

Draft DSR Review Comments &
Responses

Appendix M

Duben Avenue Upgrade
MOA / PM&E Project No. 12-32, 12-33
Review Comments Summary
Draft DSR

No.	Reviewer	Date	Com. No.	Sheet No. / Page No.	Comment	Response
1	Lori Schanche, MOA, Non-Motorized Transportation Coordinator	2/10/2014	1	78	We are pleased that this project will be including pedestrian facilities on both sides of the roadway.	Noted.
2	Lori Schanche, MOA, Non-Motorized Transportation Coordinator	2/10/2014	2	Gen	We request that shoulder lines be striped so that they can function as paved shoulder bikeways.	Duben Avenue is designated as a local roadway with onstreet parking permitted and no striping. Duben Avenue is not included as bike route in the Anchorage bicycle plan.
3	Karleen Wilson, MOA, Addressing Official	2/13/2014	1	Page 6 (14 of 488)	4. Planned Area Development b) Street name is Boundary AVENUE (not Road) please correct	Have done.
4	Karleen Wilson, MOA, Addressing Official	2/13/2014	2	Page 6 (14 of 488)	4. Planned Area Development c) Street name is Boundary AVENUE (not Road) please correct	Have done.
5	Karleen Wilson, MOA, Addressing Official	2/13/2014	3	SD2 of SD7 (155 of 488)	SKyhaven Cir (not SHyhaven)	Have done.
6	Karleen Wilson, MOA, Addressing Official	2/13/2014	4	232 of 488	Civil Storm Proposed Conditions Profile View (Boundary to Skyhaven – Existing 10yr-24hr Time: 10.08) a. Villa Circle (not Vila)	Have done.
7	Karleen Wilson, MOA, Addressing Official	2/13/2014	5	Sheet 2 of 2 (pdf page 297 of 488)	Street name should be Fall Leaf Circle on the north side of Duben (not Gaylene on both sides)	Have done.
8	Karleen Wilson, MOA, Addressing Official	2/13/2014	6	Anchorage Vicinity Map, Figure 1 (page 433 of 488)	Bragaw ST from Providence Dr/University Dr South was renamed Elmore Rd in 2007, please correct annotation just north of Tudor Rd as well as south of Abbott Rd	Have done.
9	Karleen Wilson, MOA, Addressing Official	2/13/2014	7	Anchorage Vicinity Map, Figure 1 (page 433 of 488)	Street name between E Northern Lights & Providence Dr is UAA Dr, not Providence Dr- please correct annotation	Have done.
10	Karleen Wilson, MOA, Addressing Official	2/13/2014	8	Anchorage Vicinity Map, Figure 1 (page 433 of 488)	Street name is Seward Hwy (not NEW), please correct annotation	Have done.
11	Karleen Wilson, MOA, Addressing Official	2/13/2014	9	Anchorage Vicinity Map, Figure 1 (page 433 of 488)	Street name is Turpin ST (not Rd) please correct annotation	Have done.
12	Karleen Wilson, MOA, Addressing Official	2/13/2014	10	Borehold Location Map, Figure 2 (page 435 of 488)	Street name is Fall Leaf Circle (not Gaylene) north of Duben Ave	Have done.
13	Karleen Wilson, MOA, Addressing Official	2/13/2014	11	Geology Map, Figure 3 (437 of 488)	Street name is Zappa PL (not St)	Have done.

