

South Lone Tree Road

Planning & Environmental Linkages (PEL) Study

January 2023



METROPLAN

GREATER # FLAGSTAFF

Prepared by



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January 2023

Prepared for



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I. INTRODUCTION

The Planning and Environmental Linkages (PEL) Study Area consists of South Lone Tree Road between and includes the intersections at Zuni Drive and J.W. Powell Boulevard (Figure 1). This PEL Study Area is the first phase of corridor planning and improvements to connect Lone Tree Road to Route 66 and the future J.W. Powell Blvd. east-west extension.

4,000 to 5,500 dwelling units are planned or proposed for development near and immediately adjacent to South Lone Tree Road PEL Study Area. The South Lone Tree Road Corridor and vicinity is currently open land with minimal infrastructure and population. The existing Lone Tree Road is an undivided, 2-lane minor arterial connecting communities, neighborhoods, commerce, and educational opportunities. As identified in several previous transportation and development studies, the existing Lone Tree Road will not support future travel levels.

The PEL Study Area is incorporated into both long-term and short-term transportation planning efforts that are guided by regional policies and initiatives. These plans include large-scale, long-term regional transportation projects including the planned Lone Tree Corridor. While South Lone Tree Road is not specifically discussed, actions have been taken to study the increased traffic volumes for the planned and currently approved developments in the area and eventual incorporation into the future regional transportation plans.

The Lone Tree Corridor Specific Plan (2008) was further validated by inclusion in the Flagstaff Regional Plan 2030 (ratified 2014) and Blueprint 2040: Regional Transportation Plan (2017). The north end of the corridor was funded by the City of Flagstaff Proposition 419 (2018). Proposition 419 also funds the south end of the corridor in which the PEL study area lies. This section is not addressed in the Lone Tree Corridor Specific Plan.

In addition to Lone Tree Road being identified in the Regional Plan and Blueprint 2040, other studies and planning efforts have taken place in response to the future development and the significance of Lone Tree Road providing a vital north-south connection:

- Towns on Lone Tree Traffic Impact Analysis (2020)
- Juniper Point Traffic Impact Analysis (2014)
- Zuni/S. Lone Tree HSIP Project assessment report (2013)
- Lone Tree Corridor Specific Plan (2008)
- Lone Tree Corridor Study (2006)
- Juniper Point Specific Plan (2006)

Each of these studies indicates a need for expansion to not only support future demand and capacity but to also support future growth and development in Flagstaff.

The South Lone Tree Road Expansion (PEL Study Area) constitutes the first phase of Lone Tree Road expansion efforts and will widen and upgrade the roadway to a divided, four-lane minor urban arterial. Project facilities will be “complete streets” with sidewalks and/or Flagstaff Urban Trail System (FUTS) on both sides of the street that corresponds with City policies related to the Active Transportation Master Plan and the Carbon Neutrality Plan.

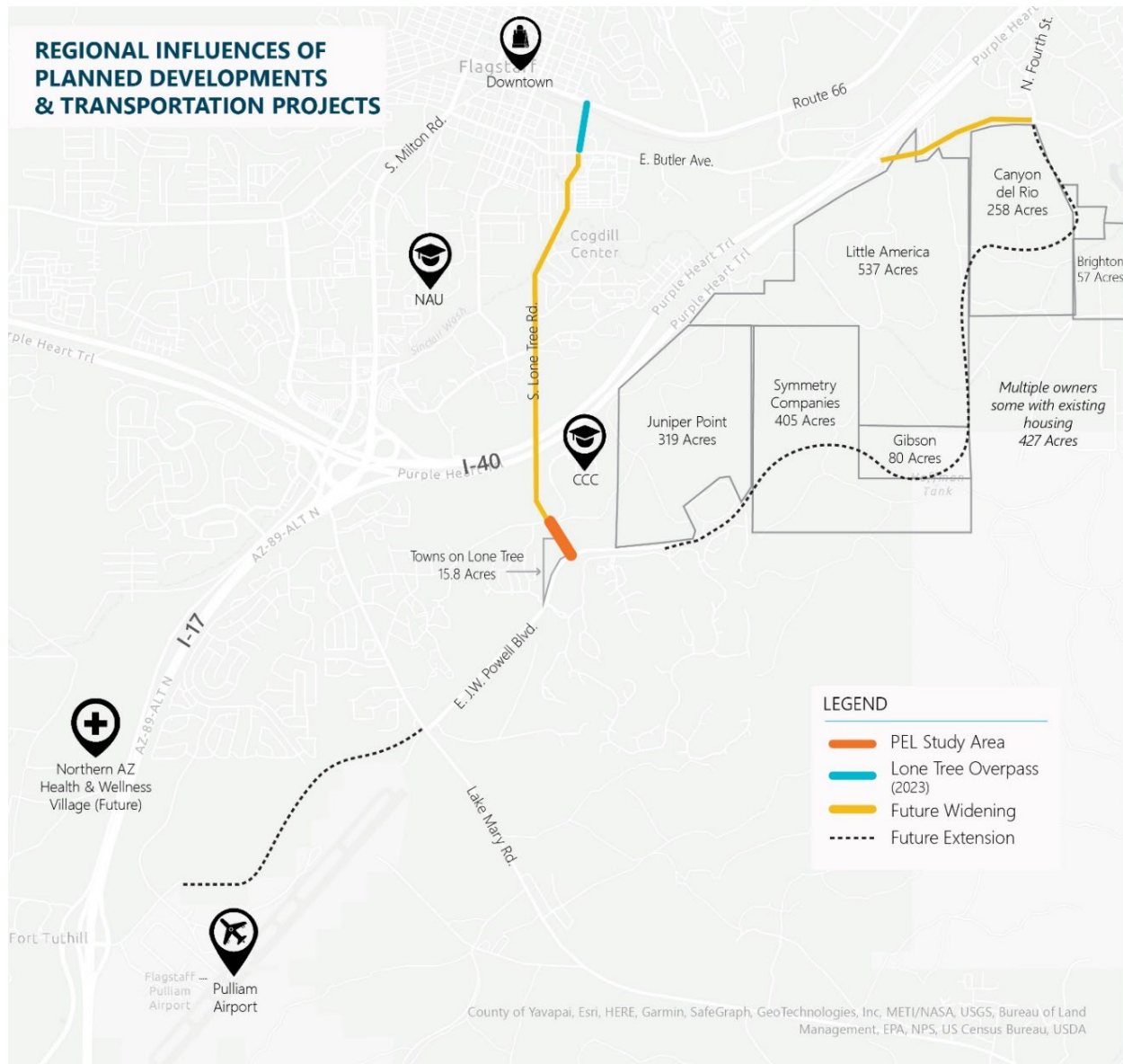
Figure 1: PEL Study Area



II. PURPOSE AND NEED

The purpose of expanding South Lone Tree Road is to respond to future growth and development and improve system connectivity to the Lone Tree Overpass to the north and the J.W. Powell Blvd. east-west expansion. Figure 2 provides an overview of planned developments and transportation projects that will impact South Lone Tree Rd.

