
Circulation & Bicycle Element (Packet 2)

To: Circulation and Bicycle Working Group, CAC Members and Alternates
From: Staff
Date: February 6, 2012
Re: Circulation & Bicycle Element

Assignment:

Please read “Circulation & Bicycle Element Background – (Packet 2)”

- Identifying the state statute requirements;
- Background information/trends/data;
- Element relationships;
- Listing existing goals/policies with Staff critique

State Statutes: The applicable AZ state statutes frame the requirements the Regional Plan shall address.

Circulation Element:

A.R.S. 9-461.05.C.2: A circulation element consisting of:

- The general location and extent of existing and proposed freeways, arterial and collector streets, bicycle routes and any other modes of transportation as may be appropriate, all correlated with the land use element of the plan.

A.R.S. 9-461.05.E.3: The circulation element provided for in subsection C, paragraph 2 of this section (as shown above) shall also include for cities of fifty thousand persons or more recommendations concerning:

- Parking facilities, building setback requirements and the delineations of such systems on the land, a system of street naming and house and building numbering and other matters as may be related to the improvement of circulation of traffic. The circulation element may also include:
 - A transportation element showing a comprehensive transportation system, including locations of rights-of-way, terminals, viaducts and grade separations. This element of the plan may also include port, harbor, aviation and related facilities.
 - A transit element showing a proposed system of rail or transit lines or other mode of transportation as may be appropriate.

Bicycle Element:

A.R.S. 9-461.05.E.9: A bicycling element consisting of:

- Proposed bicycle facilities such as bicycle routes, bicycle parking areas and designated bicycle street crossing areas.

Background Information and Trends: *This is an informational presentation to CAC, introducing the element and Regional trends, in the way of numbers, maps, graphs, and/or expert presentations; including community experts' information, report summaries.*

1. **Introduction**

The primary goals of an effective regional transportation system are to improve the mobility of people and goods, enhance the quality of life of our communities, assure that financial needs are met, protect the natural environment and sustain public support for the transportation planning efforts. The factors considered in the development of a comprehensive transportation and circulation plan include the economic viability of the area, the safe design of the transportation system, the urban design context of the system and its component parts, and mobility needs and options for people and freight. In meeting these goals, the plan should promote context sensitive solutions, promote energy conservation, enhance integration and connectivity of transportation systems, promote efficient system management and operation, and emphasize the preservation of existing intermodal transportation systems.

Development of a safe and efficient multimodal transportation system will be encouraged by focusing on safe vehicular, bicycle, and pedestrian ways of travel. Traffic accident rates will be minimized by implementing uniform design and construction standards. While the element recognizes that private automobiles will be the mode for the vast majority of trips in the foreseeable future, the percentage of work trips made by single-occupancy vehicles will be reduced through facility improvements and incentive programs that will increase the share of work trips using public transit, car and van pools, bicycles, and walking. Efforts will continue to be made to minimize the duration and severity of peak hour traffic congestion.

Future land use patterns and transportation systems will be planned in a coordinated, continuous, and comprehensive manner. Air quality will be protected by promoting land use patterns and urban design that reduce travel miles and facilitate transportation alternatives. Auto, truck, transit, bicycle, and pedestrian travel will be coordinated with land use planning, especially within and between activity centers supported by streets that serve this complete range of modal choices. Attractive design of the region's travel ways and assurance of recreation and scenic linkages will be characteristic of the region's transportation system. In general, capital improvement programs will support attainment of environmental goals consistent with lifestyle expectations of citizens. New roadway design will be sensitive to the built and natural environment. Citizen participation will be a significant part of the decision-making process in order to preserve neighborhoods, promote public support for future improvements, and minimize adverse impacts on the environment and the natural terrain.

The following information provides an overview of transportation systems, routes and other related facilities in the Flagstaff region, in addition to the various factors which influence transportation modes in the area. Factors affecting circulation that are unique to the Flagstaff region include the intersection of two major interstates (I-17 and I-40), BNSF Railway, historic Route 66, a high level of tourism related to the Grand Canyon and other local sites and activities, and the student population of Northern Arizona University. These influences, along with population increase, economic conditions and other variables, will continue to impact circulation systems in the region.

Also, staff synthesized and drafted a summary of public comments from the Regional Plan's "Circulation and Bicycle" Open House, included the SWOT analysis summarizing comments from the Circulation and Bicycle Focus Group; and, provided a list of pertinent existing, local programs. Last, staff and professionals

performed an analysis of existing goals and policies from the current Regional Plan and provided suggestions as to how these goals and policies might be revised to more effectively address our transportation, bicycle and pedestrian systems now, and into the future.

A. Flagstaff Metropolitan Planning Organization (FMPO)

As required by the Arizona Department of Transportation and the US Department of Transportation, the FMPO prepared a long range transportation plan for its 525-square-mile coverage area, which was adopted in December 2009 as the *Flagstaff Pathways 2030 Regional Transportation Plan (RTP)*. The RTP identifies and prioritizes future transportation investments for the Flagstaff region for driving, riding the bus, walking, biking and the transport of goods. A federal and state requirement to receive transportation funding, the RTP evaluates the cost and effectiveness of projects for each major travel mode, as well as addressing the relationships between land use, transportation, the economy, and the environment. The policies of the RTP reflect a commitment to regional land use policy reflected in the Flagstaff Area Regional Land Use and Transportation Plan (FLUTP), and include preserving the natural environment and improving the built environment through compact, infill, and activity center development.

Common themes which were identified during the public engagement process of drafting the RTP include the following:

- Participants highly rate the existing transportation system, noting recent and ongoing project and service investments.
- There is a strong desire to increase travel choices and routes, particularly north-south travel, in a way that protects residential neighborhoods and preserves environmental quality and access.
- Given the region's constrained topography, there is some debate over when and where it is acceptable to build wider roadways when other preferred options, such as increased connectivity, may not be feasible.
- Another important outcome was community support for and affirmation of mixed use activity centers at appropriate scales and locations as a planning strategy to link transportation, land use, and community character.

B. Flagstaff Area Mobility Trends and Conditions

Within the complex relationships between transportation and land use is **the simple concept that how and where we live influences how we travel**. Put another way, travel choice options and investments depend on land use and community character. Development patterns inherently influence, if not dictate, travel behavior. Jobs and housing located far apart and connected only by highways or freeways result in long commutes by car. Shops or employment located close to housing encourages walking, biking, and transit use in addition to driving.

Research locally and nationwide indicates that neighborhoods integrating housing, shops, offices, and educational and recreational opportunities in a compact, well-designed way can increase personal mobility while reducing vehicle congestion. Such land use strategies are not meant to force drivers from their cars, nor to negatively impact existing stable neighborhoods. Rather, applied at strategic locations and thoughtfully over time, these strategies are intended to maximize personal travel choices and mobility, reduce the need to always drive long distances for every trip, and to provide the region with as many transportation options as possible to address new growth over time.

Vehicular Transportation Systems Overview

The Flagstaff area is served by a hierarchy of roadway types, including freeways and arterial, collector, and local streets that provide mobility and access for residents. The road network is the principal infrastructure for all modes of travel. Transit buses run on the streets mixed with other motor vehicles. Most sidewalks run along streets and are built as part of the street cross section. Bike lanes (often the most direct type of bikeway) are a part of streets, and many Flagstaff Urban Trails Systems (FUTS) run parallel to or along streets.

