect that crash risks will increase as a result of the increased traffic volumes. It is also reasonably likely that crash severity will increase since 50 percent of the peak daily construction trips projected in Table 2 of the Global Transportation Engineering analysis are truck trips.”

Response to Comment: An increase in construction vehicles does not mean there will be an increase in construction vehicles causing crashes nor an increase in crash severity. There are many factors such as speed, volume, seat belts, drowsiness, distraction, and impaired or drunk driving that determine the cause and severity of crashes. All construction Trucks will be operated by professional, trained, licensed drivers that receive comprehensive safe driver training and are directed to follow this training at all times. There is no reason to believe that crash severity will be higher because of Truck traffic.

Exhibit E.34: Les Poole Testimony

E.34 Comment Summary

The rural location has a constrained road system and suffers from increased traffic and decay.

Response to comment: Traffic impacts to pavement have been addressed under the H.8 Exhibit response to comments.

E.34 Comment Summary

Trucks will be lined up on occasions. The Traffic Study assumes they will be spread out during the day.

Response to Comment: The filtration facility site will have sufficient storage onsite to allow for staging of trucks delivering and hauling materials. As is typical for construction projects, the contractor will schedule haul-off and deliveries. It is a reasonable and common practice to assume uniform traffic spreading.

E.34 Comment Summary

Report inadequately considers sight distance impacts on Bluff and other roads. Trucks will enter the road very slowly, creating a high probability of accidents.

Response to comment: Sight distance concerns have been addressed under the H.8 Exhibit response to comments.

Exhibit E.16: Rod Park Testimony

E.16 Comment

“The Global Transportation Engineering Memorandum dated September 2, 2022, regarding the Portland Water Bureau Bull Run Filtration Project Analysis, is for the operational impacts of the water treatment

plant only. The Global Transportation Engineering study does not address construction traffic for the approximately five years of construction. ... The routing nor the number of trips this will generate during the construction of the proposed facility is not addressed."

Response to Comment: Exhibit A.230 - Bull Run Filtration Construction Traffic Impact Analysis and the "Compatibility of Proposed Portland Water Bureau Filtration Facility & Pipelines Construction with Farm Traffic," dated June 2023, which was included in the land use record as Attachment 5 to the Applicant's Pre-Hearing Statement, at staff's Exhibit H.3, address the potential for impacts of construction related traffic and the number of trips generated.

E.16 Comment Summary

"The scope of the study reflected by the map (Exhibit A.31 pg.2) does not geographically represent the farm community of this area for either the construction or operations of the proposed facility. By not having a larger representative scope, the traffic impacts to the farmlands in the community are not evaluated as required." This is inadequate for the farm impact test. Traffic doesn't just appear at the edge of the study area. The boundaries should be much larger to be representative of the farming community.

Response to Comment: The fact that the farming community may extend long distances from the Water Bureau projects does not require a study area larger than is defined in the Water Bureau reports or analysis of additional intersections. Both the operations and construction traffic studies evaluated key intersections in the study area and concluded that, with TDM strategies, impacts to intersection and roadway operations due to construction or operations traffic from the project will be minimal even under conservative analysis assumptions (such as all Commuters arriving and departing during the peak hours) that take into consideration roadway closures due to pipeline construction. There are no significant impacts shown by the operations or construction TIA in the study area. Traffic will tend to disperse and have less impact as it moves further away from the filtration facility and pipelines. Given that, the study area as selected and analyzed is fully adequate.

E.16 Comment Summary

Not including Clackamas County in the study does not provide a full disclosure of traffic impacts and consequences. The applicant's traffic routing and studies also assume Clackamas County will grant access to SE Bluff Road, south of the water plant. If Clackamas County does not grant access, how will traffic be routed and what will be that impact? The access at SE Bluff Road needs to be addressed as part of this application as it is a critical assumption.

Response to Comment: Both the traffic studies for on-going operations and construction traffic include multiple intersections in Clackamas County. It is unclear why this author believes Clackamas County operations have not been considered. Additionally, both the Project TIA and the Construction TIA have been provided to Clackamas County Transportation.

The Construction TIA evaluates a single-site access case (see page 20) and established a limit on total construction trips on SE Carpenter Lane that would serve as effective mitigation to maintain an acceptable Level of Service (LOS) at all study intersections. The Construction TIA single-access evaluation assumed all Truck traffic would travel to and from north of the SE Cottrell Road / SE Carpenter Lane intersection. A subsequent memorandum, submitted concurrently into the record with this response

document, was developed to supplement the Construction TIA evaluation by considering a more conservative trip distribution scenario which routes all Truck trips to and from the south of the SE Cottrell Road / SE Carpenter Lane intersection.

