APPENDIX A

Approved Design Criteria

And

Design Designation

PROJECT DESIGN CRITERIA

Project Name: HSIP: Jewel Lake Road Widening, 88th Avenue to Strawberry Road

☐ New Construction / Reconstruction ☐ Rehabilitation (3R) ☑ Other (HSIP)

Project Number: 0515005/Z573100000 ☐ NHS ☑ Non NHS

Design Functional Classification	Minor Arterial/Major Arterial III				ADOT&PF/MOA OSHP 2011
Design Year				2027	[HSIP nominating document]
Present ADT (2012)				11,959	[DOT&PF Annual Traffic Volume Report]
Design Year ADT (2027)				13,000	[Kinney Engineering, LLC, Design Designations]
Mid Design Year ADT (2022)				12,250	[Kinney Engineering, LLC, Design Designations]
DHV (%)				12%	[Kinney Engineering, LLC, Design Designations]
Directional Split (%D)				40/60	[Kinney Engineering, LLC, Design Designations]
Trucks (PTT)				5%	[Kinney Engineering, LLC, Design Designations]
Equivalent Single Axle Load (ESAL)				660,000 (10 Year)	[Kinney Engineering, LLC, Design Designations]
Pavement Design Year				2027	[2005 HPCM Sec 1180]
Design Vehicle				WB-67	[2001 PDGH p. 18, MOA DCM 6.4B]
Terrain:				Level	
Number of Roadways				One (1)	
Design Speed				45 mph (40 Posted)	[2001 PGDHS pg 72, MOA DCM Ch 1]
Width of Travel Way	two 11' lanes + 14' TWLTL = 36'				[2001 PGDHS p. 316]
Width of Shoulders: Outside	4'	Inside	N/A		[2001 PGDHS p.319]
Cross Slope:				2%	
Superelevation Rate:				none	
Minimum Allowable Radius				For 45 mph: 6,680' (NC)	[2001 PGDHS p. 145, 166, 168]
Minimum K-value for Vertical Curves:	Sag 79 (45 mph)	Crest	61 (45 mph)		[2001 PGDHS p. 274, 280 based on stopping sight distance]
Maximum Allowable Grade				6% (Level Terrain 45 mph)	[2001 PGDHS p. 475, 476]
Minimum Allowable Grade				0.3% (0.5% desirable)	[2001 PGDHS pp. 242, 475]
Stopping Sight Distance				360' (45 mph)	[2001 PGDHS p. 112, 449, 475]
Lateral Offset to Obstruction:				1.5' (4' desirable)	[2011 RDG]
Vertical Clearance:				16'	[2001 PGDHS p. 451]
Bridge Width:				Not applicable	
Bridge Structural Capacity:				Not applicable	
Passing Sight Distance				N/A	[2001 PGDHS p. 475]
Surface Treatment: T/W	Asphalt Concrete Pavement	Shoulders	Asphalt Concrete Pavement		
Side Slope Ratios: Foreslopes	2H:1V	Backslopes	2H:1V		[HPCM Sec. 1130]
Degree of Access Control				HPM Corner clearance and Distance between Driveways Tables 1190-3 and 1190-4	[HPCM 1120.2.4, 1190.3,]
Median Treatment (If applicable)				N/A	
Illumination				Pending M&O funding	
Curb Usage and Type				Mountable curb and gutter	[HPCM Sec 1190, 2001 PGDHS pp.323-327, p. 477]
Bicycle Provisions	4' paved shoulder with 1.5' gutter pan & 10' wide shared use pathway on west				[HPCM Sec 1210], [FHWA publication RD-92-073]
Pedestrian Provisions	10' wide shared use pathway on west, 5' to 8' sidewalk on east				[2005 GPDOPF]
Miscellaneous Criteria					

Proposed by _____ Designer

Endorsed by _____ Engineering Manager

Date _____

Approved by _____ Regional Preconstruction Engineer

DESIGN DESIGNATION

State Route Number: **133750** Route Name: **Jewel Lake Road**

Project Limits: **88th Avenue to Strawberry Road**

State Project Number: **Z573100000** Federal Aid Number: **515005**

Project Description: **Highway Safety Improvement Program: Jewel Lake Road Widening Project**

Design Functional Classification: ☑ Urban Arterial ☐ Rural Arterial ☐ Major Collector ☐ Minor Collector ☐ Local

New Construction - Reconstruction: ☐ Rehabilitation (3R): ☐ Other **HSIP**

Project Design Life (Years): 5 ☐ 10 ☑ 20 ☐ 25 ☐ Other

	Existing Year 2012	Construction Year 2017	Mid - Life Year 2022	Future Year 2027
ADT*	11,959	11,500	12,250	13,000
DHV	1,435	1,380	1,470	1,560
Peak Hour Factor	Varies	Same	Same	Same
PM Directional Distribution (North/South)	40/60	40/60	40/60	40/60
Recreational Vehicle Percentage (RV%)		1%	1%	1%
Commercial Vehicle Percentage (CV%)		4%	4%	4%
Compound Growth Rate		1.0%	1.0%	1.0%
Pedestrians (Number/Day)		See Discussion in Attached Report		
Bicyclists (Number/Day)		See Discussion in Attached Report		

*If urban then ADT is not required. Intersection diagrams shall be attached as part of this document.

Design Vehicles for Turning: **WB-67**

Design Vehicle Loading: HS15 ☐ HS20 ☑ HS25 ☐ Other

Equivalent Axle Loads: **320,000 (5 Years), 660,000 (10 Years)**

APPROVED _____ DATE _____
Regional Preconstruction Engineer

Figure 1100-1
Design Designation Form