Freeways include Interstate 17, which provides access to Phoenix and Interstate 10; and Interstate 40, which provides access to Las Vegas, Los Angeles, Albuquerque and other eastern destinations. Arterial streets include major and minor arterials. Major arterials providing inter-regional access include US Highways 89 and 180, and State Highway 89A. Other arterials important to the region include historic Route 66 through the downtown Flagstaff area and points east and west of the city, and Leupp Road and Lake Mary Road extending to the northeast and southeast respectively.

Existing and Future Conditions

Demands of the existing population base on the transportation system resulted in many recent improvements. The Highway 89 traffic interchange was recently reconstructed, and the Fourth Street railroad overpass and connection was also recently completed. Miles of trails and bike lanes have been constructed and the region recently (May 2008) passed several 10-year sales tax ballot measures to fund and significantly expand transit service. Consequently, the Flagstaff region's transportation network performs very well, and is rated highly by residents, stakeholders, and other users.

Yet, major transportation issues and challenges remain. These include Milton Road congestion, limited access to downtown, railroad crossing congestion, Northern Arizona University related traffic, parking access and supply (especially downtown), and improving pedestrian, bike and transit levels of service in existing areas. Safety is also a concern. The table below shows existing conditions concerning modes of travel in the FMPO Region.

Table 3: Existing Conditions - FMPO Region

Travel Mode	Geographic Region			
	Core: Downtown & NAU	Rest of Flagstaff	Rest of Region	Entire Region
Car	71%	77%	95%	78%
Pedestrian	17%	12%	4%	12%
Bicycle	11%	8%	1%	7%
Transit	1%	3%	0%	2%
Totals	100%	100%	100%	99%

Source: Flagstaff MPO Trip Diary Survey, May 2007.

Survey results indicate transit ridership is over-reported.

C. Population Trends

1. Population

The area of the FMPO contains approximately 85,000 residents as of 2010. This is primarily made up of inhabitants of the city (79%). Figure 2 illustrates the projected growth of the FMPO area and its components through 2050.

Population	City of Flagstaff	Coconino County within FMPO	FMPO Total
2000	52,894	14,709	67,603
2010	66,879	17,888	84,766
2020	76,199	26,033	102,232
2030	83,746	28,607	112,353
2050	96,418	32,929	129,347

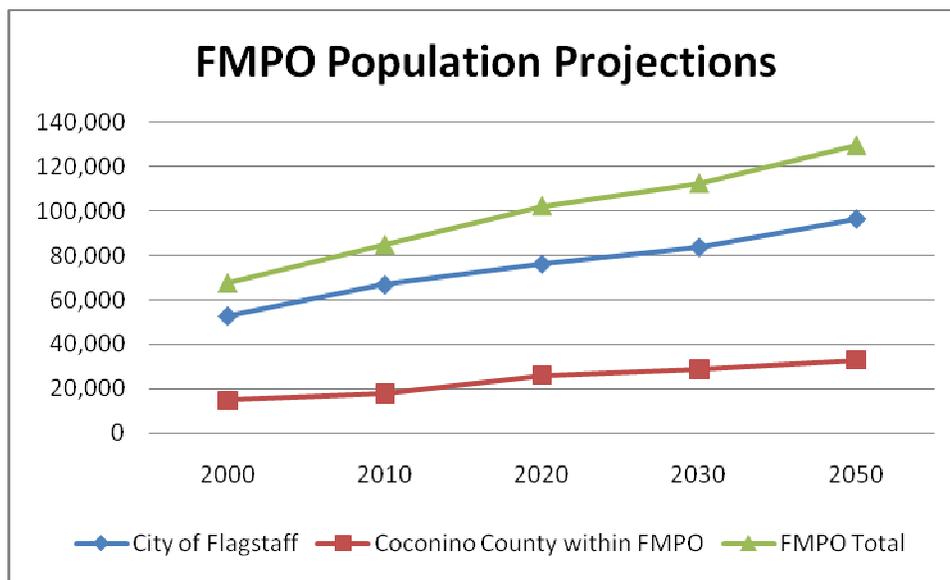


Figure 2: Illustrated Growth of FMPO, City, County within FMPO,¹

2. Historical, Estimated and Projected Populations

Table 1 lists population figures for the FMPO, Flagstaff, surrounding communities, Coconino County, Arizona, and the United States. These numbers include historical census data as well as current estimates and future projections based on census records and anticipated demographic variances. All growth rates are expected to slow in coming years. Arizona is still projected to grow at around twice the national rate. In the next decade, the FMPO is expected to grow at a higher rate than the city, county, or neighboring communities. This is likely due to increased development in county lands adjacent to the city. In later years, Arizona will continue to grow rapidly while the scarcity of developable lands in the Flagstaff area will cause it to slow considerably. Land swaps or state trust land sales may alter these projections somewhat, increasing the growth rates within Flagstaff and the FMPO.

¹ Source: Department of Economic Security. City data comes direct from DES, FMPO and County data is based on city and adjusted according to anticipated growth patterns by city personnel.

Table 1: Historical, Estimated, and Projected Populations among FMPO and select Geographies

Geography	Historical Populations						Estimated and Projected Populations						
	1980	r	1990	r	2000	r	2008	r	2013	r	2020	r	2050
United States	226,545,805	0.9%	248,709,873	1.2%	281,421,908	0.9%	303,247,000	1.3%	323,044,000	0.6%	335,805,000	0.7%	418,854,000
Arizona	2,718,215	3.0%	3,665,228	3.4%	5,130,832	3.2%	6,622,885	2.7%	7,554,429	2.2%	8,779,567	1.3%	12,830,829
Coconino County	75,008	2.6%	96,591	1.9%	116,320	2.1%	137,261	1.4%	147,431	1.1%	159,345	0.7%	198,149
FMPO							79,517	1.4%	85,217	2.6%	102,232	0.8%	129,347
Flagstaff	34,743	2.8%	45,857	1.4%	52,894	2.5%	64,692	1.6%	69,991	1.2%	76,199	0.8%	96,418
Kachina Village			1,711	4.5%	2,664	3.4%	3,474	2.2%	3,867	1.6%	4,328	1.0%	5,828
Mountaineire					1,014	2.9%	1,278	1.9%	1,406	1.5%	1,556	0.9%	2,044
Sedona			7,720	2.8%	10,192	1.4%	11,361	1.1%	12,016	0.9%	12,829	0.5%	15,030
Winslow	7,921	0.3%	8,190	1.5%	9,520	1.0%	10,290	0.7%	10,673	0.6%	11,153	0.4%	12,521
Page	4,907	3.0%	6,598	0.3%	6,809	0.8%	7,253	0.6%	7,468	0.5%	7,720	0.3%	8,542
Williams	2,266	1.1%	2,532	1.2%	2,842	1.8%	3,289	1.3%	3,505	1.0%	3,759	0.7%	4,587
Munds Park					1,250	6.3%	2,045	3.5%	2,431	2.5%	2,883	1.4%	4,356
Ash Fork					457	0%	457	0%	457	0%	457	0%	457
Seligman					456	0%	456	0%	456	0%	456	0%	456

