Suite 142, Sherwood, OR 97140

## Technical Memorandum

To: Hearings Officer, Multnomah County

From: Michael Ard, PE
Date: August 7, 2023
Re: Bull Run Water Facility - Mitigation Plan Review

This memorandum is written to provide a technical review of the mitigation plan materials provided by Global Transportation Engineering and Globalwise, Inc.

Based on the materials provided in the record and our analysis, the proposed mitigation plan is insufficient to address the transportation impacts of the proposed project. Specifically, the projected traffic volumes are inconsistent with preserving the safety, character and function of the surrounding rural community and maintaining the viability of farming practices in the vicinity.

## Traffic Volumes and Operation

Global Transportation Engineering has prepared several reports in the record related to traffic and transportation. The reports generally conclude that construction of the proposed facility will result in unacceptable operation of area roadways and intersections absent mitigation. As described in detail in our prior review of these materials, many of the assumptions underlying that analysis do not account for the actual impacts of construction traffic. As yet we have seen no additional analysis which addresses the numerous deficiencies we identified in our memorandum dated June 30, 2023.

The latest memorandum dated June 27, 2023, provides a succinct summary of Global Transportation Engineering's recommendations. It acknowledges that "the potential does exist" for traffic volumes to be higher than those projected in their report, but generally recommends a Transportation Demand Management (TDM) strategy which "monitors construction traffic and implements mitigation as necessary."

There are several problems with the proposed TDM strategy:

1) The primary strategy of splitting traffic between a northerly access on SE Carpenter Lane and a southerly access on SE Bluff Road is fundamentally flawed. It relies on heavy use of the secondary access on SE Bluff Road for construction traffic; however, Clackamas County's notice of decision allowing construction of this southerly access specifically states that it does not authorize use of the emergency access road for construction traffic. Such a restriction is appropriate given that the adjacent intersection of SE Bluff Road at SE Proctor Road has a crash rate more than twice the
level which is required to place it among the top 10 percent of high crash intersections of its type in the state of Oregon.
2) With only one point of access, the secondary strategy of limiting peak-hour trip volumes on SE Carpenter Lane to 387 or fewer trips will require spreading the arrival and departure periods for construction traffic over several hours, making coordinating on-site construction activities impractical and ensuring that site traffic must travel during the periods of school operation. This "peak spreading" also ensures that local traffic in the immediate site vicinity will be inundated with conflicting traffic over the period of several hours in the mornings and the evenings.
3) Another potential mitigation option provided was to "provide a commuter shuttle"; however, a shuttle will have no impact on the need for truck traffic to reach the site and can at best only reduce commuter traffic volumes. Absent an extremely robust shuttle plan, traffic volumes are likely to remain well above permissible levels, and even if a sufficiently robust shuttle program were implemented (and accepted by a sufficient number of employees), the shuttle program would require identification of remote parking facilities for numerous employees. The impacts of largescale parking demands at remote facilities are not addressed in the analysis.
4) A final mitigation option was to "Develop a rideshare or carpooling incentive program." Such programs generally do not substantially reduce travel demands and cannot be relied upon to alleviate transportation demands on the scale required for this project. The applicant fails to provide any details which would allow a detailed review of this option since it is cited as being applicable only "in the event that these strategies are needed." It is clear that significant strategies will be needed to address traffic demands far in excess of capacity; however no detailed plans of any kind are provided.
5) The proposed mitigation plan is reactive, not proactive. It permits unacceptable impacts to occur, with documentation coming from tube counters placed in the roadway, then asks the contractor in arrears to implement mitigation measures. While the contractor may prepare a "two-week look ahead of construction activities," the purpose of a transportation analysis is to identify a workable plan in advance of project approval, not at some future date after adverse impacts are already occurring.

Rather than prepare a Transportation Demand Management plan which can ensure safe and acceptable operation of the proposed facilities necessary to satisfy MCC 39.7515 subsections (C), (D), and (F), the applicant has only stated that they will try to do what they can to reduce the unacceptable impacts, with neither assurances that the transportation system will meet the relevant operational standards nor sufficient detail regarding potential mitigation approaches to determine that any mitigation plan is feasible. As such, the reports provided cannot be relied upon to ensure that the proposed conditional use will meet the applicable transportation standards.

## Transportation Safety

Even if a sufficiently robust mitigation plan was developed to limit peak-hour traffic volumes to no more than 387 vehicles per hour on Carpenter Lane, the projected change in traffic would represent an increase of approximately 30 times the existing peak-hour traffic volumes on the roadway. Spreading start times would mean maintaining 387 vehicles per hour over the span of several hours. To date, there has been no proposal to provide safe facilities for pedestrians or people riding bicycles on this roadway, which will be inundated with construction traffic for long stretches every day.

As an example, the City of Portland allows a roadway to be constructed as a "Shared Residential Street" where traffic volumes are below 500 vehicles per day, the roadway has traffic calming devices such as speed bumps installed, and adequate sight distances and lighting are provided along the roadway. For residential streets, peak-hour volumes are approximately 10 percent of the daily traffic volumes, meaning that under Portland's design standards a street which accommodates more than 50 peak-hour trips requires construction of dedicated sidewalk facilities for pedestrians.