E.16 Comment Summary

There will be “secondary traffic farm impacts from those seeking routes to avoid construction vehicles and later the operational vehicles.” Traffic will seek alternative routes, potentially through farmlands.

Response to Comment: There is no reason to believe that the public will violate the law and trespass on private farmlands to avoid the minor delays caused by construction. The Construction TIA evaluates several detour routes for pipeline construction that utilize public roads.

Traffic volumes during operations will not impact or cause traffic to reroute. Traffic volumes noted in the Project TIA are conservative, and the TIA shows there are no operational impacts even with this conservative analysis.

Exhibit H.12: Paul Willis Testimony

H.12 Comment Summary

The Construction TIA is based on a 5-day a week construction schedule, but the Water Bureau indicated to City Council that the construction schedule will include 6-day work weeks.

Response to Comment: The traffic analysis is not dependent on the number of workdays in the week that construction may occur. In addition, there is no need to analyze a weekend day as background commuter volumes will be less than what is present during the weekday AM and PM peak commute times that are analyzed in the Construction TIA.

H.12 Comment Summary

Figure 2b of the Construction TIA says local traffic, going both ways, that would normally go on Dodge Park Blvd will be detoured onto Carpenter Ln (green line, east of Cottrell Rd). Even though the Construction TIA shows detour routes using other roadways, construction traffic will use Carpenter Ln to directly access local business and because they are paid by the load and there is no enforcement authority.

Response to Comment: Concerns regarding detouring along Carpenter Ln west of Cottrell have been addressed in the H.8 Exhibit Response to comments.

H.12 Comment Summary

The School Board and bus personnel are concerned about the safety of students waiting on the side of the roads for pickup and drop-off when they often walk in front of the bus and possibly not being seen by construction vehicles. Exhibits show congestion at schools during student pick-up and drop-off. There are concerns about increased traffic and injuries.

Response to Comment: Traffic is by law required to stop for school buses. School buses also have safety features that are designed to help children be seen and cross the roads. These laws and safety devices are in place to improve safety. The addition of construction traffic does not change how the laws and safety devices apply or the need to remind children of potential traffic along the roadways. All

construction Trucks will be operated by professional, trained, licensed drivers that receive comprehensive safe driver training and are directed to follow this training at all times.

The comment also is concerned about “the congestion at the schools during pick or drop-off without the increase in plant construction traffic.” That existing condition is caused in part by pick up and drop off that occurs in the roadway itself. This is an existing issue that will not be increased by construction traffic. ORS 811 and its sections define the rule of the road for drivers. Roadway travel lanes are for facilitating traffic through movements and are designed with sufficient width to allow passage of trucks. ORS 811.550(2) prohibits the stopping, standing, and parking of a vehicle whether attended or unattended unless a clear and unobstructed width of the roadway opposite the standing vehicle is left for the passage of vehicles and the standing vehicle is visible from a distance of 200 feet in each direction upon the roadway or the person, at least 200 feet in each direction upon the roadway, warns approaching motorists of the standing vehicle by use of flaggers, flags, signs or other signals. ORS 811.550(2) does not prohibit parking along the roadway for parents to pick up children as long as passage for other vehicles is not inhibited.

Additionally, the comment ignores text in the Construction TIA explaining that: “CM/GCs will take note of start and end times for these schools (listed below) when developing delivery schedules for transporting materials to avoid impacting the schools and creating delays due to construction traffic. Contractors will allot an additional 20 minutes before and after school starts in the morning and an additional 20 minutes before and after school ends in the afternoon to allow for school-related traffic to dissipate.”

Exhibit E.7 - Riegelmann Testimony

E.7 Comment Summary

Roadways are narrow, full of potholes, and no sidewalks, or even adequate shoulders. It is extremely dangerous for children to walk to school. Often, East Orient school pick-up line has 20 plus cars lined up on Dodge Park Blvd eastbound. Any vehicle wanting to pass must enter the opposing west bound lane to get by. This line then winds around the corner of 302nd to the school. West Orient has the same issues facing west bound on Bluff Rd. to the school. These conditions are evident from 2:30 to 4:30pm every school day afternoon. Drop-offs in the mornings are the same situation, with Dodge Park Blvd, (Both Directions) 302nd and Bluff Rd. being the most affected. Lusted Rd. (Both Directions) and 302nd and 282nd are impacted, with traffic at a stand-still waiting to enter the parking lot.

Lusted Rd. has no acceptable shoulder for walkers.