Figure 2: Planned Developments and Transportation Projects



Multiple studies analyzed the effects of the planned developments near and along South Lone Tree Road and the increased traffic volumes they will bring. Findings determined that upgrades and expansion will improve safety, future vehicle capacity, and multimodal demand. In addition to roadway expansion, studies have shown that implementing a signal or roundabout at the Zuni and Lone Tree intersection will significantly improve safety, convenience, and mobility for all road users.

Lone Tree Road expansion and upgrades will support the planned future developments and regional growth through a vital north-south connection that is currently lacking. This project will ensure safe and improved connections to transit, commerce, and schools. In addition to developments near South Lone Tree Road, Northern Arizona Healthcare (NAH) is relocating from its current location near downtown Flagstaff to an area north of Fort Tuthill County Park. J.W. Powell will provide direct access to the NAH Health and Wellness Village, while the Lone Tree Road future improvements will provide improved north-south access from the city core to reach these facilities for both emergency responders and the public. Additionally, the South Lone Tree PEL Study Area expansion will improve multi-modal connections through dedicated bike lanes, intersection crossings, and the Flagstaff Urban Trails System (FUTS) shared-use path to meet current city policies and standards.

The Lone Tree Corridor Specific Plan (2008) provides an overview of future growth and development, along with identifying a new traffic interchange (TI) off Interstate 40 (I-40) and other Lone Tree Road improvements to support growth along this vital north-south connector. The I-40 TI has been identified in regional plans for over 30 years. The I-40 TI is an exceptionally high-expense undertaking and is not funded and is not expected to be funded for at least 20 years. Therefore, the existing South Lone Tree Road will serve as a primary connector to greater Flagstaff for the new communities and their residents.

Public outreach and a survey were conducted as part of the study. Findings show that most participants frequently commute through or regularly walk, bike, or access the Flagstaff Urban Trails System (FUTS) in the Study Area. The topics of pedestrians and bicycles, and safety ranked the highest in terms of concern and needs for improvements within the study area.

Safety concerns in the study area were centered around the intersection of Zuni and Lone Tree. When asked to rank the needs within the study area, *“to improve safety conditions for all road users”* ranked the highest at 80%. Comments around safety included the need for a signalized stop or roundabout at intersections and improved crossings for bicyclists and pedestrians. Speeding and the difficulty for drivers making a left turn from Zuni onto Lone Tree were also cited. Appendices L and M provides more details on the survey and public outreach findings.

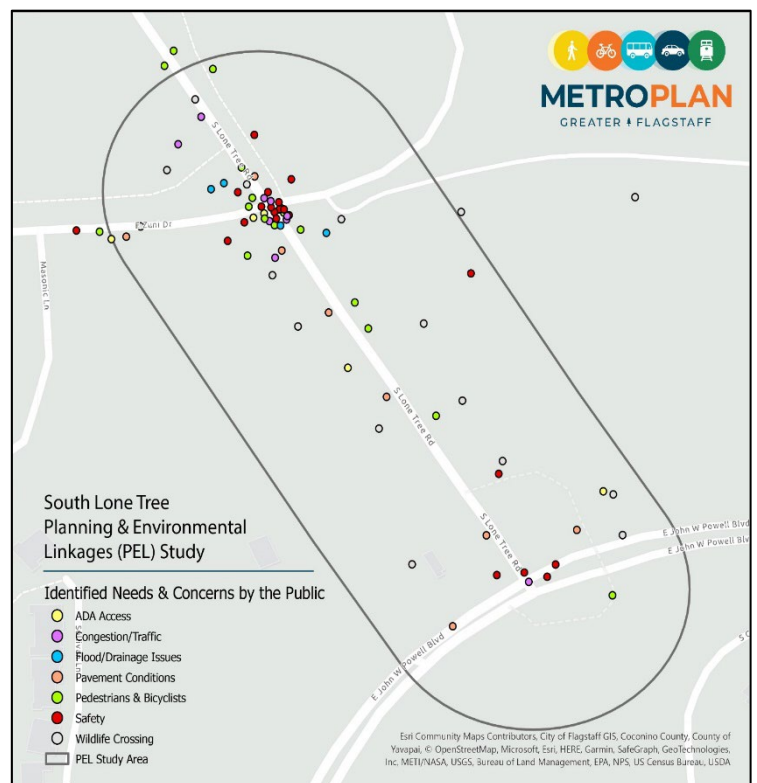


Figure 3: Needs mapping by the public

III. CORRIDOR BASE CONDITIONS

The purpose of the environmental overview for the *South Lone Tree Planning and Environmental Linkages* (PEL) is to outline both the existing and future environmental and transportation resources, conditions and information in the study area, environmental conditions, and potential concerns. This information will be used to avoid developing future roadway design alternatives that should be ruled out based on environmental challenges that likely can't be overcome as well as recognize and minimize environmental impacts.

The PEL Study Area is incorporated into both long-term and short-term transportation planning efforts that are guided by regional policies and initiatives such as those listed below:

- Active Transportation Master Plan (2022)
- Towns on Lone Tree Traffic Impact Analysis (2020)
- Blueprint 2040: Regional Transportation Plan (2017) - Update in progress (*Stride Forward*)
- Flagstaff Regional Plan 2030 (Ratified 2014) - Update in progress (*Regional Plan 2045*)
- Juniper Point Traffic Impact Analysis (2014)
- Zuni/S. Lone Tree HSIP Project assessment report (2013)
- Lone Tree Corridor Specific Plan (2008)
- Lone Tree Corridor Study (2006)
- Juniper Point Specific Plan (2006)

The following planning documents are the most impactful and provide context to the subject South Lone Tree PEL Study Area. These plans discuss large-scale, long-term regional transportation planning including the planned Lone Tree Corridor. Until fully implemented, existing transportation arterials such as South Lone Tree Road are not specifically discussed, however, will continue to provide accommodation for increased traffic volumes for planned developments in the area and eventual incorporation into the future regional transportation plans.

A. Flagstaff Regional Plan 2030 (2014)

The Flagstaff Regional Plan 2030 identifies eight guiding principles identified to help promote future development. These eight guiding principles represent collective community values. These principles have carried into the Blueprint 2040 Regional Transportation Plan. These include: the environment matters, sustainability matters, a smart and connected community matters, prosperity matters, people matter, place matters, cooperation matters, and trust and transparency matters.

