

MEMORANDUM

DATE: March 19, 2019

TO: Ted Millar | TLM Holdings, LLC

FROM: Scott Mansur, P.E., PTOE | DKS Associates
Lacy Brown, Ph.D., P.E. | DKS Associates

SUBJECT: Aurora Airport Proportionate Share Evaluation

Several improvements were identified to mitigate the impacts of the proposed zone change on the surrounding transportation system. These projects are recommended based on the operational analysis of the future traffic conditions in the study area. Identified improvements must mitigate project impacts to meet the greater of the mobility standard or the no-build condition. Project mitigations are broken down by year of completion 2022 and future year 2037.

Table 1 below lists the recommended mitigations with their respective planning level cost estimates. ODOT maintains jurisdiction of OR-551 and ODOT approval shall be required for all proposed mitigations along this facility. At the time any official request is submitted, the request shall include an operational and queuing analysis, preliminary design layout, and a preliminary signal operations design (PSOD).

Table 1: Recommended Mitigations with Cost Estimates

Location	Mitigation	Planning Level Cost Estimate
Year of Completion 2022		
OR-551/Arndt Road	Eastbound/Westbound Left Turn Lanes ^a	\$ 4,500,000
OR-551/Ehlen Road	Eastbound/Westbound Left Turn Lanes ^b	\$8,311,000
Airport Road/Ehlen Road	Signalization and Eastbound Left Turn Lane ^c	\$2,000,000
Future Year 2037		
Airport Road/Arndt Road	Westbound Right Turn Lane ^a	\$ 1,500,000

^aImprovement also includes any necessary traffic signal modifications

^bODOT 2018-2021 STIP: Project Key #18664. Project also includes a local county road connecting OR-551 and Boones Ferry Road.

^cImprovement also includes a westbound right turn lane and dedicated southbound left and right turn lanes.

Although the OR-551/Ehlen Road intersection does not experience a significant impact from the added project trips, there is a slight increase in delay at the intersections. Additionally, ODOT has a project identified in the ODOT 2018-2021 STIP draft project list (Project Key #18664) that has already been estimated to cost \$8,311,000. For the purpose of calculating the proportionate share of the proposed rezoning, this project was included in the mitigations.

PROPORTIONATE SHARE METHODOLOGY

Below is a summary of a reasonable proportionate share calculation of the project impacts that has been approved by other agencies based on the following criteria.

1. Determine for each deficiency the appropriate off-site mitigation and the cost of each mitigation measure. (Use the ODOT 2018-2021 STIP cost estimates where applicable.)
2. Determine when the cause of each mitigation is triggered:
 - a. Based upon existing conditions alone
 - b. Base upon existing + future background conditions (in this study 2022 or 2037)
 - c. Based upon existing + future background + proposed project trips (2022)
3. Compute proportionate share percentage as follows:
 - 2a: Take proposed project total entering volume (TEV) at the intersection being mitigated in the peak period where the deficiency occurs and divide by existing TEV
 - 2b/c: Take proposed project TEV and divide by the sum of background growth TEV + proposed project TEV

PROPORTIONATE SHARE SUMMARY

All of the proposed mitigations in this study treat intersections that are currently failing to meet mobility targets or operating standards under existing conditions (scenario 2a). Table 2 below shows the peak hour traffic volumes used to calculate proportionate share percentages. The peak hour when mitigation was triggered at each intersection is also identified.

Table 2: Proportionate Share Calculations

Location	Mitigation	Existing Volume (Peak Hour)	Project Trips (Peak Hour)	Proportionate Share (Peak Hour) ^a
OR-551/Arndt Road	Eastbound/Westbound Left Turn Lanes	1,964 (AM)	53 (AM)*	2.7% (AM)
		2,555 (PM)	51 (PM)*	2.0% (PM)
OR-551/Ehlen Road	Eastbound/Westbound Left Turn Lanes	1,546 (AM)	36 (AM)	2.3% (AM)
		2,082 (PM)	36 (PM)	1.7% (PM)
Airport Road/Ehlen Road	Signalization and Eastbound Left Turn Lane	917 (AM)	52 (AM)	5.7% (AM)
		1,282 (PM)	51 (PM)*	4.0% (PM)
Airport Road/Arndt Road	Westbound Right Turn Lane	1,636 (AM)	91 (AM)*	5.6% (AM)
		2,140 (PM)	87 (PM)	4.1% (PM)

^aProportionate Share = (Project Trips)/(Existing Volume)

*Peak hour in which the addition of project trips degrades intersection operations

Bold/Highlighted = Percentage applied for proportionate share calculations

At OR-551/Arndt Road, project trips affect operations during both AM and PM peak hours, so the higher proportionate share percentage was applied. At Or-551/Ehlen Road, the intersection operations are not degraded in either peak hour, however in an effort to be conservative a proportionate share percentage was still applied for mitigations at this intersection. For the other two intersections, only one peak hour triggered the need for mitigations and the associated proportionate share percentage was applied.

Table 3 summarizes the applicant's proportionate share contribution based on the information and methodologies outlined above. As shown, the applicant's total proportionate share of all improvements is \$476,653.

Table 3: Proportionate Share Costs

Location	Mitigation	Proportionate Share Applied	Cost Estimate	Proportionate Share Contribution
OR-551/Arndt Road	Eastbound/Westbound Left Turn Lanes	2.7%	\$4,500,000	\$121,500
OR-551/Ehlen Road	Eastbound/Westbound Left Turn Lanes	2.3%	\$8,311,000	\$191,153
Airport Road/Ehlen Road	Signalization and Eastbound Left Turn Lane	4.0%	\$2,000,000	\$80,000
Airport Road/Arndt Road	Westbound Right Turn Lane	5.6%	\$1,500,000	\$84,000
Total			\$16,311,000	\$476,653