Response to Comment: The shoulders along Lusted Rd and other area roadways are an existing condition that will not change with the addition of construction vehicles. Pedestrians walking along shoulders that are narrow will typically do so with heightened awareness of their surroundings. Roadways are designed to accommodate Trucks and construction traffic as the haul routes are designated freight routes.

Additional discussion is provided under the H.8 Comment on the physical condition of roadways and intersections.

Additional response provided under H.12 response to comment concerning school pick-up and drop-off and traffic congestion.

E.7 Comment Summary

Traffic analysis of the 302nd Ave at Lusted Rd. Intersection was conducted on a Wednesday morning. Wednesdays are a late start day for these schools, and little traffic was present.

Response to Comment: Traffic counts are done during typical weekdays (Tuesday through Thursday). The late start for March 15, 2022 was an 8:35 am start which would have school traffic arriving during the 7 am to 9 am peak count period. Therefore, the school traffic would have been included in the AM Peak hour traffic count shown in the Construction TIA. The Wednesday late start times are noted on page 21 of the Construction TIA and were considered.

Oral Testimony – Riegelmann

Oral testimony repeats concepts in the written testimony.

Exhibit E.8 – Tammy Rickman (First Student) Testimony

E.8 Comment

We have identified hundreds of displaced students located down roads under construction or are impassable for considerably long periods. Most students must be picked up and dropped off directly in front of their homes. The streets that will be closed due to the proposed construction by PWB will make it impossible for students to access their bus stop locations safely.

Response to Comment: The pipeline construction will not make it impossible for students to access bus stop locations for long periods of time. The pipeline construction zone moves approximately 30 to 50 feet per day (trenched construction). For this reason, the impact on any one property is temporary and limited.

Additionally, the Water Bureau has met with transportation providers. From those meetings it is understood routes change annually depending on where students live. The Construction TIA outlines that the Water Bureau and the contractor will coordinate with the schools and districts on schedules and bus routes that need to be maintained and those that can be temporarily modified.

E.8 Comment

The traffic alone from the hundreds of trips for the large trucks coming in/out of this rural neighborhood every year will create serious safety issues for students and buses.

Response to Comment: As outlined on page 11 of the Project TIA, truck traffic associated with on-going Filtration Facility operations is forecast to be up to 25 per week. Only a fraction of these trips will occur at times when students and buses are active along the roadways.

Further discussion has been provided under the H.8 Response to Comments.

Exhibit E.25 Exhibit Cathy Keathley (Gresham-Barlow School Board) Testimony

E.25 Comment Summary

The concerns of Gresham-Barlow School District as stated in the resolution were 1) there are no specific plans to ensure student and community safety; 2) there are no specific plans to mitigate traffic concerns, and 3) there are no specific plans for running buses while roads are torn open to lay pipe.

Response to Comment:

Item 1: The roadways are designed to accommodate the type of traffic that the construction of the Project will add to the transportation network. Roadways that are currently degraded or anticipated to degrade will be improved by the PWB contractor in a “fix it first” approach with additional conditions of approval to leave in like or better condition after construction. This is outlined in the **Staff Report and Transportation Planning Comments** and with the Water Bureau’s proposed additional details to the County recommended conditions outlined in **Exhibit H.3 (Pre-Hearing Statement by the Applicant)**.

Item 2: The Construction TIA and subsequent TDMP identifies mitigation strategies. The Construction TIA is to identify issues and areas of concern and identify how those can be mitigated.

Item 3: This is addressed within the Construction TIA on page 20 and under the E.8 Response to Comments.

E.25 Comment

“PWB said the roads would be shared with pedestrians, including our students. The roads are simply not big enough to accommodate construction and other traffic, let alone pedestrians/students.”

Response to Comment: This is incorrect. The Construction TIA on page 18 states under Pedestrian and Bicycle Accommodation During Construction that bikes will share the roadway as they do today. Pedestrians will be accommodated around the work zones via similar or better facilities.

E.25 Comment

“There was no discussion of the long-term impacts to the roads after years of accommodating the increased traffic of trucks with that type of tonnage. The estimate for just the 5+ year construction period is 308,000 heavy truck trips and over 700,000 workforce trips to these roads. That means a disruption to our students trying to get to school in private cars as well as buses.”

Response to Comment: This has been addressed under the H.8 Response to Comments and earlier E.25 comments. Students getting to school in private cars are accounted for as part of the Construction TIA’s background traffic in the area. The Construction TIA finds that, with a TDM Plan in place, the area’s transportation network will operate at or above the County’s level of service requirement during the temporary construction period.