B. Blueprint 2040: Regional Transportation Plan (2017)

Increased focus on system preservation, creating redundancy and resiliency across all modes and particularly in rural areas, strong support for tourism and recreation, and sensitivity to environmental concerns.

C. Lone Tree Corridor Study (2006)

The Lone Tree Corridor Study identifies and evaluates a potential gateway corridor to the central section of the City of Flagstaff in accordance with the City's Regional Land Use and Transportation Plan. This study focused on a north-south area generally located in the vicinity of the current Lone Tree Road from Butler Avenue to Pine Knoll Road. South of Pine Knoll the study explores an alignment running south and east to accommodate a future I-40 traffic interchange. Consequently, the study does not include the PEL Study Area. The intent of the Lone Tree Corridor Study is to plan for entry to downtown Flagstaff that is unique in character and will provide enhanced regional mobility, improve the community and local circulation, and minimize side friction between adjacent land uses and the corridor.

D. Lone Tree Corridor Specific Plan (2008)

The Lone Tree Corridor Specific Plan describes the intended ultimate improvements to the Lone Tree Road. The limits of the Lone Tree Corridor Specific Plan extend from the southern reaches of the proposed ADOT right-of-way south of I-40 north to E. Route 66. Per the Regional Plan, it includes an interchange with I-40 and a railroad overpass connection between Butler Avenue and E. Route 66. The interchange is located approximately ½ mile east of the existing Lone Tree Road I-40 underpass, requiring a realignment of Lone Tree Road to the east.

The Lone Tree Corridor Specific Plan recommends a four-lane, median-divided, arterial roadway with signals or other types of improvements at the following locations:

- J.W. Powell Blvd
- Existing and new Lone Tree Road
- Pine Knoll Road
- Woodland Drive
- Franklin Drive
- Butler Avenue
- E Route 66

The Lone Tree Corridor Study also envisions multi-modal initiatives of the community, including expansion of the Flagstaff Urban Trail System (FUTS) and accommodation for transit stops.

The discussion below presents the current conditions at South Lone Tree Road emphasizing the existing transportation network and transit facilities followed by the existing environmental regulatory resource base conditions within the PEL Study Area. The PEL Study Area of Lone Tree Road is located from the intersection of Zuni Drive to J.W. Powell Boulevard and is approximately 900 feet long (Figure 1). A study buffer of 600 feet (300 feet on either side of the Lone Tree Road centerline; approximately 11.6 acres) defines the study corridor and has been evaluated for environmental resources. The resources evaluated are in the order they appear on the [PEL Checklist for Environmental Planners – Part 3](#).

Current Conditions at South Lone Tree Road

A. Existing Transportation Network

Lone Tree Road is an undivided, 2-lane minor arterial road connecting communities and neighborhoods south of I-40 to those north of I-40 and into Southside and Downtown Flagstaff. Current traffic levels on

Lone Tree Road is approximately 9,000 vehicles per day (VPD) north of Zuni Drive. Lone Tree Road terminates at its south end at J.W. Powell Boulevard, another 2-lane arterial that has a center median and is carrying approximately 4,000 VPD west of Lone Tree Road. Zuni Drive is a minor collector intersecting Lone Tree Road near the northern terminus of the PEL Study Area with a daily traffic volume of 5,000 VPD. The east leg of the Zuni Drive intersection is the driveway to the Coconino Community College Lone Tree campus (Connell Drive).

Paved segments of the Flagstaff Urban Trail System (FUTS) are found on the east side of Lone Tree Road and the south side of J.W. Powell Boulevard. A pedestrian undercrossing of J.W. Powell Boulevard connects the two. An unpaved segment of the Flagstaff Urban Trail System is located on the north side of Zuni Drive and follows the Bow and Arrow Wash westward. In addition to the FUTS that serves as a shared-use trail system, there are nominal shoulders along Lone Tree Drive and J.W. Powell Boulevard that do not meet current standards for bicycle lanes. No dedicated bike lanes are present.

Lone Tree Road and Zuni Drive Intersection Study (2013)

According to ADOT's Traffic Records Section, there were 36 vehicular crashes at the intersection of Lone Tree Road and Zuni Drive between 2007 and 2012. Of the 36 crashes, 13 reported non-life-threatening injuries and no fatalities. The high percentage of single-vehicle crashes indicates a roadway geometric issue at or near the intersection.

Table 1 demonstrates the last 5 years (2017 – 2021) of crash data from the Arizona Crash Information System (ACIS) for both Zuni Dr. and J.W. Powell Blvd. intersections. The total crashes for Zuni are far less compared to the 2007-2012 data analyzed above. It should be noted that crash statistics are highly variable over time. While in comparison total crashes have reduced this does not mean that reduction will continue, especially as demand on the roadway increases due to adjacent developments and growth.

Table 1: 2017-2021 Intersection Crash Stats

	Zuni Intersection	JWP Intersection
Total crashes	10	2
Total traffic units - vehicles, pedestrians, bicyclists involved	19	2
Total Fatalities	0	0
Total injuries – Nonlife threatening	8	5
Total non-motorists involved in a crash	0	0

An Initial Project Assessment Report, Lone Tree Road and Zuni Intersection Improvements (ADOT, 2013) was completed indicating this intersection is currently operating at an inadequate level of service and is predicted to continue operating poorly in 2015 and 2025 if no improvements are made. Based on the turn lane analysis, the existing southbound and eastbound left turn auxiliary lanes do not provide adequate storage using existing traffic counts as well as 2015 and 2025 traffic volume projections. The southbound and eastbound left turn lanes are predicted to require respectively 275 feet and 175 feet of storage as an un-signalized intersection and 400 feet and 275 feet of vehicle storage space as a signalized intersection during the peak hours of 2025.

The study goes on to recommend a multi-lane roundabout over a signalized intersection to adequately meet ADOT Level of Service criteria beyond the 2025 traffic projection window at the intersection of Zuni Drive and Lone Tree Road. A study of the Lone Tree Road and J.W. Powell intersection has not been completed.

B. Existing Transit Services and Facilities

Mountain Line transit system in the PEL Study Area currently consists of two routes, Routes 4 and 14, which run in opposite directions on Lone Tree Road and Zuni Drive at 20-minute, and 30-minute frequencies, respectively. There is no service south of Zuni Drive or on J.W. Powell Boulevard.