Traffic volumes on SE Carpenter Lane currently fall well below the threshold at which installation of sidewalk facilities is necessary. But with construction traffic the roadway volumes will be far in excess of any level which can safely permit shared use of the roadway. The fact that a high percentage of the projected volume will be heavy construction vehicle truck traffic significantly exacerbates this concern. Providing safe facilities on this roadway in order to satisfy the requirements of MCC $39.7515(\mathrm{~F})$ would at minimum require construction of new sidewalks along the roadway. However, this need conflicts with the requirements of MCC $39.7515(\mathrm{D})$, which requires that the proposed conditional use "Will not require public services other than those existing or programmed for the area."

It is clear from the analysis that meaningful improvements extending beyond the motor vehicle travel lanes will be necessary for safety on SE Carpenter Lane. Other roadways in the site vicinity may be similarly impacted, particularly under detour conditions when traffic may be routed onto local streets. The fact that these streets currently operate acceptably without dedicated facilities for people walking and biking is not sufficient to conclude that they can safely accommodate the projected increases in traffic. The fact that the applicant has not analyzed these impacts or suggested any specific mitigation for affected roadways is a material omission in the traffic study. As such, the study cannot be relied upon to conclude that the transportation system can operate safely with approval of the proposed project.

In addition to concerns regarding safety for pedestrians and people riding bicycles, several area intersections have been identified as having crash rates above the $90^{\text {th }}$ percentile for similar intersections in Oregon. No safety mitigations have been proposed for these intersections. The addition of increased traffic volumes

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would be expected to result in increased conflicts and crashes. Further, the high percentages of truck traffic anticipated mean that crash severity is likely to increase as well.

Speed data was collected in the vicinity of the high-crash intersections of SE Bluff Road at SE $362^{\text {nd }}$ Avenue, SE Dodge Park Boulevard at SE Cottrell Road, SE Lusted Road at SE Altman Road, and SE Oxbow Drive at SE Altman Road. The recorded $85^{\text {th }}$ percentile speeds were as follows:

1) On SE Bluff Road west of SE 362nd Avenue - 49 mph eastbound, 51 mph westbound
2) On SE Bluff Road east of SE 362nd Avenue - 50 mph eastbound, 53 mph westbound
3) On SE Dodge Park Blvd west of SE Cottrell Road - 54 mph eastbound, 58 mph westbound
4) On SE Lusted Road east of SE Altman Road - 44 mph eastbound, 46 mph westbound
5) On SE Oxbow Drive east of SE Altman Road - 49 mph eastbound, 50 mph westbound

The potential for collisions with heavy vehicles at the measured travel speeds significantly exacerbates the existing safety concerns at these already high crash locations.

## Impacts on Farm Practices

The "Compatibility of Proposed Portland Water Bureau Filtration Facility \& Pipelines Construction with Farm Traffic" report dated June 2023 by Globalwise, Inc. includes eleven recommended constraints "to support farm traffic throughout pipeline construction". These include limitations on the timing of specific road and intersection closures. These limitations are intended to "reduce impacts on farmers using the public rights-of-way for farm purposes.

Notably, the report attempts to identify periods where construction activities will not materially impact farm operations. The most significant of these periods appears to be the month of October, when they would recommend that closures be permitted for the segment of SE Dodge Park Boulevard east of SE Cottrell Road, closure of the intersection of SE Dodge Park Boulevard at SE Cottrell Road itself, and the closing of Dodge Park Boulevard "to cross the road onto the private property at the west end of the Finished Water Pipes".

Ard Engineering met with several local farmers on July 19, 2023, to discuss significant concerns regarding the proposed mitigation plan. The resulting comments ranged from general concerns which will arise throughout the year to specific concerns which impact their facilities uniquely and concerns regarding specific times of year. These included:

- The identified low season when the most significant road and intersection closures are permitted is not a low season for many farm uses. "August through October is one of the busiest field work
seasons for some farm uses," one farmer stated, "We do a ton of fall planting of trees and cover crop."
- One farmer indicated that they spray trees with copper in the fall. The timing of the spraying is critical, since the trees need to lose most of their leaves prior to spraying, and they need about 10 dry working days with no wind to accomplish the task. The trees need to be dry prior to spraying and need to remain dry long enough after spraying for the chemicals to be absorbed. This task cannot be scheduled in advance since the timing is dependent on temperature (which drives trees to lose their leaves) and weather. If the task cannot be completed it is "like Russian Roulette," with the potential for loss of 25 to 30 thousand trees, as well as loss of reputation when unable to fulfill deliveries. This need directly conflicts with the identified low season when the most significant road closures are scheduled.
- Putting 16-foot-wide implements on narrow roads with blind curves is a bad idea. Multiple pieces of farm equipment are 16 feet wide, including the equipment used to work soil. A photo illustrating the width of one piece of farm equipment is provided below. Having significant traffic volumes traveling in the opposing direction would substantially impact the viability of travel routes even under non-construction conditions.


