McMillan Mesa Open Space Major Plan Amendment

Traffic Assessment

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Background: In November 2016, City of Flagstaff voters changed the land use designation for 327 acres on McMillan Mesa from residential and business park uses to open space.

Purpose: Two primary questions stemming from this major plan amendment are evaluated in this memo. First, how is the change in land use expected to change traffic patterns on the Mesa and on the surrounding network? Second, how will the elimination of the proposed connection from Ponderosa Parkway to Gemini ("Connection") affect those same patterns?

Methodology: The regional transportation model is used to evaluate these changes. Regional models are most effective at assessing impacts on roads of regional significance. Accuracy decreases as local roads and collectors of lower volumes are evaluated. An important example of this: Model estimated volumes on Pine Cliff Drive for 2015 are 439 vehicles per day. Actual traffic counts for 2011 and 2018 are 650 and 1800 respectively. For those roads, order of magnitude and direction of change should be considered more than the absolute traffic volume estimated or projected. Nine different model runs illustrate the effects of the land use change and the network changes. These are:

- 2015 land uses
    - Existing land use conditions and network
    - Existing land use conditions with the completion of Ponderosa Parkway from its existing eastern terminus to E. Route 66. "Parkway Completion".
    - Existing land use conditions with the completed parkway and the connection to Gemini. This latter connecter parallels Pine Cliff Drive. "Connection".
- 2040 land uses pre-Major Plan Amendment (MPA)
    - The same three network arrangements are modeled
- 2040 land uses post-Major Plan Amendment
    - The same three network arrangements are modeled

Conclusion: The change in land use mildly decreases traffic on regional roads surrounding the Mesa. A modest 5% decrease occurs on Pine Cliff. Two important results occur viewing traffic with and without the Connection. With the Connection, 2040 traffic decreases at Ponderosa Parkway at Turquoise between 40% and 50% depending on the conditions tested. With the Connection traffic on Pine Cliff decreases by 50%. Without the Connection, Pine Cliff traffic is projected to increase by 150% over today's volumes in the post-MPA 2040 condition. Applied to today's actual 1800 volume, that is 4500 vehicles per day.

The land use effects on traffic are modest comparing the 2040 condition pre and post-MPA. The Mesa is centrally located, so the traffic effects are distributed across several approaching roadways: Switzer Canyon, Fourth Street, Cedar, and Ponderosa Parkway (from Route 66). Ponderosa Parkway in its current disconnected state, does not attract regional trips because of its lack of directness. Of these surrounding roads, Ponderosa Parkway at Route 66 experiences the largest percent change of -7% and

the second largest absolute drop of -305 vehicles below its pre-MPA projected 2040 daily volume of 4,150. Only Cedar Avenue at Gemini experiences a larger drop at -313 vehicles which represents a -1% change.

Pine Cliff, the smallest road evaluated, experiences a reduction of 5-6% or only 60-70 vehicles per day in the model. Notably, with the Connection assumed in place the volume decreases by less than 2%. This indicates the Connection is taking most of the projected growth in traffic.

The network effects are more pronounced especially for Pine Cliff, the Connection, and Ponderosa Parkway at its east and west ends. Completing Ponderosa Parkway reduces traffic on the Parkway at Turquoise by 52% and traffic on Pine Cliff by 18%. When the Extension is added, no additional change happens at Turquoise, but the traffic on Pine Cliff is reduced by 54%. Traffic on Cedar Avenue and Fourth Street are nominally impacted.

Ponderosa Parkway Extension Comparison Table									
FMPO Regional Traffic Model results									
Base Volume 2018	1800								
	2015 Base	**2015 Pkwy only**	**2015 Pkwy & Extension**	**2040 Pre MPA Base**	**2040 Pre MPA Pkwy only**	**2040 Pre MPA Pkwy & Extension**	**2040 Post MPA Base**	**2040 Post MPA Pkwy only**	**2040 Post MPA Pkwy & Extension**
Vehicle Miles Travelled	2,058,143	2,056,392	2,057,849	3,205,450	3,204,642	3,202,889	3,204,244	3,200,409	3,199,416
Road Segment									
Pine Cliff	439	359	201	1162	1135	490	1102	1065	482
Ponderosa Pkwy @ Turquoise	4448	2157	2134	5010	3083	2944	4947	3047	2953
Ponderosa Pkwy @ 66	0	2157	2467	0	3008	4151	0	2863	3846
Fourth Street @ Cedar	8263	8316	8095	9901	9637	9453	9698	9491	9386
Cedar @ Gemini	16730	16321	16336	24865	24806	24813	24637	24509	24500
Ponderosa Pkwy Extension	0	0	365	0	0	1959	0	0	1621
Pine Cliff		-18%	-54%		-2%	-58%		-3%	-56%
Ponderosa Pkwy @ Turquoise		-52%	-52%		-38%	-41%		-38%	-40%
Ponderosa Pkwy @ 66									
Fourth Street @ Cedar		1%	-2%		-3%	-5%		-2%	-3%
Cedar @ Gemini		-2%	-2%		0%	0%		-1%	-1%
Ponderosa Pkwy Extension									
							Percent Land Use Effect 2040 post vs. pre MPA		
Pine Cliff							-5%	-6%	-2%
Ponderosa Pkwy @ Turquoise							-1%	-1%	0%
Ponderosa Pkwy @ 66								-5%	-7%
Fourth Street @ Cedar							-2%	-2%	-1%
Cedar @ Gemini							-1%	-1%	-1%
Ponderosa Pkwy Extension									-17%
							Absolute Land Use Effect 2040 post vs. pre MPA		
Pine Cliff							-60	-70	-8
Ponderosa Pkwy @ Turquoise							-63	-36	9
Ponderosa Pkwy @ 66							0	-145	-305
Fourth Street @ Cedar							-203	-146	-67
Cedar @ Gemini							-228	-297	-313
Ponderosa Pkwy Extension							0	0	-338

	Dwelling Units (LU 1,2,3)				Non-residential (LU 17,18,19,25,26,34)			
TAZ	2015	2040-pre	2040-post		2015	2040-pre	2040-post	
12	0	0	0		70	158	98	
45	0	0	0		0	42	11	
51	186	240	240		0	5	0	
52	0	140	140		39	125	125	
NOTE: In TAZ 52 46000 square feet of projected government office space was changed to 23k medical office and 23k light industrial.								