- r = annualized growth rate
- Historical Populations were obtained from ESRI (Environmental Systems Research Institute, Inc.)
- Population Estimates for 2008 and 2013 were obtained from ESRI
- Projected Populations for all geographies but FMPO in years 2020 and 2050 were acquired from the Arizona Department of Economic Security.
- FMPO projections were formulated using DES figures adjusted according to anticipated growth patterns by the City of Flagstaff
- Gaps in historical population record represent times of minimum population when the area was not identified by the US Census
- More historical figures and growth rates can be found in the appendixⁱ

D. Visitors/Tourists

Flagstaff has a strong tourism sector due to its proximity to Grand Canyon National Park, Oak Creek Canyon, Arizona Snowbowl, Meteor Crater and historic Route 66. How do visitors travel to Flagstaff? One would assume that most visitors arrived in some form of vehicular transportation, but of what type? Private auto (53.3%) accounted for more than half of all visits, followed by rental cars (31.3%); together these account for 84.6% of all travel modes. We know from previous survey research in northern Arizona that most of these rental vehicles are picked up either in Phoenix or Las Vegas. All other categories accounted for only very small percentages: RV/Camper (4.1%), Train/Amtrak (2.9%), Shuttle (2.5%), Tour bus (1.8%), Air service (1.6%), and Motorcycle (.8%). “Other” transportation modes accounted for 1.7 percent. The table below provides a breakdown of the primary modes of transportation used by visitors to Flagstaff. (Source: Flagstaff Tourism Survey)

What is your primary mode of transportation?

	Count	Column N %
Private auto	565	53.3%
Rental car	332	31.3%
RV/Camper	43	4.1%
Train/Amtrak	31	2.9%
Shuttle company/Greyhound bus	27	2.5%
Tour Bus	19	1.8%
Other transportation	18	1.7%
Air Service	17	1.6%
Motorcycle	8	.8%
Total	1060	100.0%

(Source: Flagstaff Tourism Survey)

E. Land Use

As previously stated, land use and circulation are closely linked. The FMPO’s ‘Flagstaff Pathways 2030 Regional Transportation Plan’ identifies the component land use characteristics underlying the area types, activity centers and special districts are shown in the tables below. The first table, which can be read both horizontally and vertically, shows the characteristics defining each activity center type, the components describing each land use element, the range of metrics to quantify these characteristics and components, and the priorities placed on broad modal categories. The second table draws heavily on references in the *Flagstaff Area Regional Land Use and Transportation Plan* and attempts to quantify the types and numbers of centers that may be present within the region as of 2009.

Should the Regional Plan employ a Sector Plan land use, the FMPO’s Land Use Component categorization along with the new Zoning Code’s transects integrate in terms of land planning, description, and terminology.

Table 7: Area Type and Activity Centers Organization Framework

Land Use Component	Metric	Description (Range of Values)			
Area Type/Activity Center Development Character	Description	rural	suburban	urban	special district
	Definition	Areas of contiguous, low-density housing, interspersed by larger areas of open space or agricultural lands.	Primarily residential areas surrounding the dense core(s) of a city.	Dense, often multi-story, mixed use core(s) that serve as city focal points.	Areas predominated by a single use, large in scale, and significantly concentrated employment.
	Measurement	density, transect, policy designation			
Urban Form	Description	conventional	hybrid	traditional (TND)	unique
	Measurement	land use mix, density, lot size, connectivity, setbacks, unique facilities/infrastructure			
Land Use Mix	Description	single use	separate uses	mixed uses	unique uses
	Measurement	number, proximity, integration, compatibility of land uses, buffer from dis-similar uses			
Density	Description	low	medium	high	
	Measurement	units/area, floor-area ratio, lot size/coverage, bldg. height, transect			
General Mobility Investment Strategy	Overall Strategy by Area Type	minimum investment standard to ensure safety for all modes and traffic flow	moderate investment by mode to create travel choice opportunities	high investment by mode to maximize travel choices	investment customized to unique needs; economic & freight/goods emphasis
		see tables by mode for specific mobility investment guidance			

Using the Tool

- Employs land use components to define character as a means to guide mobility investment strategies by travel mode.
- Defines land use components of area types and activity centers.
- Matrix can be read horizontally and vertically.
- Special districts include industrial/business parks, Pulliam Airport, and other unique land uses.
- “Suitability” for transit, bike and pedestrian investments improves within and across area types as mix and density increase.

F. Pedestrian and Bicycle Facilities and Opportunities

1. The table below provides miles of existing sidewalks located along major streets in the city. It should be noted that with few exceptions, sidewalks are absent along County roads in the region.

Sidewalks along Major Streets City of Flagstaff		
	Miles	Percent
Both sides	53.0	48.6
One side or partial	26.4	24.2
None	29.6	27.2
Total	109.0	100.0

2. The following table provides bike lanes as measured in miles along major streets in the city. County arterial and collector streets would generally rely on wide shoulders to provide appropriate bike facilities. Sections of Lake Mary Road meet this standard, but few others do.

Bike Lanes along Major Streets City of Flagstaff		
	Miles	Percent
Bike lanes	66.6	61.1
No bike lanes	42.4	38.9
Total	109.0	100.0

G. **Flagstaff Urban Trails System (FUTS)**

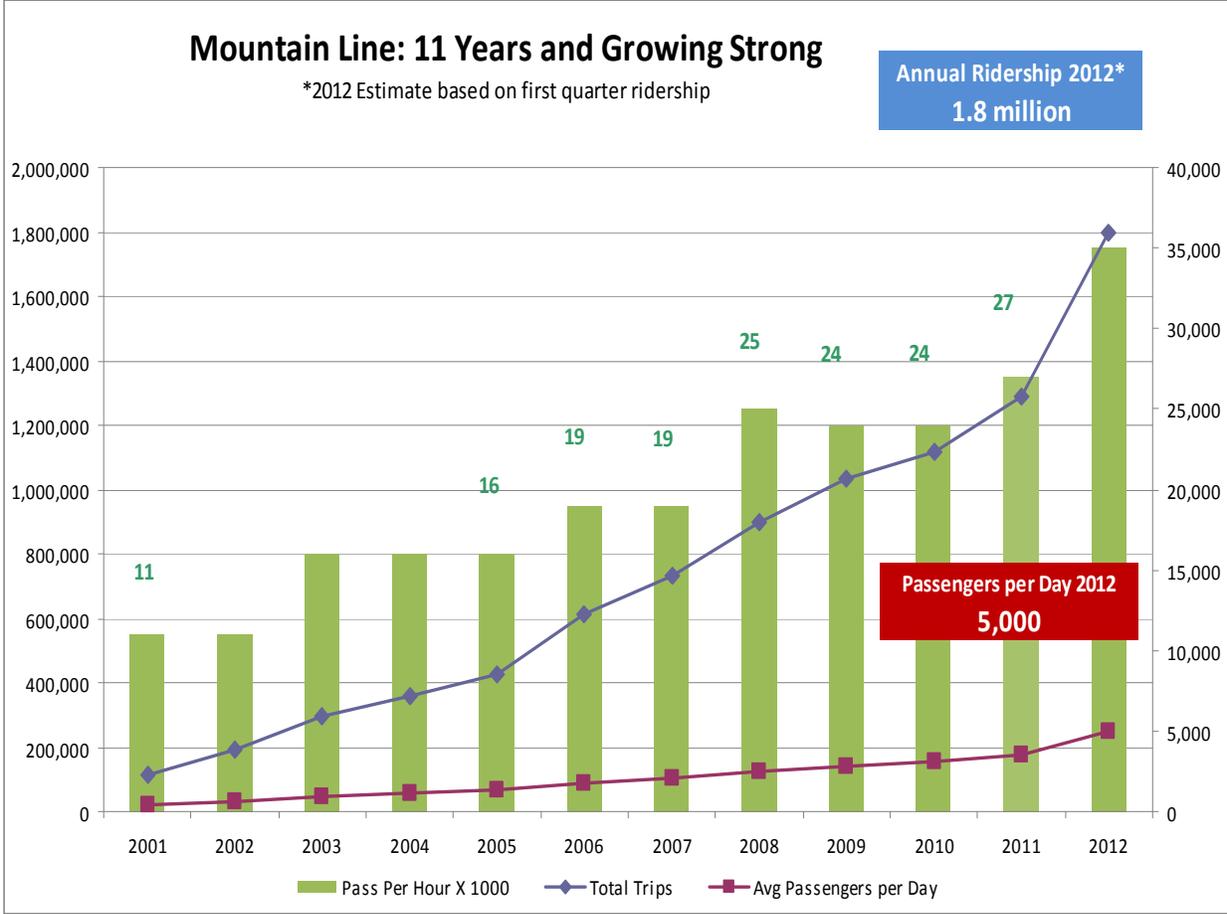
The following table provides existing and planned FUTS trails as measured in miles in the region.