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14	Karleen Wilson, MOA, Addressing Official	2/13/2014	12	Geology Map, Figure 3 (437 of 488)	Street name is Melody PL (not St)	Have done.
15	Steven Ellis, MOA WMS, Flood Hazard Administrator	2/13/2014	1		Provide all storm water treatment and sizing data to Jeff Urbanus.	Will provide during design.
16	Steven Ellis, MOA WMS, Flood Hazard Administrator	2/13/2014	2		On Page 20, Section B. Area Drainage Design Guidance, references the Chester Creek Watershed Plan. The goals were to improve water quality and manage quantity. One example was to keep road surfaces flush with the surrounding land area so that water can be infiltrated. The water stays in the local area, the pollutants are not transported or introduced into the storm drain system and would reduce the peak flows in the creek. Images in the DSR shows roadways currently developed in this manner. The plans show construction of curb and gutter which will make it very difficult to meet the goals of the Chester Creek Watershed Plan. Please inform WMS what design elements will be implemented to meet the goals of the watershed plan.	Water quality improvement will be accomplished by stormwater treatment structures placed at the end of the proposed storm drain lines prior to discharge into the existing system. Implementation of LID's were reviewed but are not appropriate due to lack of right-of-way, high groundwater and high density of housing. Will include a statement in DSR about LID's on Duben project.
17	Eric Armagost, MOA Traffic Signals, Assistant Traffic Engineer II	2/14/2014	1	App D	Per DCM, synchro models need to use existing timing and phase to compare with future. Existing timing and phase can be obtained from the MOA Traffic Division.	LOS and Synchro data has been updated based on current MOA timing
18	Eric Armagost, MOA Traffic Signals, Assistant Traffic Engineer II	2/14/2014	2	32	Consider removing gas station driveway access on Duben near Muldoon intersection. Gas Station has driveway access on Muldoon and another driveway east of current driveway. Any drivers exiting Gas Station on Duben heading West are most likely going straight or turning left crossing over the right turn only lane and entering the middle of the queue for thru and blocking right turning traffic.	Will consider during the design process.
19	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1a	General	The report indicates that Duben Avenue has an existing 85th percentile speed of 26-28 mph. It is unrealistic to expect compliance with a posted speed of 20MPH after any improvements are in place.	Have changed speed to 25 MPH per meeting with MOA Traffic on 3/27/14.
20	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1b	General	Traffic Safety recommends that other roadway cross-sections be considered for the section of Duben between Patterson and Muldoon. Our concerns include over-building the road – which will likely result in exacerbation of the existing speed issues. Three alternatives in particular that we recommend be evaluated include • a modified cross-section for a standard (curb, gutter, and sidewalk on both sides) urban roadway,	Per meeting with MOA Traffic on 3/27/14 have recommended a 31-foot wide section (BOC to BOC) with an attached 8-foot pathway and 5-foot sidewalk.
21	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1c	General	• an alternative that provides curb, gutter and sidewalk only on one side	Per meeting with MOA Traffic on 3/27/14 will not present road section with curb, gutter and sidewalk only on one side. This section would require a ditch to catch drainage and cause additional right of way impacts.

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22	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1d	General	<p>• a single attached widened pedestrian facility on one side of the roadway as recommended by the cited Muldoon Road at Duben Avenue Pedestrian Safety Improvements Draft Design Study Memorandum on page 6 of the report. The proposed 5' sidewalk on both sides of the street does not provide for use by bicycles and pedestrians and could result in inexperienced bicyclists riding on the roadway. The single widened pathway would be a significant improvement over existing conditions by providing enhanced pedestrian facilities that could be used by multiple user groups, provide street maintenance an area to place snow other than on the sidewalks, and reduce the overall impacts to adjacent properties. A commitment from Street Maintenance to keep the single pedestrian pathway clear of snow as part of its normal snow plowing operations should be sought if a single pedestrian facility option is selected</p>	Per meeting with MOA Traffic on 3/27/14, PM&E was not in favor of a single pedestrian facility.
23	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1e	General	A reduced roadway cross section of either 30' or 31' as measured from back of curb to back of curb with a design and posted speed of 25mph should be an option considered. This proposed roadway cross section provides 2-10' travel lanes plus space for parking on one side.	Per meeting with MOA Traffic on 3/27/14 have recommended a 31-foot wide section (BOC to BOC) with an attached 8-foot pathway and 5-foot sidewalk.
24	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1f	General	Lane and shoulder striping is not provided on local roadways; parking is regulated by AMC Title 9.30.040.	Lane and shoulder striping is not recommended in Draft DSR. Only striping at Muldoon is recommended.
25	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1g	General	Duben Avenue is a local roadway which functions as the neighborhood collector and would appear to be the primary access route for emergency vehicles; speed humps should not be proposed or planned.	Speed humps are proposed based upon the Northeast Anchorage Community Council Traffic Calming Study. Also 3 speed humps are already installed on Duben East. Will consider installing three speed humps to match the number of existing speed humps on the roadway during the design process.
26	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	1h	General	These recommendations should not require a significant increase in design waivers to the MOA DCM already listed in the report as needed.	Have added lane width to list of design waivers.
27	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	2	1	Introduction: Second paragraph indicates improvements to the Muldoon Road intersection are not a part of this upgrade project. This is contrary to the Executive Summary proposed improvements and cost estimate.	Have clarified.
28	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	3	15	E. Right Of Way, 1. Duben West: Second paragraph, 4th and 5th sentence~ appears to be improper use of "were", likely should be where.	Have corrected.
29	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	4	29	C. Traffic Characteristics; This section seems confusing at best, what information is it conveying? Table 4 is titled Existing and Future Traffic Characteristics; are existing and future characteristics the same? Is future proposed median work limiting access on Muldoon Road likely to change these characteristics?	Section has been rewritten to clarify issues.
30	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	5a	31 & 32	The report identifies significant crash history at the gas station driveway. There are two driveways to the gas station onto Duben Avenue. The text on page 32 appears to isolate these crashes to the western driveway but that information is not conveyed in the report or in Appendix D crash diagrams. The proposed improvement which limits access to the western driveway will likely increase the use at the eastern driveway, is there an issue readily identifiable with the eastern driveway which may require corrective measures?	Driveways on crash table have been split into to analyze both driveways. Eastern driveway does not have a crash issue associated with it.