The PEL Study Area is relatively undeveloped except for the south end of Lone Tree Road near the J.W. Powell intersection. Development near this intersection consists of a storage and maintenance yard, the Pine Canyon community, and two golf course developments associated with Pine Canyon. At the Lone Tree Road and Zuni Drive intersection is the Connell Drive entrance to Coconino Community College that turns east then north to the campus. To the west of Zuni Drive intersection is the Pinnacle Pine Townhome complex and then Zuni continues into the Bow and Arrow Acres neighborhood.

Resource Base Conditions

There are three questions to be addressed in the PEL Checklist for Environmental Planners – Part 3 regarding the status of each resource in the PEL Study Area with a yes, no, unknown, or not applicable answer. The three questions are:

1. Is the resource or issue present in the area?
2. Are impacts to the resource or issue involvement possible?
3. Are the impacts mitigatable?

Additional discussion as to the level and method of review, previous studies, or records, and if additional supplementation during NEPA may be required.

Natural Environment

A. Sensitive Biological Resources

The U.S. Fish and Wildlife Service (USFWS) IPaC tool and the Arizona Game and Fish Department (AGFD) Environmental On-line Tool (USFWS, 2022; AGFD, 2022; Appendix A) were accessed regarding the presence of federally protected species or species for which there is an agreement in place such as the Bald Eagle Management Plan with the State of Arizona on public lands. All the species in Table 2 are known to have populations in northern Arizona. The California Condor has been reintroduced in Arizona as an experimental

population near the Vermillion Cliffs and high-quality habitat for this species exists in this area which is why this species is listed twice. Each species has well-documented habitat requirements and locational information is available on public lands. Mitigation protocols are in place, usually in the form of buffers or timing restrictions. Known Mexican Spotted Owl (MSO) Protected Area Centers (PACs) are just over 2 miles to the southeast of the PEL Study Area on Coconino National Forest lands and individuals may occasionally be seen foraging in the region. The area to the northeast contains high-quality habitat for MSO as well as potential winter roosting areas for Bald Eagles, who likewise may be seen foraging in the vicinity of the PEL Study Area on a transient basis. Yellow-billed Cuckoos require riparian habitat and Narrow-headed Garter snakes require riparian and aquatic habitat, neither of which occur near the PEL Study Area or in the vicinity. The Monarch Butterfly is a candidate species, and its habitat is quite broad, if observed it should be avoided if possible. No effects on federally protected listed species or Critical Habitat is anticipated. No mitigation is required for USFWS listed threatened, endangered, or candidate species.

Table 2: Species identified by the USFWS and AZGFD as potentially occurring in the project region.

Species	USFWS Federal	AZGFD State	No Suitable Habitat	Suitable Habitat Present/Occupied
Mexican spotted owl, <i>Strix occidentalis lucida</i>	Threatened		X	--
Bald Eagle <i>Haliaeetus leucocephalus</i> Wintering population	Bald and Golden Eagle Protection Act	Bald Eagle Management Agreement	X	--
California Condor, <i>Gymnogyps californianus</i>	Endangered		X	--
California Condor, <i>Gymnogyps californianus</i>	Experimental Population, Non-Essential		X	--
Yellow-billed Cuckoo, <i>Coccyzus americanus</i>	Threatened		X	--
Narrow-headed gartersnake, <i>Thamnophis rufipunctatus</i>	Threatened		X	--
Monarch Butterfly, <i>Danaus plexippus</i>	Candidate		X	--

B. Migratory Bird Treaty Act (MBTA)

Most bird nests are protected under the Migratory Bird Treaty Act (MBTA). This law says: “No person may take (kill), possess, import, export, transport, sell, purchase, barter, or offer for sale, any migratory bird, or the parts, nests, or eggs of such bird except as may be permitted under the terms of a valid permit...” Under the MBTA it is illegal to destroy a nest that has eggs or chicks in it or if there are young birds that are still dependent on the nest for survival. It is also illegal for anyone to keep a nest they take out of a tree or find on the ground unless they have a permit to do so issued by the U.S. Fish and Wildlife Service (USFWS, 2022a). The MBTA has undergone much litigation surrounding the definition and enforcement of the MBTA in recent years however the USFWS promotes Best Practices under the MBTA for the protection of migratory birds for transportation construction projects (USFWS, 2022b).

Mitigation:

- *Avoiding construction and vegetation removal during the nesting season, typically early April to July 15.*
- *If construction cannot be avoided, then surveys for nesting migratory birds should be conducted and if located then establishment of a buffer should be put in place. There is no clear direction on the size of the buffers, however, buffers are typically a 90-foot perimeter. This is especially important for vegetation removal.*
- *During construction, noise attenuation barriers can be put in place to minimize disturbance to nesting migratory birds with a buffer of approximately 50 feet.*

C. Wildlife Corridors

There are numerous wildlife corridors in and around Flagstaff and the entire state (ADOT, 2022; Appendix B). Bow and Arrow Wash that bisects the PEL Study Area is such a corridor. It provides access to the northeast, east, and southwest of Flagstaff along with numerous other such corridors in Flagstaff and on public lands surrounding the city. The Bow and Arrow corridor is blocked to some degree by development to the south and to the west of the PEL Study Area. However, there are numerous other corridors to the east for wildlife to circumnavigate around this development as necessary. The corridor is one in a network used by north-south migrating ungulates in the region. The Lone Tree planned upgrades will not affect the continued use of the corridor from its present use. Traffic calming techniques that may be planned in the PEL Study Area, may limit the incidents of vehicle–wildlife collisions. No mitigation is required.

D. Invasive Species

Invasive weed species have been observed within the PEL Study Area. Invasives such as knapweed species, Dalmatian toadflax, and Scotch thistle, among others are known to occur within and outside of the PEL Study Area east and west of the PEL Study Area within Bow and Arrow Wash. Some herbicide treatments for invasive species control within Bow and Arrow Wash were completed by the City of Flagstaff Water Services, Stormwater Section in 2021 that overlapped portions of the PEL Study Area.

Mitigation:

General Noxious Weed Best Management Practices will be followed including ensuring construction equipment is free of soil, weeds, vegetative matter, or debris that could harbor seeds prior to entering the project area; reseed disturbed areas with certified weed-free native seeds; and construction equipment and crews would not deviate outside of project footprint.

E. Wetland Areas

The National Wetlands Database was accessed, and no wetlands occur in the PEL Study Area (USFWS, 2022c; Appendix C). The nearest designated wetland occurs in the Rio de Flag, approximately 1.4 miles to the northeast. No mitigation is required.

F. Riparian Areas

Riparian zones or areas are defined as lands that occur along the edges of rivers, streams, lakes, and other water bodies. Examples include streambanks, riverbanks, and floodplains. They differ from the surrounding uplands because their soils and vegetation are shaped by the presence of water (National Park Service, 2022). There are no riparian areas in the PEL Study Area, and no mitigation is required.