FUTS Trails	
	Miles
Existing	54
Planned	78
Total	132

H. **Transit**

1. **Mountain Line Bus System**

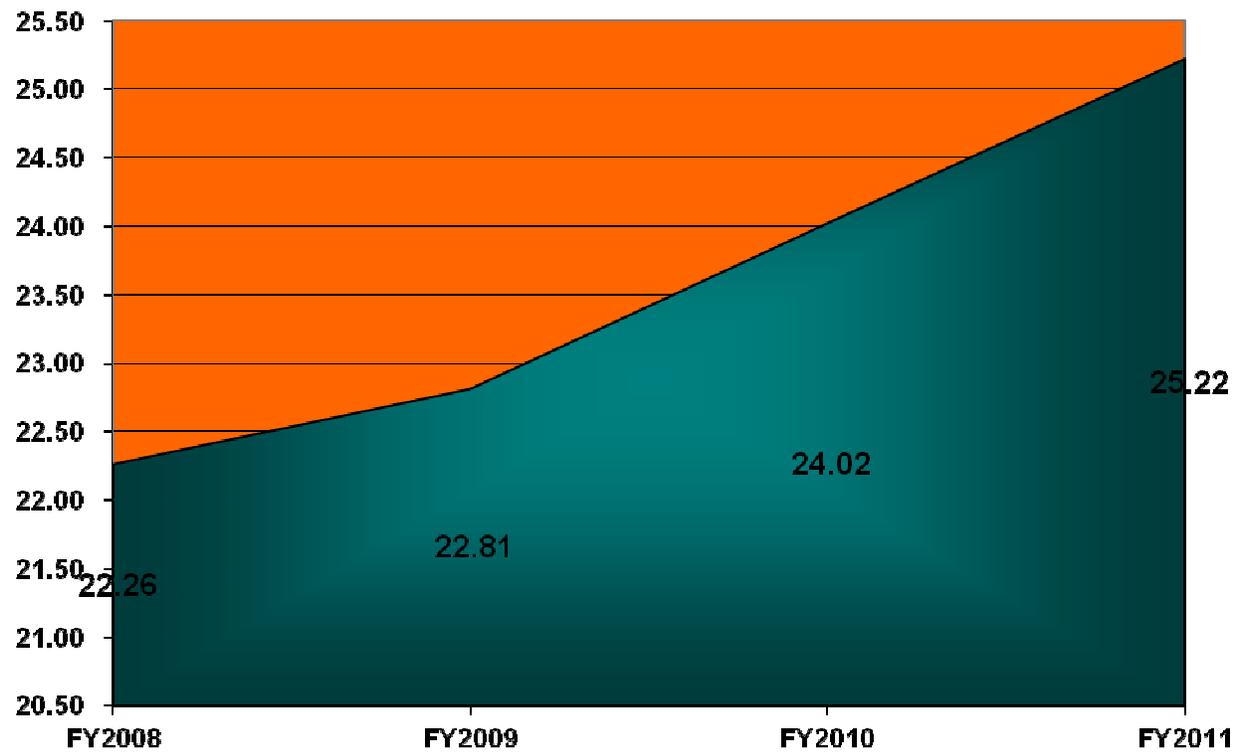
Mountain Line, provided by the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA), is a large part of Flagstaff's transport system. Route expansion has just occurred with the creation of Mountain Link and NAIPTA will be undertaking their next 5-year planning process in 2012 (kickoff in February). As shown in the chart below, ridership of the Mountain Line Bus System has steadily increased over the last ten years. This may indicate the need for additional transit lines and increased service in some areas. Additional transit service is provided on campus by Mountain Campus Transit. Intercity bus service is provided by Greyhound and some private shuttle services such as Open Road Tours and Flagstaff Shuttle.



Source: NAIPTA

The graph below shows the number of boardings per hour over the same time periods which have steadily increased each year. The number of boardings per hour increased by 2.96 passengers between FY2008 and FY2011.

NAIPTA History - Boardings per Hour (Bus)



Source: NAIPTA

Increased boardings per hour often indicates increased efficiency or utilization of seats on the bus. Eventually, buses become crowded and additional service – larger buses or a platoon of buses – is required

N. Focus Group

A Circulation and Bicycles Focus Group was conducted on June 11, 2009, from 3 - 6 p.m. at the Aquaplex, and consisted of experts, professionals and interested citizens who broke into groups to have a concerted discussion about certain topics. This document was previously provided to the CAC and posted upon the Regional Plan website. At the conclusion of the Focus Group meeting, a SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) was performed to summarize their comments in respect to Circulation and Bicycles, and to identify needs/concerns when developing the revised Regional Plan. The results of the SWOT Analysis are provided below:

CIRCULATION & BICYCLES	
Strengths	Opportunities
<ul style="list-style-type: none"> • Flagstaff Urban Trail System (FUTS) • Bicycle System – lanes, trails, maps • Bicycle Friendly – attitude and support • Mountain Line transit system • Newer Neighborhoods are better designed – keep this up! Example: Inclusion of trails, bike lanes, transit stops and sidewalks. • Short commute relative to other areas 	<ul style="list-style-type: none"> • Bicycle improvements: corridors and arterials • Incentives for reduction of car use. Examples could be (staff provided examples): <i>bus eco-passes (employees, jurors, etc.); well-connected trails & transit; retail ‘discounts’ for bike commuting; etc.</i> • Maintain Flagstaff uniqueness • Preserve wildlife corridors with all circulation decisions • Re-use, remodel and redevelop existing vacant business structures before building new business structures. • Use available Federal \$\$ • Increase citizen involvement in transportation decisions
Weaknesses	Threats
<ul style="list-style-type: none"> • Milton congestion overall • Lacking Freeway & Railroad overpasses • Lack of Milton & Fourth Street bikeways • Roads are not designed or maintained for their intended purpose. Example: Milton was intended as regional highway but has become a “main street”. • Communication – awareness of the Regional Transportation Planning process. 	<ul style="list-style-type: none"> • Wildlife preservation • Losing recreation corridors to new roads • Road standards that encourage high speeds

O. Flagstaff 2012 Regional Plan Community Values Survey

The following information concerning circulation and bicycles was obtained from the *Flagstaff 2012 Regional Plan Community Values Survey (Dec. 8, 2010)*, which was conducted by Northern Arizona University’s Laboratory for Applied Research. The CAC pre-tested a preliminary version of the questionnaire and provided critical feedback that contributed to the final version.