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31	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	5b	31 & 32	A total of 14 crashes are noted at the intersection of Grand Larry/Duben. In fact, that is the highest number of crashes at any location away from the intersection of Muldoon Road itself. 13 crashes occurred in inclement weather conditions. Is there a countermeasure available for addressing the principal crash type? If one isn't covered by the proposed improvements, please evaluate.	Addition of lighting, curb neckdown, shoulders and sight distance clearing should reduce the crashes at Grand Larry.
32	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	6	32	Bullet #4 should read "Adding sidewalks with barrier curbscan curbs can be...". A space needs to be inserted between the words "curbs" and "can".	Have corrected.
33	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	7	33	There is considerable discussion given to the all way stop at the Oklahoma and Duben intersection. This entire section should be rewritten. Extensive reference is made to MUTCD warrants and the fact that this intersection does not meet those warrants. These references should be removed. The MOA established guidelines / warrant criteria for the installation of all way stop control as mentioned in the text about July 2000 to address the needs of these lower volume roadways. A warrant analysis was in fact performed at this intersection in October of 2000. The intersection met warrants for a major intersection primarily on traffic volumes which were almost equal. Based on the volumes provided in Appendix D completed in June 2008 the intersection still meets current criteria for all way stop control at a major intersection. Accident Data is in fact available prior to 2000. I can provide you a copy of the original analysis if you would like.	Have reduced this section to only include MOA all way stop analysis.
34	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	8	36	Project Design Standards; you could combine the MUTCD bullet with the ATM 2012 bullet as the ATM includes the 2009 MUTCD.	Have left as is.
35	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	9	37	Table 9: Design criteria indicate the WB-50 as the design vehicle. Consideration should be given to an alternate design vehicle as the WB-50 is no longer a listed vehicle type in the current AASHTO Green Book. I suspect AK DOT may require a WB-67 design for the Duben / Muldoon intersection. An AASHTO City Bus design vehicle may be the most appropriate design vehicle for all other Duben Avenue intersections as this should accommodate AFD fire trucks. The asterisk at the bottom of the table references Section VII.E for lighting design criteria. Lighting Standards are established in Chapter 5 of the DCM.	a. WB-50 design vehicle is current design vehicle listed in the DCM. Will consider larger vehicle during design process.b. Have modified reference to clarify that the lighting design criteria is shown in Section VII.E of the DSR.
36	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	10	50	VII D Mailboxes: Traffic supports the consolidation and use of cluster mailboxes as can be achieved. It should be noted that relocation of existing mailboxes which are on the approach to stop controlled intersections is required. There are several of these at the east end of the project and on the western end.	Have added requirement.
37	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	11	54	A. Design Challenges: Further analysis needs to be done of any needed restriping of the parking area on the north side of the office building on Parcel 17. The proposed widening – particularly in conjunction with the proposed median island – may create some operational issues for vehicles attempting to either enter or exit the driveway onto Duben.	Will analyze parking layout during design process. Median may need to be shortened in order to provide adequate access into/out of Parcel 17.
38	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	12	57	D: Vertical Alignment, Paragraph 2 Not certain what is meant by the statement that reducing the steep grades is "improving navigation". Although in general a reduction in grades is beneficial, might not some cross-streets and driveways be adversely impacted – as correctly noted in the first paragraph - by a reduction of some grades (resulting in more cuts/fills – and longer transitions to match existing elevations) on Duben?	Have clarified.