G. 100-Year Floodplain

Floodplain Management (Executive Order 11988) under the Clean Water Act, Section 404 is to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains.

The Bow and Arrow Wash portion of the PEL Study area at the Zuni Drive and Lone Tree Road intersection is within a 100-year Floodplain (1% chance of annual flood hazard; Coconino County 2022; Appendix D). The central portion of the Bow and Arrow Wash within the 100-year Floodplain is a floodway, which is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increase in flood heights. A small portion near the intersection is within the 500-year Floodplain (0.2% chance of annual flood hazard).

Based on existing information (ADOT 2013), there does not appear to be any detention or retention of onsite or offsite storm flows that impact the project limit. All runoff is routed to Bow and Arrow Wash, which flows from west to east. There do not appear to be existing measures in place to prevent or route offsite flows away from the intersection. Both onsite and offsite flows are combined at various locations within the project limits.

There are existing catch basins approximately 100 feet south of the Lone Tree and Zuni Drive intersection on both sides of Lone Tree Road. These catch basins are connected to an existing storm drain system that receives storm flows from south of the project and discharges into Bow and Arrow Wash. Additionally, there are protruding storm drainpipe ends located at the southwest and southeast corners of the intersection that connects to this system and discharge into the wash to the north.

The intersection of Lone Tree Road and Zuni Drive is generally the low point of the project limits. Storm flows are routed to either the edge of pavement (and into swales) or into the storm drain system, which all discharge into Bow and Arrow Wash and flow north.

Mitigation:

A Floodplain Management Plan will be required to mitigate any impacts to floodplains in the PEL Study Area.

H. Clean Water Act Sections 404/401 Waters of the United States (WOTUS)

A WOTUS was completed for the PEL Study Area for drainage improvements at the Zuni Intersection in 2018 as they relate to the Bow and Arrow wash. A Nationwide Permit (NWP) 3 was issued by the U.S. Army Corps of Engineers (USACE) to the City of Flagstaff. Therese Carpenter, Project Manager, Regulatory Division, Arizona Branch, Los Angeles District, USACE was contacted for consultation regarding requirements, and/or past permit information that may be relevant to Section 404/401 and potential permitting requirements for the PEL Study

Area. A Freedom of Information Act request will have to be submitted to the USACE to retrieve this information unless it can be produced by the City of Flagstaff.

As part of the permit program under Section 404/401, the USACE, in addition to individual permits, has Nationwide Permits (NWP) available for certain circumstances such as transportation corridors which will allow for permitting to be completed timely if conditions the NWP are met. This project would likely fall under NWP 14, Linear Transportation Projects. Consultation with Therese Carpenter and NWP 14 requirements are in Appendix E.

Mitigation:

USACE would need to be consulted to receive authorization under NWP 14 by providing required documentation of potential impacts to WOTUS and/or developing any additional mitigation as may be required.

I. Prime or Unique Farmland

The Natural Resources Conservation Service (NRCS) Soil Data Access for Prime and other important farmlands was accessed for the Oak Creek-San Francisco Peaks Area, part of Coconino County, Arizona, and no Prime or Unique Farmland occurs in the PEL Study Area (NRCS, 2022). The PEL Study Area is in compliance with the Farmland Protection Policy Act (FPPA) of 1981. The FPPA discourages Federal activities that would convert farmland to nonagricultural purposes. Prime and important farmland includes all land that is defined as prime, unique, or farmlands of statewide or local importance. No mitigation is required.

J. Farmland of Statewide or Local Importance

NRCS Soil Data Access for Prime and other important farmlands was accessed for the Oak Creek-San Francisco Peaks Area, part of Coconino County, Arizona, and no Farmland of State or Local Importance occurs in the PEL Study Area (NRCS, 2022). The PEL Study Area is in compliance with the Farmland Protection Policy Act (FPPA) of 1981. The FPPA discourages Federal activities that would convert farmland to nonagricultural purposes. Prime and important farmland includes all land that is defined as prime, unique, or farmlands of statewide or local importance. No mitigation is required.

K. Sole Source Aquifers

The Environmental Protection Agency (EPA) online tool was accessed for the location of sole source aquifers in or near the PEL Study Area. There are no sole source aquifers in the PEL Study Area or region (EPA, 2022; Appendix F). No mitigation is required.

L. Wild and Scenic Rivers

There are no Wild and Scenic Rivers in the PEL Study Area (National Wild and Scenic Rivers System, 2022; Appendix G). No mitigation is required.

M. Visual Resources

Visual resource is a collective term that describes the natural landforms, vegetation, water features, and human modifications that give the landscape within a specific area its visual aesthetic quality. A "visual impact" describes the change in visual resources brought about by a project and the public's sensitivity to that change

(ADOT, 2022a). Scenic resources of an area are typically ranked as high, moderate, or low as are the impacts on scenic resources from a proposed project. Due to some existing development to the north, south, and west of the PEL Study Area, these viewsheds would likely be considered moderate to low as development is not dense and has open undeveloped areas interspersed within the area. The viewshed to the east would be considered of moderate to high scenic value as the area is not developed and remains in a relatively natural state as the view continues into the Bow and Arrow Wash FUTS trail area. The impacts on visual quality from planned upgrades to Lone Tree Road and associated intersections within the PEL Study Area would likely be considered low. The footprint of the existing Lone Tree Road and intersections at Zuni Drive and J.W. Powell Boulevard will be expanded but will remain in the same visual plane as the existing Lone Tree Road and associated intersections. The elements added will result in minimal to no adverse effects on the visual integrity of the area. No mitigation is required.

N. Designated Scenic Road/Byway

There are no designated Scenic Roads/Byways in the PEL Study Area (ADOT, 2022b; Appendix H). No mitigation is required.

O. Archaeological Resources and Historic Resources

A cursory review of the online Arizona cultural resources database (AZSITE) and other sources indicates that the current project area has been partially surveyed by two previous investigations. At least one known archaeological site is located in the vicinity of the PEL Study Area. One small segment of the PEL Study Area corridor has not been previously surveyed. An EnviroSystems' permitted archaeologist completed a cultural resource survey of this PEL corridor segment and no archaeological or historic resources were present (Appendix J). No known cultural resources are located within the PEL Study Area.

MetroPlan utilized Arizona State Historic Preservation Office (SHPO) online toolkit to conduct informal tribal consultation regarding the PEL Study Area (SHPO, 2022). A letter dated September 26, 2022, was sent to Tribes claiming affinity to the study area and requesting a consultation. To date, no correspondence has been received from any Tribe voicing concerns.

Mitigation:

Formal Tribal Consultation may be required if the project receives state or federal funding.