1. Circulation

A number of statements were developed to examine the location and adequacy of transportation modes within the region. When asked about planning priorities for transportation, respondents clearly saw automobiles as the highest, with 50% ranking it first. The other choices (public transit, pedestrian crossings, bicycles and walkways) were considered by a much smaller percentage of respondents to be the top planning priority.

In planning for transportation, which of the following should be given priority?	
Automobiles	50%
Pedestrian Crossing	11%
Walkways	9%
Bicycles	11%
Public Transit	16%

Another item asked respondents about where to put transportation resources with similar results. But when a direct statement is presented, “*When planning, motorists should be given priority over pedestrians and cyclists,*” the majority (54%) disagree with the statement.

Asked about the adequacy and convenience of public transit in the region, a high percentage of respondents did not know or were neutral. The statement about the transit system being sufficient to support city needs showed 45% agreeing or strongly agreeing, and 28% in disagreement or strong disagreement. The convenience of the transit system had a near even split, but with small percentages in the agreement and disagreement categories and with 43% in the neutral or don’t know categories.

The statement about traffic control being balanced among the various modes of transportation received a mixed response leaning toward the negative. Similarly, respondents felt that traffic congestion is a problem throughout the city.

About half of respondents felt that pedestrian and bicycle paths are adequate. Similarly, almost half of all respondents felt bike lanes were adequate. Two statements about bicycle commuters received mixed responses leaning toward positive; 43% agreed with bus discounts for bike commuters and 51% agreed with bike registration fees to support bike trails.

Table 14. Circulation.	SA	A	N	D	SD	?
1. The Flagstaff Transit System is sufficient to support city needs.	5%	40%	13%	20%	8%	15%
2. Bike lanes in Flagstaff are adequate.	7%	42%	17%	24%	4%	6%
3. In general, traffic congestion throughout the city is not a problem.	1%	20%	12%	43%	24%	0%
4. Pedestrian and bicycle paths in the community are adequate.	7%	41%	20%	26%	3%	3%
5. When planning, motorists should be given priority over pedestrians and cyclists.	7%	20%	19%	30%	24%	0%
6. Traffic control is adequately balanced among pedestrians, cyclists, public transit, and drivers.	5%	24%	27%	31%	8%	5%
7. Public transit is convenient (i.e. frequent services and accessible) throughout the community.	2%	30%	22%	18%	8%	21%
8. Flagstaff should give bike commuters bus discounts.	14%	29%	24%	18%	12%	2%
9. I would support a mandatory bike registration fee to support bike trails.	14%	37%	13%	23%	11%	2%

Finally, a statement about parking in downtown Flagstaff showed that 42% of respondents thought it should be left alone, followed by 35% supporting a public parking structure. Only 3% supported metered street-side parking. However, 16% supported a combination of using metered parking and a parking structure.

Table 15. Circulation Parking.	
Parking in downtown Flagstaff should be:	
Left alone.	42%
Changed to metered street side parking.	3%
Changed by building a public parking structure.	35%
Changed to metered street-side parking and by building a public parking structure.	16%
No Response.	4%

2. The following table also provides survey results related to the adequacy of regional trails that are used for biking and hiking.

Table 19. Recreation.	SA	A	N	D	SD	?
1. The urban trail system should be lighted within the city limits.	10%	37%	16%	17%	15%	5%
2. Established playing fields, courts, and equipment are adequate in the Flagstaff region.	14%	41%	14%	21%	5%	6%
3. My neighborhood has adequate recreation facilities.	9%	39%	14%	24%	12%	2%
4. The Flagstaff Aquaplex is affordable.	8%	27%	21%	19%	5%	20%
5. Flagstaff has adequate trails for hiking or biking.	27%	49%	11%	7%	2%	3%
6. Snowplay areas are needed within the city.	26%	47%	12%	13%	1%	1%
7. Open space for recreation should be increased.	18%	38%	28%	12%	3%	1%
8. City recreation fees are affordable.	7%	25%	30%	13%	3%	22%

3. A summary of survey results was also provided, in which the following determinations were suggested:

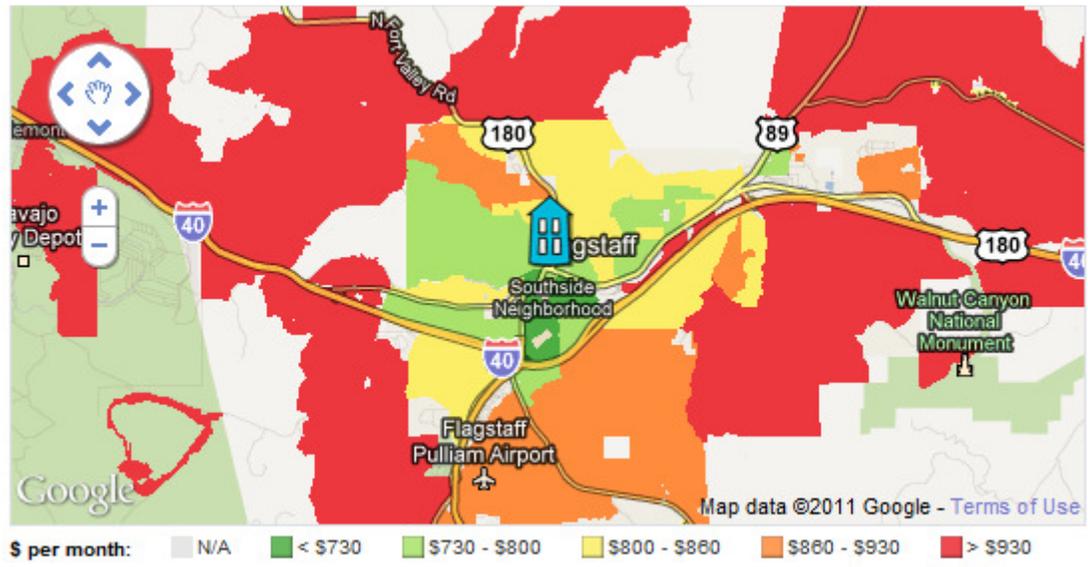
- Generally, respondents look favorably upon recreation facilities including trails for hiking and biking.
- Automobiles were viewed as the top priority, but also were not seen as more important than pedestrians and cyclists.
- Traffic control being balanced among various modes received a mixed response and congestion is seen as a problem.
- Public transit adequacy and convenience produced neutral or “don’t know” responses.

A strategic response to this would be the continued investment in all modes with some renewed emphasis on vehicular operations, not necessarily including or excluding new capacity.