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39	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	13	60	F. Traffic Calming. Please provide an exhibit to help support the comment that there are benefits to placing the neckdown at Alaska Place versus the 2006 Calming Study recommendation for a neckdown at Oklahoma Street. It might be correct, but documentation of the basis of the assertion is helpful.	Have added additional text to explain benefits.
40	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	14	67	F. Traffic Calming Volumes, presence of signalized intersection, and future access control project on Muldoon indicate Duben East to be a "Primary Emergency Response Route". Therefore, speed humps, with their associated 9 second (each) delay in emergency response time should be avoided.	Speed humps are proposed based upon the Northeast Anchorage Community Council Traffic Calming Study. Also 3 speed humps are already installed on Duben East. Will consider installing three speed humps to match the number of existing speed humps on the roadway during design process.
41	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	15	80	Proposed Variances Table 17: It is clear these are a moving target and will likely require modification. I would note that sidewalk separation does not appear to be a requirement provided for in either Figure 1-13 or DCM 4.2H. 4.2H is specifically applicable to trails; sidewalks are not trails. Title 21 does have some discussion regarding sidewalk separation. Parking is allowed on either side of the roadway and is regulated by AMC Title 9 as previously indicated. It is unclear where the 7' width listed comes from; it is not something I see in Table 1-6.	Have removed sidewalk separation from table.
42	Kristen Langley, MOA Traffic Safety, Associate Traffic Engineer	2/12/2014	16	App D	The speed study titled "Duben 15' E of Pamela" was not included in the report. Although the decision of which data is representative of the typical street conditions is open to professional interpretation, it seems that the raw data should still be included in the report for future reference.	Speed study at Pamela was added to traffic summary and has been included in Appendix.
43	Randy Bergt, MOA Public Transportation, Capital Projects Engineer	2/14/2014	1		The Public Transportation Dept has bus routes on Muldoon Road and Oklahoma. No other comments at this time.	Noted.
44	Nicole Jones-Vogel, MOA Planning, Associate Planner	2/14/2014	1	General	The location of this project is located within the East Anchorage District. This District is currently undergoing a planning effort, the Public Review Draft of the East Anchorage District Plan is available on the Long-Range Planning website contained with the www.muni.org site. It is recommended that the project team stay informed as this project moves forward with adoption. Thede Tobish is the Long-Range Planning Staff member who is managing this planning effort. He can be reached at 343.7918.	Noted.
45	Nicole Jones-Vogel, MOA Planning, Associate Planner	2/14/2014	2	17	The DSR identifies several properties that will need to be acquired. It was not clear what would happen to the remainder of these properties after the portions were used for the ROW. It is encouraged that the project team consider using the excess ROW to pull the pedestrian path away from the edge of the ROW and maybe meander the path instead of making it a parallel path adjacent to the ROW.	Will consider, have added statement that MOA may re-sell the properties for future private development.
46	Tim Cross, AWWU, Engineering Tech III	2/19/2014	1	Existing Utilities: Figure 1	Show valve at Duben and Oklahoma per AWWU Record Drawing (RD) 6942	Have added.
47	Tim Cross, AWWU, Engineering Tech III	2/19/2014	2	Existing Utilities: Figure 1	Show valve at Duben and Pamela Place per RD 6949.	Have added.