P. Section 4(f) Wildlife and/or Waterfowl, Section 4(f) Historic Site, Section 4(f) Recreational Site, Section 4(f) Park

According to Title 23 Code of Federal Regulations (CFR) 774.17, a property afforded protection under Section 4(f) is defined as “publicly owned land of a park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of a historic site of national, state, or local significance.”

Section 4(f) requirements stipulate that the federal agencies may not approve the use of Section 4(f) property unless there is no feasible and prudent alternative to the use of that land, and the proposed action includes all possible planning to minimize harm to the property resulting from such use, OR it is determined that the use of the property, including any measures to minimize harm committed by the applicant, will have a *de minimis* impact on the property.

The majority of the PEL Study Area occurs on privately held lands and does not contain a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land or historic site of national, state, or local significance.

A FUTS trailhead, which is under Section 4(f) jurisdiction, and associated parking area at the northeast corner of Lone Tree Road and J.W. Powell Boulevard is owned by the City of Flagstaff and may be impacted by the Lone Tree Road Expansion and Upgrades.

Mitigation:

The City of Flagstaff owns adequate land to move and reconfigure the FUTS trailhead and parking area to mitigate any potential effects relating to the intersection expansion or upgrades to Section 4(f) property.

De Minimis Impact involves the use of Section 4(f) property that is generally minor in nature. A de minimis impact is one that, after taking into account avoidance, minimization, mitigation and enhancement measures, results in no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). A determination of de minimis impact on parks, recreation areas, may be made when all three criteria are satisfied:

- 1. The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);*
- 2. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource: and*
- 3. The official(s) with jurisdiction over the property are informed of U.S. DOT's intent to make the de minimis impact determination based on their written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).*

Given the various plans and studies within the PEL Study Area, which demonstrate clear intentions of retaining and enhancing access to the FUTS, a de minimis determination could be made.

Q. Section 6(f) Resource

Section 6(f) of the Land and Water Conservation Fund Act is included in the Land and Water Conservation Fund Act (LWCF) of 1965. The LWCF is a federal program that was established by Congress in 1964 to provide funds and matching grants to federal, state, and local governments for the acquisition of land and water, and easements on land and water, for the benefit of all recreating Americans. The PEL Study Area is not located in or near Section 6(f) acquired lands under the LWCF. No mitigation is required.

Human Environment

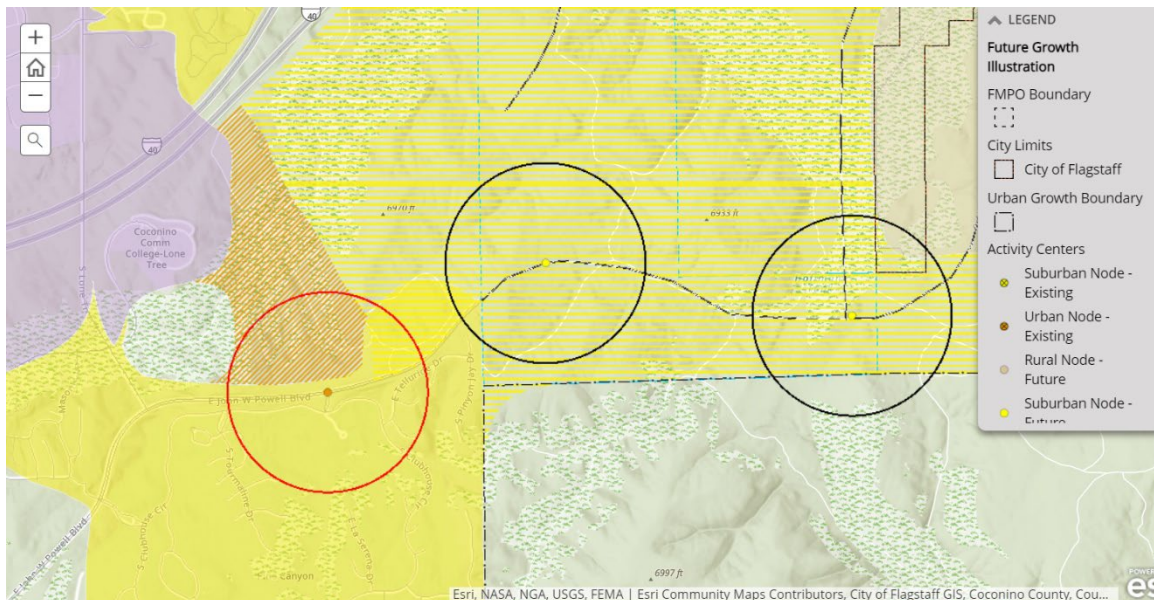
A. Existing Development

Existing development in the vicinity of the PEL Study Area includes Pinnacle Canyon Community and Golf Course, C Village, Pinnacle Pines Townhomes and Village, Coconino Community College, and Bow and Arrow Acres approximately one-half mile to the west. Lone Tree Road, Zuni Drive, Connell Drive, and J.W. Powell provide access to these developments as the intersections lie in the PEL Study Area.