P. Transportation Costs and Housing

The regional average spent on transportation costs for an average household is \$894 per month, excluding the cost of automobile ownership (Transportation Costs Made Transparent, abogo.cnt.org). As shown in the figure below, there is a direct relationship between transportation costs and distance lived from the City center throughout the region. Transportation costs directly affect housing affordability, and planning for an efficient land use pattern and network and multimodal opportunities to serve it could reduce a household’s expenditure.

Average Transportation Costs in the Flagstaff Region



Source: Transportation Costs Made Transparent, abogo.cnt.org

F. Element Relationship

The following briefly addresses the relationship of the Circulation and Bicycle Element between other regional plan elements under study.

1. Strong Relationship:

a. Land Use & Growth Management: The following goals and policies from the existing regional plan have a close relationship to the Circulation and Bicycle element:

• GOAL LU1

Greater Flagstaff will have a compact land use pattern within a well-defined boundary that shapes growth in a manner that preserves the region’s natural environment, livability, and sense of community. Flagstaff will continue to offer the primary types of housing design developments that have defined its land use patterns: the conventional and traditional neighborhood scale which provides a choice of housing types and supporting non-residential uses within walking distances.

- *Policy LU1.1—Develop a Structural Framework for the Regional Land Use and Transportation Plan*
- *Policy LU1.4—Encourage Development Within the Urban Growth Boundary*
- *Policy LU1.5—Provide for New Mixed-Use Neighborhoods*
- *Policy LU1.6—Require Urban Development to Locate within City Boundaries*
- *Policy LU1.7—Promote Infill Development*

- *Policy LU1.9—Promote Quality Design*
- *Policy LU1.10—Place Emphasis on all Transportation Modes*
- *Policy LU1.11—Place Emphasis on and Encourage Traditional Neighborhood Development and Redevelopment Design*
- *Policy LU3.4—Work Towards Determining Appropriate Levels of Recreational Uses in Urban Interface Area*

• **GOAL C1**

Shopping and service areas will be convenient to residents as well as visitors to the region in a manner that meets their needs, while remaining compatible with surrounding land uses.

- *Policy C1.1—Designate Commercial Areas According to their Role and Function in the Region*
- *Policy C1.2—Apply Design and Locational Standards for Large Retail Commercial Developments, Including “Big-Box” Retail*
- *Policy C1.3—Include a Mix of Uses in New Commercial Development and Redevelopment*
- *Policy C1.4—Promote A High Quality Urban Environment in all Commercial Development Areas*
- *Policy C1.5—Design and Establish Neighborhood Commercial Centers*

• **GOAL C2**

Downtown Flagstaff will continue to serve as the focal point of the community, as established by development intensity, land use, building height, and high quality urban design.

- *Policy C2.1—Reinforce the Role of Downtown*

• **GOAL C3**

Commercial uses in the county will be located in activity centers in specifically designated areas intended to serve as focal points for the community in which they are located, and they will provide opportunities to meet area resident needs locally, while avoiding a strip commercial pattern of development along the region’s major roadways.

• **GOAL IE1**

The community will enjoy a healthy, thriving economy with opportunities for quality and diversified employment of various economic levels for its residents with livable wages, and environmentally responsible industries that make a positive contribution to the community and the economy.

- *Policy IE1.4—Designate Appropriate Location for Employment Uses*
- *Policy IE1.5—Designate Appropriate Employment Centers*
- *Policy IE1.6—Provide for Home Occupations*

b. Safety:

c. Conservation:

- NCR1.1 – air quality

d. Growth Area: Typically are Greenfield areas designated for future development. The Urban Growth Boundaries are to accommodate a 10 year supply of land. The location of growth areas are at the peripheral thereby increasing transportation costs and decreasing affordability.

e. Cost of Development:

Having adequate and logical extension of infrastructure in place (water, sewer, etc) will affect development costs and influence location of development/infill consideration.

f. Recreation: Healthy lifestyle for all –children and adults

g. Community Character:

- CD1.4 entry points
- CD2.2 streetscape
- CD2.5 design
- CD2.7 protect character

h. Housing:

- HN2.1 mixed use neighborhoods
- HN2.2 interconnected streets and sidewalks

i. Neighborhood Preservation and Redevelopment:

2. **Moderate Relationship:**

a. Open Space: Identifying quality ecosystems may assist in identifying valuable lands to acquire and preserve. Although preserving lands may appear to limit supply for development, these lands are typically beyond the city's urban growth boundary and are high quality for the ecosystem that the community desires protection. Identifying them can help in determining if and what kind of transportation service is needed.

b. Energy: Transportation represents a significant part of regional energy consumption.

c. Public Facilities and Services/Buildings: To the degree that public facilities can be appropriately integrated into mixed use centers and contribute centers' abilities to be served by multiple modes, they can serve broader transportation objectives.

G. Additional Resources and Reading [ADD Links from Webpage]

1. *FMPO Flagstaff Pathways 2030 Regional Transportation Plan “Tracking Our Region’s Transportation Trends”*
2. *FMPO Flagstaff Pathways 2030 Regional Transportation Plan “Final Report December 2009”*
3. **I-17: Junction SR 179 to I-40** http://www.azdot.gov/highways/Projects/I17_SR179_to_I40/

H. Existing Goals And Policies

Explores whether current plan and goals/policies are working or need ‘tweaking’ by:

- Listing existing Goals and Policies.
- Providing a professional/staff critique and recommendation of the existing goal/policy.
- Implementation – working/not working.
- Identifying potential strategies.

Existing Element: Transportation

1. **Existing GOAL T1:** *[A safe, convenient, user-friendly transportation system will be developed throughout the region], addressing both short- and long-term needs, and emphasizing alternative transportation modes while reducing dependency on the automobile.*

Professional and Staff Comments: Still relevant and consistent with surveys.

Ben A.:
 It seems that T1 as it stands could be the single goal for the entire element - with everything else as policies. It has a generality and an all-encompassing nature to it that is better expressed in the introductory materials. I think it needs to be broken up into 2 or 3 distinct goals.

I do think the policies under T1 are sufficient but strategies will need to be more robust. We have much data and planning that have been done on these issues and I think the strategies need to reflect this information more comprehensively.

Kate M.:
 Suggested, revised Goal T1: *A safe, convenient, efficient and user-friendly transportation system will be developed throughout the region.*

“addressing both short and long-term need” - more of a policy

“emphasizing alternative transportation modes while reducing dependency on the automobile” - Goal 2?

Nat W.:
 Providing convenient economical options to the automobile says more by acknowledging what draws folks to driving

Suggested Goal(s):

Rational:

Existing POLICY T1.1: *Develop a Balanced Transportation System*

Professional and Staff Comments: Not clear without supporting strategies.

Suggested Policy: Develop a transportation system that is balanced across modes that serve the movement of people and goods within and to and from the region.

Rational:

Existing Strategies: *T1.1(a): Develop Multi-modal Street Design Criteria*
T1.1(b): Establish Multi-modal Corridors
T1.1(c): Coordinate With ADOT and FHWA

Professional and Staff Comments: These are strategies and not per se necessary. The coordination comment might be address by language regarding context sensitivity regardless of jurisdiction.

- T1.1(a) –
- T1.1(b) –
- T1.1(c) –

Suggested Strategies: Development of multimodal levels of service tied to context is appropriate here.