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48	Tim Cross, AWWU, Engineering Tech III	2/19/2014	3	Existing Utilities: Figure 2	Show two valves at Melody Place and Duben per RD 6947	Have added.
49	Tim Cross, AWWU, Engineering Tech III	2/19/2014	4	Existing Utilities: Figure 3	8" ductile iron water main in Pauline St. incorrectly identified as asbestos concrete.	Have corrected.
50	Tim Cross, AWWU, Engineering Tech III	2/19/2014	5	R1	<p>The proposed change in ROW grade from STA. 74+05 to STA. 75+80 (approx.) leaves less than 8 feet of ground cover over the existing 6" DIP water main. At STA. 75+55 (approx.), the proposed change in grade only leaves approx. 6 feet of ground cover over the water main.</p> <p>Per the AWWU Design and Construction Practices Manual, section 40.02.07 Depth of bury: Standard depth of bury is ten feet (10') to the top of pipe. Deviations with less than the standard depth will require prior approval of the AWWU Engineering Division. When cover on existing pipe becomes less than the standard due to road improvements that cause a permanent grade change, grading within easements, erosion, etc., the existing water line is to be lowered or insulated, as directed by AWWU.</p> <p>Installing insulation over the water main at such shallow burial depths may not sufficiently protect the main from freezing in the winter. As such, the designer will need to provide a thermal analysis or proof of concept that insulating the main will prevent it from freezing. If this cannot be proven, then the water main will need to be lowered to provide the required 10 feet of cover.</p>	Will provide thermal analysis calculations for 65% design submittal to show that insulation will prevent water main from freezing. If it is not feasible to prevent from freezing then will relocate water main to provide additional cover.
51	Tim Cross, AWWU, Engineering Tech III	2/19/2014	6	General	There are sheets in the plan set for an "Alternative 3", however, the Executive Summary does reference an Alternative 3.	There are two alternatives for Duben West and three for Duben East. Only the preferred alternatives are discussed in the Executive Summary.
52	Rebecca Colton, GCI, OSP Project Engineer III	2/13/2014	1		GCI facilities do not appear to be in the project limits, if you find any conflicts that I may have missed please feel free to send questions.	Noted.
53	Rebecca Colton, GCI, OSP Project Engineer III	2/13/2014	2	R3	It appears that our only conflict could possibly be the .650 feeder coax cable along the south side of Duben from station 123+00 to approx. station 125+25. If we have to replace this span of cable it will need to be replaced from ped to ped as indicated on the plan set.	Noted.
54	Rebecca Colton, GCI, OSP Project Engineer III	2/13/2014	3		If CEA moves or changes out any of the poles I have indicated on the plan set we will have to relook at our facilities, they should move from pole to pole depending on how far away the new poles are placed if any.	Noted.
55	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	1	12	Section C, Item 1. Duben West does not mention the sporadic street lighting mostly at intersections. But this is mentioned with Duben East.	Have mentioned sporadic lighting on Duben West.
56	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	2	12	Section C, Item 2. Roadway Function – 3rd sent., Local streets...should the acronym be AADT?	Have corrected.
57	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	3	14	Section D Utilities, MOA owns street lighting facilities on Oklahoma Street north and south of Duben Street.	Have added this information.

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58	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	4	14	Section D Utilities, Item 3. Electric, MOA maintains the illumination at the intersection of Muldoon & Duben for SOA thru a TORA agreement.	Have added this information.
59	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	5	52/60	Section E. p. 52, discusses lighting for a local roadway with low pedestrians and DCM criteria. Section G, discusses Duben West east of Oklahoma St. as Collector for analyzing intersection lighting but not for the street lighting?	Have clarified.
60	Kathy Bourque Parker, MOA Street Maintenance, Street Light Admin	2/27/2014	6	67	Section G, p. 67, lighting, discusses Duben East - west of Eklutna St. functions as a Collector for analyzing intersection lighting but not for the street lighting?	Have clarified.
61	Steven Hughes, MOA Street Maintenance	2/27/2014	7		Storm Drain. Please include an evaluation regarding adding a heat trace system to the storm drain, especially on the east side.	Insulating roadway and adequate amount of cover should preclude the use of heat trace.
62	Steven Hughes, MOA Street Maintenance	2/27/2014	8		Even though this may not be the correct venue please include salvaging the new CPEP storm drain pipe recently installed in east Duben.	Will do.
63	Dean Karcz, PTS, Project Manager	2/18/2014	1	i	Second paragraph – should consider rewriting this sentence, as improvements to the Muldoon signal are proposed.	Have done.
64	Dean Karcz, PTS, Project Manager	2/18/2014	2	1	Same comment as above	Have done.
65	Dean Karcz, PTS, Project Manager	2/18/2014	3	6	d. Cherry Street Pavement Rehab – if this is the project Lori Eddie-Schance is managing, it is scheduled for construction this year. Verify.	Lori Eddie-Schance is managing Muldoon Area Pedestrian Safety Improvements and it is being constructed in 2014. Cherry Street Pavement Rehab project name has changed to Northeast Muldoon Local Road Resurfacing and there is no schedule or funding for this project yet. Have revised name of project.
66	Dean Karcz, PTS, Project Manager	2/18/2014	4	7	f. Bolin Street – add “pending funding approval” to the end of this sentence	Have done.
67	Dean Karcz, PTS, Project Manager	2/18/2014	5	7	Consider adding h. Cook Inlet Housing project (the one we just purchased the ROW and foundation for)	Have done.
68	Dean Karcz, PTS, Project Manager	2/18/2014	6	8	d. Schools – should discuss if it is a bus route and where bus stops are located	Have included.
69	Dean Karcz, PTS, Project Manager	2/18/2014	7	15	1. Duben West – change “were” to “where” is a couple of spots in 2nd paragraph	Have done.
70	Dean Karcz, PTS, Project Manager	2/18/2014	8	52	“3. Intersections” – trying to understand the benefit of Table 11. Is it necessary?	Left as is and added additional clarification.
71	Dean Karcz, PTS, Project Manager	2/18/2014	9	56	B. Roadway Cross Section – do we need to reference a 33' BOC section is recommended anywhere here?	Have added.
72	Dean Karcz, PTS, Project Manager	2/18/2014	10	78	Is showing a bike on the sidewalk appropriate?	Have removed bike on sidewalk.
73	Dean Karcz, PTS, Project Manager	2/18/2014	11	80	I don't believe Horizontal Alignment, Vertical Alignment – Crest and Sag Curve, or Cross Section –Curb & Gutter items need to be listed in this Summary of Variances.	Have removed horizontal alignment, crest and sag curve and curb & gutter.
74	Dean Karcz, PTS, Project Manager	2/18/2014	12	83	4. Driveway Corner Clearance – we should clarify that we are not installing these driveways	Have clarified.
75	Dean Karcz, PTS, Project Manager	2/18/2014	13	84	1. Street Grades. Should also add the 2013 volume was 2080; the 2035 projected volume is estimated at 2450.	Have done.