B. Planned Development

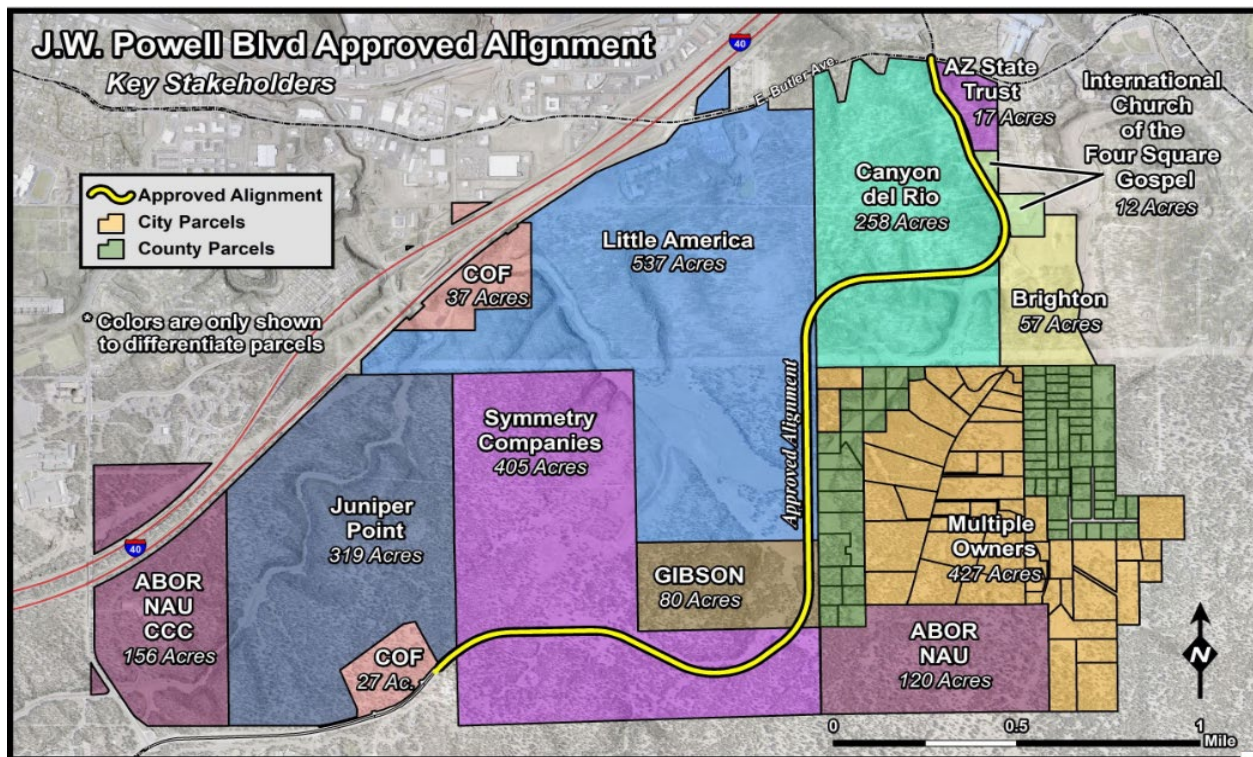
As part of the [Flagstaff Regional Plan 2030](#), S. Lone Tree within the PEL study area was identified as an existing and future “suburban” area to the east. The plan further describes the area directly east of J.W. Powell and S. Lone Tree as a “future urban activity center”. Figure 5 below demonstrates the Future Growth Illustration defines the geographic locations of area and place types. It shows the spatial relationship of existing and future development (<https://gis.flagstaffaz.gov/portal/apps/MapSeries/index.html?appid=6e96380356e648949c4355e64bdf6b6e>).

Figure 4. Spatial Relationship of Existing and Future Development



Since the Regional Plan was updated in 2018, several development projects have been identified within proximity to the PEL study area. Figure 6 demonstrates the future development to the east of the PEL Study Area (www.flagstaff.az.gov/4511/JW-Powell-Specific-Plan).

Figure 5. Future Development East of the PEL Study Area



Phase I of the III Phase Juniper Point is a planned development that is currently breaking ground adjacent to the PEL Study Area adding 38 new single-family homes. Towns on Lone Tree, a new apartment development, has been permitted to break ground at the northwest corner of J.W. Powell and S. Lone Tree adding 210 new dwelling units.

C. Displacements

No displacements of residents will result from the improvements proposed in the PEL Study Area. No mitigation is required.

D. Access Restrictions

Temporary access restrictions and traffic interruption may occur during construction in the PEL Study Area.

Mitigation:

A Traffic Plan will be required to mitigate any disruptions to access and traffic flow during construction in the PEL Study Area.

E. Neighborhood Continuity

No impacts to neighborhood continuity will result from the improvements proposed in the PEL Study Area. No mitigation is required.

F. Community Cohesion

No impacts to Community Cohesion will result from the improvements proposed in the PEL Study Area. No mitigation is required.

G. Title IV/Environmental Justice

Title VI of the Civil Rights Act of 1964 (Title VI) and related statutes ensure that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability.

The 1994 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs that programs, policies, and activities identify and address, as appropriate, disproportionately high and adverse human health and environmental effects on minority and low-income populations.

No impacts to Title IV/Environmental Justice individuals or populations will result from the improvements proposed in the PEL Study Area. A beneficial effect will be the inclusion of a buffered bike lane in Lone Tree Upgrades within the PEL Study Area. No mitigation is required.

Physical Environment

A. Utilities

Utilities occurring in the PEL Study Area are listed below (Table 3).

Table 3. Utilities occurring in the PEL Study Area.

Company	Utility
City of Flagstaff	Water/Sanitary/Storm/Traffic
Arizona Public Service	Electric
Century Link	Communications
NPG Cable	Cable TV/Communications
Unisource Energy Gas	High-Pressure Gas

Mitigation

Coordination with utility companies and the City of Flagstaff will be required prior to project implementation.

B. Hazardous Waste

No hazardous waste occurs in the PEL Study Area or within a 1-mile radius (EDR, 2022; Appendix I). No mitigation is required.

C. Sensitive Noise Receivers

There are three sensitive noise receivers partially within the PEL Study Area: Towns on Lone Tree (vacant land with exception of occasional storage of equipment), FUTS, the TLC PC golf course. Developments occurring

between approximately 200 and 500 feet outside the PEL Study Area are Pinnacle Pine Homes, and PC Village. The Coconino Community College occurs approximately 750 feet outside of the PEL Study Area.

Mitigation:

Construction activities would be restricted to normal business hours. Holiday and weekend work will be scheduled in a way to reduce noise impacts on residents.

D. Air Quality

The PEL Study Area does not occur in a non-attainment area or Class I airshed (ADEQ, 2022). Construction activities will temporarily reduce air quality in the immediate vicinity as a result of fugitive dust.

Mitigation:

Impacts to air quality will be mitigated through regular watering of construction areas.

A summary of mitigation required by Natural, Human and Physical Environments is presented in Table 4.

Table 4: Summary of mitigation for Natural, Human and Physical Environments

Resource	Mitigation
Natural Environment	
Migratory Bird Treaty Act	<p>Avoiding construction and vegetation removal during the nesting season, typically early April to July 15.</p> <p>If construction cannot be avoided, then surveys for nesting migratory birds should be conducted and if located then the establishment of a buffer should be put in place. There is no clear direction on the size of the buffers, however, buffers are typically a 90-foot perimeter. This is especially important for vegetation removal.</p> <p>During construction, noise attenuation barriers can be put in place to minimize disturbance to nesting migratory birds with a buffer of approximately 50 feet.</p>
Invasive Species	<p>General Noxious Weed Best Management Practices will be followed including ensuring construction equipment is free of soil, weeds, vegetative matter, or debris that could harbor seeds prior to entering the project area; reseed disturbed areas with certified weed-free native seeds; and construction equipment and crews would not deviate outside of project footprint.</p>
100-YR Floodplain	<p>A Floodplain Management Plan will be required to mitigate any impacts to floodplains in the PEL Study Area.</p>