E.25 Comment

“The study was done on 2 separate days. Thursday, Feb 28th and Wednesday, March 15th. Both days the study was done from 7-9 am and 4-6 pm. Our schools are all out by 4 pm and most buses are done with routes by then with the exception of a couple of middle school buses. That leaves only the 7-9 am time to assess school disruption and on Wednesdays the elementary and middle school do not start until 9:35 and 10:05. Additionally, the high school has activities through the evening, and most often, every evening.”

Response to Comment: The referenced study was a count of AM and PM peak hour trips, which is standard for traffic impact analysis. Schools let out typically in the afternoon prior to the PM peak. As the PM peak does not coincide with when school gets out in the afternoon, a separate analysis was conducted at the schools, noted on pages 20 to 23 of the Construction TIA, to identify additional impacts to schools during drop-off and pick-up times. Events outside of drop-off and pick-up times will typically be less and would not create issues above any observed during the higher volume drop-off and pick-up times. Similarly, late start days that are outside of the AM peak hour would not create issues above any observed during the higher volume AM peak hour.

E.25 Comment Summary

The highest volume intersections in regard to our schools were not assessed at all.

Response to Comment: The intersections required for analysis were coordinated with Multnomah County Transportation Planning. This considered schools within the project study area. Analyzing a broad selection of intersections, as was done in the Project TIA and Construction TIA, provides general information about the transportation system's overall operations.

Oral Testimony – Keathley/GBSD

Oral testimony repeats concepts in the written testimony.

Exhibit D.1 and E.10 Rural Fire Protection District 10 Testimony





D.1 and E.10 Comment Summary

Rural Fire District 10 (RFPD10) indicates that on a day some of the 2022 traffic counts were collected, February 23, 2022, the temperature ranged from a low of 26°F to a high of 37°F with winds of 20 to 25 MPH, and argues that as a result of the weather conditions the traffic counts were not collected on a typical day.

Response to comment: RFPD10 does not provide a source for the weather data. However, assuming those weather conditions are accurate, they would not have impacted the validity of the traffic counts. Cold temperature and winds are not considered an issue for traffic counts. They do not create adverse pavement conditions. If ice, snow, or sleet is present that impacts the pavement and can adversely impact vehicle travel, traffic counts are not conducted. A professional counting firm performs traffic counts and will flag when adverse weather conditions would impact count data. Adverse weather conditions were not present on February 23, 2022 when some of the counts were done. Travel conditions are typical for that day.

Historic weather conditions were obtained from [Detailed Weather Forecast for February 24 in Portland, Oregon, United States \(world-weather.info\)](https://www.world-weather.info)

February 23, 2022

	Atmospheric conditions and temperature °F	RealFeel °F	Atmospheric pressure inHg	Wind speed mph	Humidity
Night	 +27°	+18°	30.4	▲ NE 7.6	38%
Morning	 +23°	+14°	30.4	▼ N 8.7	45%
Day	 +36°	+27°	30.4	▲ NE 13.6	27%
Evening	 +34°	+27°	30.3	▼ N 8.9	43%

D.1 and E.10 Comment Summary

RFPD10 claims that given the collection date of the 2022 traffic counts the Project TIA “fails to consider the considerable traffic generated by Oxbow Regional Park and YMCA Camp Collins that is higher during warmer months (May – mid-October) when construction activity will be high.”

Response to Comment: YMCA Camp Collins is located at Oxbow Regional Park. Oxbow Regional Park is located along the Sandy River off of SE Oxbow Park Road, approximately 3 roadway miles northeast of the filtration facility site, and outside of the project study area.

The TIA and existing conditions analysis meets the TIA requirements of the **Multnomah County Design Standards, Section 1.1.3**. A seasonal adjustment of traffic volumes is not required by Multnomah County. This is not uncommon for urban areas and areas on the urban fringe.

D.1 and E.10 Comment Summary

RFPD10 also claims that generally TIAs are designed to assess level of service (LOS) at intersections and that TIAs do not evaluate road safety between intersections.

Response to Comment: The claim is not accurate. TIAs are not limited to LOS analysis; they also include trip generation characteristics that can affect traffic safety, access management, street capacity, or other known traffic deficiencies in the vicinity of the site (per the **Multnomah County Design Standards, Section 1.1.3**).

Both the Project TIA and the Construction TIA identify existing and during construction LOS at study intersections. However, both TIAs also provide a traffic safety analysis. The Construction TIA also specifically addresses the physical conditions of roadways and pedestrian and bicycle safety through construction areas. Safety concerns related to pedestrians and bicycles using the roads within the project area and farm vehicles are further addressed in this response.

Additional traffic and transportation related objections and concerns identified in the RFPD10 testimony are addressed above or elsewhere in the record.