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76	Paul Janke, ADOT, Hydrology	3/6/2014	1	1	<p>Background Info (comments are in Item No. 2 below)</p> <p>The proposed project includes a storm drain system that drains into the Muldoon Road storm drain system from both the east and west at Duben Avenue. Both of these storm drain systems connect into the same Muldoon Road manhole.</p> <p>Appendix E shows that the first Muldoon Road storm drain pipe downstream of this proposed connection has a capacity of 9.2 cfs and the maximum discharge expected during the proposed 10-year-24 hour storm event is 7.0 cfs.</p> <p>Appendix E shows that at Muldoon Road, the hydraulic grade line (HGL) during the 10 year–24 hour event from the proposed west storm drain system is above the Muldoon Road surface. This also shows that during the same event, the HGL from the proposed east storm drain system may be above the top of the Muldoon Road storm drain pipe.</p>	Yes. The intent of the storm drain design is to maintain existing drainage patterns. The Muldoon Road system has been modeled to be undersized for current and future conditions.
77	Paul Janke, ADOT Hydrology	3/6/2014	2	1	<p>1. I assume that the calculated pipe hydraulic capacity does not include pressure flow, or HGL above the top of the pipe. If this is an incorrect assumption, please let me know the return interval on the discharge with the HGL at the top of the pipe.</p> <p>2. Check the hydraulic capacity of the Muldoon Road storm drain system downstream to its outfall at Chester Creek. For pipes with a hydraulic capacity less than the design discharge, please let me know the pipe hydraulic capacity and the return interval of the discharge that equals the pipe hydraulic capacity.</p> <p>3. Check the size of the Muldoon Road manhole at Duben Avenue and increase the diameter of the manhole as necessary to handle all the pipes.</p> <p>4. Ensure the HGL from the two proposed storm drain systems is not above the top of the Muldoon Road pipe.</p>	<p>1&2. Have provided additional drainage data in report per request of Paul Janke.</p> <p>3. Will verify manhole diameter during design and increase if required.</p> <p>4. Muldoon Road system is undersized and modeling shows it could overtop roadway during large storm event.</p>
78	Paul Lindemuth and Rebekah Khachadoorian, ADOT ROW	3/6/2014	3	Z15	In paragraph two of section E.1., where is spelled wrong in the seventh line. Consider adding a comma after "by plat" on the same line.	Have corrected.
79	Paul Lindemuth and Rebekah Khachadoorian, ADOT ROW	3/6/2014	4	Z18	There are two subsection a's in section A.1. Drainage basins. The second paragraph in the MS4 Drainage Subbasins 478 & 527 seems amiss. It states that no treatment structures are present; therefore it is assumed treatment structures will be required.	Have corrected.
80	Paul Lindemuth and Rebekah Khachadoorian, ADOT ROW	3/6/2014	5	Z19	The caption under the photo has a question mark. If the location is actually in question, it should be verified and updated as needed.	Have corrected.
81	Sean Baski, ADOT Highway Design	3/6/2014	6	1	Clarify in DSR the statement: "Improvements to the Muldoon Road intersection are not part of this upgrade project".	Have clarified.
82	Sean Baski, ADOT Highway Design	3/6/2014	7	1	Muldoon intersection - the SE quad change is large. It appears that you are attempting to keep the crosswalk in the same location (north/south). Is this desirable? It appears you will already have to rerun most of the wiring for the intersection anyway. Consider relocating.	Will consider in the design process.