Existing POLICY T1.2: *Create an Efficient Transportation System*

Professional and Staff Comments: Would benefit from better description.

Suggested Policy: Create an efficient and resilient transportation system within and across corridors and modes in the network.

Rational: Implies operational (corridor) and system (network) needs while modes and resiliency addresses choices.

Existing Strategies: *T1.2(a): Develop a Traffic Signal Capital Program and Management System*
T1.2(b): Develop Transportation Facility Design and Updated Roadway Cross Section Guidelines
T1.2(c): Develop Connectivity Guidelines

Professional and Staff Comments:

- T1.2(a) –
- T1.2(b) –
- T1.2(c) –

Suggested Strategies:

Existing POLICY T1.3: *Establish Roadway Improvements Categories*

Professional and Staff Comments: Without strategies this becomes very vague as to what its purpose and reasons are.

Suggested Policy: Prioritize transportation investments based on a combination of their ability to balance transportation, economic, community character, environmental and other community values.

Rational: Sets the tone for identifying context and value within investment priorities.

Existing Strategies: T1.3(a): *Develop and Adopt a Transportation Improvement Program*

Professional and Staff Comments:

- T1.3(a) –

Suggested Strategies:

Existing POLICY T1.4: *Reduce Negative Traffic Impacts in Residential Neighborhoods*

Professional and Staff Comments: Still appropriate. May be a strategy under revised T1.6 which speaks to context. May want to change “Reduce” to “Manage” or “Manage to reduce as much as is practical...” as sheer growth may inflate traffic on some roads.

Suggested Policy:

Rational:

Existing Strategies: T1.4(a): *Develop a Traffic Mitigation Program*

Professional and Staff Comments:

- T1.4(a) –

Suggested Strategies:

Existing POLICY T1.5: *Coordinate Regional Transportation Funding*

Professional and Staff Comments: Possibly a strategy under revised T1.3 that speaks to funding priorities would need to identify public and private transportation funding providers in general.

Suggested Policy:

Rational:

Existing Strategies: *T1.5(a): Develop and Adopt Transportation Funding Mechanisms*

T1.5(b): Pursue Mass Transit Funding

T1.5(c): Develop and Adopt Measures Requiring On-Site Improvements

Professional and Staff Comments:

T1.5(a) –

T1.5(b) –

T1.5(c) –

Suggested Strategies:

Existing POLICY T1.6: *Establish a Roadway Planning Categorization and Access Management System*

Professional and Staff Comments: This is really a strategy that speaks to the broader policies of context sensitivity and roadway functionality.

Suggested Policy: Regional road, transit and other modal systems, and their component parts, will be designed with a level of service and connectivity appropriate to the context of their built and natural environment.

Rational:

Existing Strategies: *T1.6(a): Adopt a Roadway Planning Categorization System and Map*

T1.6(b): Develop an Access Management System

Professional and Staff Comments: Roadway Planning Categories (aka. Functional classification) and access management are appropriate strategies in achieving LOS serving context.

T1.6(a) –

T1.6(b) –

Suggested Strategies: Connectivity standards.

Existing POLICY T1.7: *Recognize the Importance of Rail Freight and Passenger Service*

Professional and Staff Comments: See T1.1 and T1.2 we may wish to be more explicit about passenger and freight rail somewhere. Maybe as strategies under T1 and 2.

Suggested Policy:

Rational:

Existing Strategies: *T1.7(a): Work With Railroad Service Providers*

Professional and Staff Comments:
T1.7(a) –

Suggested Strategies:

Existing POLICY T1.8: *Identify Truck Circulation Needs*

Professional and Staff Comments: See T1.1 and T1.2 we may wish to be more explicit about truck freight somewhere. Maybe as strategies under T1 and 2.

Suggested Policy:

Rational:

Existing Strategies: *T1.8(a): Develop a Truck Circulation Plan*

Professional and Staff Comments:
T1.8(a) –

Suggested Strategies:

Existing POLICY T1.9: *Provide Intermodal Connectivity*

Professional and Staff Comments: Maybe as strategies under T1 and 2.

Suggested Policy:

Rational:

Existing Strategies: *T1.9(a): Provide for All Ground Transportation Modes*
T1.9(b): Identify and Implement Capital Projects Providing for Inter-modal Connections

Professional and Staff Comments:
T1.9(a) –
T1.9(b) –

Suggested Strategies:

2. **Existing GOAL T2:** *An enhanced public transit system will be promoted as an integral part of the region's overall transportation system.*

Professional and Staff Comments: A policy under T3.

Kate M.:

Suggested, revised Goal T2: *The public transit system is an integral part of the region's overall transportation system.*

Or, alternative goal: *To develop a public transit system that is an attractive alternative to personal automobile use.*

Suggested Goal(s): Make this a policy. *An enhanced public transit system will be promoted as an integral part of the region's overall transportation system and land use development patterns.*

Rational:

Existing POLICY T2.1: *Coordinate a Public Transit System*

Professional and Staff Comments: Strategy.

Suggested Policy:

Rational:

Existing Strategies: *T2.1(a): Implement Short-Range Transit Plan*

Professional and Staff Comments:

T2.1(a) –

Suggested Strategies:

Existing POLICY T2.2: *Develop a Cost-Effective and Efficient Public Transit System*

Professional and Staff Comments: Strategy.

Suggested Policy:

Rational:

Existing Strategies: *T2.2(a): Identify Revenue Sources*
T2.2(b): Develop Transit System

Professional and Staff Comments:

- T2.2(a) –
- T2.2(b) –

Suggested Strategies:

Existing POLICY T2.3: *Integrate Transit System Design*

Professional and Staff Comments: Strategy.

Suggested Policy:

Rational:

Existing Strategies: *T2.3(a): Integrate Multi-modal Street Design Criteria*

Professional and Staff Comments:

- T2.3(a) –

Suggested Strategies: Transit Oriented Development

- 3. **Existing GOAL T3:** *The region’s development pattern will support a diverse range of transportation choices including transit walking and bicycling, as well as driving.*

Professional and Staff Comments: May be redundant with land use goals.

Ben A.:
T2 and T3 seem fine to me and cover the issues as I understand them.

I also have no objections to and probably support the policies suggested by the Bicycle Advisory Committee as an alternative.

Kate M.:
Suggested, revised Goal T3: *The region’s development pattern will encourage a diverse range of transportation choices including transit, walking and bicycling, as well as driving, through quality design.*

New policies to include separate section for trails which could include bike, pedestrian and equestrian, neighborhood centers in range of walking and biking from neighborhoods, interconnection for all modes in new and re-development, environmental design- wildlife impacts and storm water/ LID (this may be a separate goal). Also, I don’t know that I have seen it catch on here yet, but motorized bikes are becoming a big issue... where do they go?

Suggested Goal(s): *The region’s development pattern will support, and be supported by, a diverse range of transportation choices including transit walking and bicycling, as well as driving.*

Rational:

Existing POLICY T3.1: *Establish a Comprehensive Bicycling Network and Trails System*

Professional and Staff Comments: Should tie into context objectives.

Suggested Policy: *Establish a comprehensive bicycling network and trails system well-suited to serving high volume short and mid-range utilitarian trips as well as access to and service of longer distance recreational trips.*

New policy: Transit services will grow in the level frequency and capital investment commensurate with the intensity of activity and development of the community.