Farm Equipment Approaching a Guardrail-Constrained Road Section

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- Road closures will force farmers to use alternate travel routes to access fields. However, some of the required alternative travel routes are not viable for large-scale equipment travel due to narrow roadway widths, roadside obstacles which further limit the usable roadway width, sharp curves which restrict sight lines and impact safety, and roadway grades on hills. One farmer stated, "There is no reasonable alternative route available. That would stop us."
- Where roadside ditches exist, they act as barriers to entry to fields. Attempting direct access away from designated entry points can result in water quality issues, particularly during wet conditions, and entry is often restricted by fences. Accordingly, farmers cannot rely upon using direct access from adjacent roads into fields away from dedicated access driveways.
- One purported solution to impassable roads was to leave farm equipment in the fields overnight. However, people vandalize and steal diesel and batteries out of vehicles, so farmers strongly prefer not to leave vehicles in the fields overnight. Vehicles are rarely left overnight in fields currently, and farmers actively try to avoid the practice.
- Trucker schedules - Narrow roads where vehicles cannot pass make shipping "unreliable." Truckers operate within constraints limiting the hours they can drive without rest, and shipment schedules often need to be coordinated among several drop-off and pick-up locations. Shippers have stated on multiple occasions that "If I can't get in and out right now, I'll be here overnight." Accordingly, even relatively modest initial delays to delivery vehicles can become overnight delays due to trucker schedules. Further, a parked truck at the loading dock obstructs dock access for other trucks, resulting in delays to multiple shipments, and prolonged, ongoing access concerns may result in shippers refusing to service local agricultural uses, resulting in the need for the businesses to do their own deliveries. This represents a significant and costly change to their existing farming practices.

The materials prepared by Globalwise on behalf of the applicant opine that detours are common concerns for farmers, and they already have to deal with them for road construction and emergency conditions. However, emergency impacts generally have very short durations which do not impact long-term equipment and shipping needs, and do not have implications regarding long-term delivery reliability which would cause shippers to consider refusing service. Detours and delays associated with typical road maintenance occasionally have sustained impacts over multiple days; however, again they do not generally impact long-term delivery reliability, and they ultimately promote improved mobility within the local area, benefiting the transportation system for farmers and residents.

In contrast, the proposed conditional use would have sustained impacts over a period of multiple years and would do nothing to promote or enhance mobility for local residents, farmers, and businesses. The project impacts are not necessary for maintaining a viable transportation system in the site vicinity and result solely from the desire to locate a large-scale conditional use within an incompatible area.

## Conclusions

The multiple failures of the proposed project mitigation plans do not reflect a failure of the applicant's consultants. Rather, they are a byproduct of an underlying truth: The scale and intensity of the proposed conditional use is not compatible with the character of the surrounding community. As such, the applicant's proposed plan cannot mitigate impacts to the transportation system, preserve efficient access to the surrounding community, provide for public safety, protect people walking and biking in the impacted area, and ensure that the proposed conditional use will not change farming practices and costs.


Appendix

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| 13:00 | 0 | 0 | 0 | 0 |
| 14:00 | 1 | 0 | 0 | 1 |
| 15:00 | 0 | 0 | 0 | 0 |
| 16:00 | 0 | 0 | 0 | 0 |
| 17:00 | 1 | 0 | 2 | 1 |
| 18:00 | 0 | 0 | 0 | 2 |
| 19:00 | 0 | 0 | 0 | 0 |
| 20:00 | 0 | 0 | 0 | 0 |
| 21:00 | 0 | 0 | 0 | 0 |
| 22:00 | 0 | 0 | 0 | 0 |
| 23:00 | 0 | 0 | 0 | 0 |
| Total | 2 | 0 | 2 | 5 |
| Percent | 0.7\% | 0.0\% | 0.7\% | 1.9\% |
| AM Peak |  |  |  | 10:00 |
| Vol. |  |  |  | 1 |
| PM Peak | 14:00 |  | 17:00 | 18:00 |
| Vol. | 1 |  | 2 | 2 |
| Total | 2 | 0 | 2 | 5 |
| Percent | 0.7\% | 0.0\% | 0.7\% | 1.9\% | 15th Percentile :

50th Percentile : 85th Percentile 95th Percentile

41-50 MPH


[^0]Latitude: $0^{\prime} 0.0000$ Undefined
Longitude: $0^{\prime} 0.0000$ Undefined





10 MPH Pace Speed әכed u! fuәગıəd

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## Portland Water Bureau T3-2022-16220 Review Comments

1 message
mike ard [mike.ard@gmail.com](mailto:mike.ard@gmail.com)
To: lup-comments@multco.us, lup-hearings@multco.us

External Sender - Be Suspicious of Attachments, Links, and Requests for Payment or Login Information.

Please place the attached materials into the record for the proposed Portland Water Bureau conditional use application.
Thank you,
Michael Ard, PE
(503)537-8511

ARD
ENGINEERING

Ard Engineering_PWB Mitigation Plan Review_080723.pdf 943K


[^0]:    10 MPH Pace Speed əכed u! juəગఎə
    
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