Rational:

- Existing Strategies:**
- T3.1(a): Implement Transportation Improvement Program*
 - T3.1(b): Coordinate Trail Programs with USFS Trail System*
 - T3.1(c): Identify Critical Bikeways Corridors*
 - T3.1(d): Develop Bikeways Facilities*
 - T3.1(e): Develop Standards for Range of Cyclists*

Professional and Staff Comments:

- T3.1(a) –
- T3.1(b) –
- T3.1(c) –
- T3.1(d) –
- T3.1(e) –

Suggested Strategies:

Existing POLICY T3.2: *Promote Accessible, Pedestrian-Friendly Community Design*

Professional and Staff Comments: OK

Suggested Policy:

Rational:

- Existing Strategies:**
- T3.2(a): Adopt Accessible Community Design Standards*
 - T3.2(b): Adopt Transit-Oriented Design Standards*
 - T3.2(c): Establish Pedestrian Districts*

Professional and Staff Comments:

- T3.2(a) –
- T3.2(b) –
- T3.2(c) -

Suggested Strategies:

4. **Existing GOAL T4:** *The Region’s transportation system will be developed and managed with attention both to supply-side (e.g., new roads) and to demand-side strategies.*

Professional and Staff Comments: Needs explanation and expansion beyond roads.

Suggested Goal(s): *The Region’s transportation system will be developed and managed with attention both to supply-side (e.g., new roads, new transit service) and to demand-side strategies (e.g., land use, pricing).*

Rational:

Existing POLICY T4.1: *Promote Transportation Modes Other than Single Occupancy Vehicles*

Professional and Staff Comments:

Suggested Policy:

Rational:

Existing Strategies: *T4.1(a): Cooperate with Area Employers*
T4.1(b): Implement the Regional Plan Land Use, Neighborhood, and Economic Development Policies

Professional and Staff Comments:

- T4.1(a) –
- T4.1(b) -

Suggested Strategies:

General Comments on Goals and Policies:

Ben A.:

Similar to a discussion on Open Space that we had with the CAC, I support the explicit identification of the specific traffic and circulation issues that are most concerning to us so that it serves as a priority list for those working on these issues. I know that mapping and

data will be provided that suggest these areas - but I would like a section where we spell those specific issues/areas out in writing.

Kate M.:

Sometimes the policies are essentially restatements of pieces of the goal. That is fine, let's just be consistent about it or break apart goals so that they are not lumping so many ideas together and needing separating out as policies.

The goals don't always seem to match the policies below and there is a lot of overlap (i.e., each section talks about multimodal). I think a lot of the policies still apply but a re-structuring could help the flow. Major topics seem to be: safety, efficiency, multimodal, quality design for humans and goods. I have taken a stab at reorganizing but many ways it could be done. Also, there does not seem to be consistent hierarchy among goals, policies and strategies....

For all strategies: What has been done?

Other major areas to be hit on:

Health benefits associated with walkability, bikability, air quality.

Could include policies related to schools, walking school bus/ reducing congestion from drop off/ pick up, safe routes to schools.

Environmental benefits/ impacts: wildlife crossings, LID, control for non-native species during construction/ maintenance, designed to protect views air quality, environmental resources, energy efficient.

I. Recommended Bicycle Policies - per City of Flagstaff Bicycle Advisory Committee, January 7, 2010

1. Develop recognition of bicycling as a legitimate and beneficial form of transportation.
2. Establish and maintain a comprehensive system of bikeways that seamlessly connect neighborhoods, shopping, employment, schools, parks, open space, and public transit hubs.
3. Educate bicyclists and motorists about bicyclist safety through education programs, targeted enforcement and detailed crash analysis.
4. Provide short and long term bicycle parking at all places where bicyclists want to go, including commercial areas, employment centers, multi-family developments, schools and institutions, recreational facilities, and transit facilities.
5. Ensure that policies to increase cycling and meet the needs of bicyclists are fully integrated into all of the City's plans, policies, studies, strategies, and regulations.

J. Proposed Outline of the Circulation and Bicycle Element

1. Introduction

- a. Purpose of Circulation and Bicycle Element
- b. History / Background
- c. Summary of Circulation and Bicycle Characteristics

2. Relationship to Vision and Guiding Principles

3. Circulation and Bicycle

ⁱ More historical population figures, as provided by ESRI:

List of Acronyms

ADA: Americans with Disabilities Act

ADOT: Arizona Department of Transportation

A.R.S.: Arizona Revised Statutes

CAC: Citizens Advisory Committee (for the Regional Plan update)

CSS: Context Sensitive Solution

ESRI: Environmental Systems Research Institute

FMPO: Flagstaff Metropolitan Planning Organization

FUTS: Flagstaff Urban Trails System

LOS: Level of Service

NAIPTA: Northern Arizona Intergovernmental Public Transportation Authority

RLUTP: Flagstaff Regional Land Use and Transportation Plan

RTP: Flagstaff Metropolitan Planning Organization Flagstaff Pathways 2030 Regional Transportation Plan

SWOT: Strengths, Weaknesses, Opportunities and Threats (Method of Analysis)

Glossary

Activity Center: An area within a community characterized by mixed land uses, high density, and compact, traditional development patterns, typically resulting in a high level of activity.

Alternative Mode:

Area Type: The character of an area related to its pattern of development – urban, suburban or rural.

Arterial Street: A larger road or highway purposed to carry longer trips across the region and to other regions.

Collector Street: A street purposed with collecting traffic from surrounding local roads, often within a neighborhood or district, and delivering to an arterial street.

Commuter [Bus] Route: A fixed bus route running only during peak commuter times, usually in the morning and evening.

Compact Development: Development that takes place within a defined, concentrated or central area, sometimes designated by an urban growth boundary.

Complete Streets: Streets, roadways and highways that are designed to safely and attractively accommodate all transportation users: drivers, bus riders, pedestrians and bicyclists. Travelers of all ages and abilities can safely move along and across a complete street.

Context: The nature of the surrounding environment including its development patterns, density, landscaping, history, residential, commercial or undeveloped character and other aspects to be respected.

Context Sensitive Solution (CSS): A way of designing and building transportation facilities and infrastructure to seamlessly reflect and minimize impacts to adjacent land uses and environmentally-sensitive areas. A CSS project complements its physical and natural setting while maintaining safety and mobility.

Density: The amount of development within a given area, usually expressed in dwelling units, population or employment per acre or square mile.

Infill Development: Development that occurs on vacant parcels that are surrounded by existing Development.

Local Street: Local streets serve immediate access to property and are designed to discourage longer trips through a neighborhood.

Mixed Use Development: A diverse and complimentary set of uses within close proximity to each other through vertical integration and/or smaller lot sizes.

Mobility: The degree to which people and goods may move safely, efficiently, and effectively between origins and destinations.

Mode: A means of travel such as pedestrian, bicycle, transit, or truck.

Mountain Link: Direct, high-frequency transit service between Woodlands Village, the NAU Campus and Downtown Flagstaff.

Multimodal: Travel or transportation systems characterized by more than one means or mode of Transport.

Redevelopment: The removal of existing development and replacement with newer structures that may contribute to the transformation of the area type.

Transect: A sample strip of land, from the center of a region to the edge, used to examine or define development patterns.