Resource	Mitigation
Clean Water Act Sections 404/401 Waters of the United States (WOTUS)	<p>USACE would need to be consulted to receive authorization under NWP 14 by providing required documentation of potential impacts to WOTUS and/or developing any additional or compensatory mitigation as may be required in support of Individual Permit, if applicable.</p> <p>If mitigation is required, the City could consider providing enhancements to a nearby wetlands area. These enhancements would offset mitigation strategies related to the Zuni Intersection improvements or general impacts to Bow and Arrow wash.</p>
Archaeological Resources and Historic Resources	Formal Tribal Consultation may be required if the project receives state or federal funding. Formal archaeological clearance report documenting no prehistoric or historic resources present must be prepared and submitted to City of Flagstaff and SHPO to receive clearance for federal and/or state undertaking.
Section 4(f) Wildlife and/or Waterfowl, Section 4(f) Historic Site, Section 4(f) Recreational Site, Section 4(f) Park	<i>De Minimis</i> Impact on Parks, Recreation Areas, and Refuges apply when all three criteria for a determination of <i>de minimis</i> impact have been met. (23 CFR § 771.117 - FHWA categorical exclusions).
Human Environment	
Access Restrictions	A Traffic Plan will be required to mitigate any disruptions to access and traffic flow during construction in the PEL Study Area.
Physical Environment	
Utilities	Coordination with utility companies and the City of Flagstaff will be required prior to project implementation.
Sensitive Noise Receivers	Construction activities would be restricted to normal business hours. Holiday and weekend work will be scheduled in a way to reduce noise impacts on residents.
Air Quality	Impacts to air quality will be mitigated through regular watering of construction areas.

IV. CORRIDOR FUTURE CONDITIONS

Introduction

The PEL Study Area consists of Lone Tree Road between and including the intersections at Zuni Drive and J.W. Powell Boulevard which have been identified as needing improvements to meet future vehicle capacity, demand, and growth related to the future Juniper Point subdivision, Towns on Lone Tree, and planned growth in general.

The Lone Tree Corridor Study (2006) intent was to provide guidance on a new gateway to the community, enhance regional mobility, and improve the community and local circulation. The study focused on a new traffic interchange (TI) with I-40 that would realign South Lone Tree Road towards the east to connect with this new traffic interchange (Figure 7).

Figure 6. PEL Study Area in Relation to Future I-40 TI



The results from the Lone Tree Corridor Study (2006) were adopted by Lone Tree Corridor Specific Plan (2008). The Specific Plan focused on the proposed Traffic Interchange and Lone Tree Road to the north of I-40. This Specific Plan identified several projects that are currently funded through Prop. 419 funds such as the Lone Tree Overpass to connect to Route 66 and Lone Tree Widening (from Butler Ave. to Pine Knoll).

However, the I-40 Traffic Interchange is an ongoing planning process. This project has been identified for over 30 years and will require substantial federal funding to complete the traffic interchange is not being constructed prior to the future housing developments near South Lone Tree Road. The implications of the new housing developments will impact the Lone Tree Corridor. South Lone Tree and J.W. Powell will be the primary route to connect to the core of the city until the new alignment and traffic interchange are built, the existing alignment will carry the majority of traffic.

Future conditions for the PEL Study Area consist of Lone Tree Road as a divided, four-lane minor arterial. The MetroPlan regional transportation model for 2045 projects 17,000 VPD south of Zuni Drive and 27,000 VPD north of Zuni Drive. J.W. Powell Boulevard is projected to carry 16,700 VPD west of Lone Tree Road and 11,200 VPD east of Lone Tree Road. Zuni Drive is projected to carry 10,500 VPD. Development proposals for the J.W. Powell corridor are coming in lower than planned *and modeled* so future volumes may differ. Traffic vehicle per day (VPD) projections from MetroPlan regional transportation model 2045 for PEL Study Area are summarized in Table 5.

Table 5: Summary of vehicle per day (VPD) projections for PEL Study Area

South of Zuni Dr.	North of Zuni Dr.	JWP west of Lone Tree	JWP east of Lone Tree	Zuni Dr.
17,500 VPD	27,000 VPD	16,700 VPD	11,200 VPD	10,500 VPD

Planned Developments and Projects

The most prominent developments to the PEL Study Area are the Juniper Point and Towns on Lone Tree developments located immediately adjacent to the Lone Tree Corridor and contribute substantial effects to the VPD capacity as previously discussed, and multimodal requirements in the Lone Tree Specific Corridor Plan.

Juniper Point is an approved master planned community, including both residential and commercial development. Phase I of III of this development has recently broken ground. In addition to Juniper Point (Phase I), Canyon de Rio (northeast of the PEL Study Area) has also broken ground at this integral section of roadway that will connect E. J.W. Powell to E. Butler Ave. via the new J.W. Powell Blvd. extension. Across the specific plan area, it is anticipated that 4,000 to 5,500 dwelling units are to be proposed and the carrying capacity of the area is roughly 7,500 based on the most intense development scenario.

Northern Arizona Healthcare (NAH) is relocating from its current location just north of downtown. The proposed Health and Wellness Village anchored by a state-of-the-art hospital and ambulatory care center is planned on land north of Fort Tuthill County Park in Flagstaff. The J.W. Powell east-west loop will provide access to the future NAH Health and Wellness Village.

Table 6 demonstrates the planned and funded transportation projects in relation to the PEL Study Area. These projects tie into and impact circulation and network connectivity through South Lone Tree Road and the greater community.

Table 6: Planned and funded transportation projects

Sponsor	Project Name	Location/Description	Schedule of Development
City of Flagstaff	Lone Tree Overpass	Butler to Route 66	Construction begins CY 23
City of Flagstaff	Lone Tree Widening	Butler to Sawmill	Construction begins CY 23
City of Flagstaff/Private Partnership	J.W. Powell – Fourth Street	Extension to Fourth St	Planning efforts are ongoing
City of Flagstaff	J.W. Powell (Airport)	Extension from Airport to Lake Mary Road	Design scheduled CY 28
City of Flagstaff	Butler Avenue Improvements	Arterial Roadway buildout from I – 40 to Sinagua Heights	Design CY 22 / 23

Mobility, Circulation, and Safety

A. South Lone Tree Road

South Lone Tree Road is expected to have on-street facilities such as separated bike lanes, sidewalks on either side with a landscape buffer, raised landscape median, and continued access to the FUTS.

B. Zuni Intersection

A 2021 illustrative design of South Lone Tree shows roundabouts at the Zuni and J.W. Powell intersections. The Zuni intersection was previously identified for Highway Safety Improvements Program (HSIP) Funds but did not receive the funding award. Roundabouts are a preferred safety countermeasure to reduce serious and fatal crashes.

C. J.W. Powell Boulevard Intersection

The intersection at Lone Tree and J.W. Powell is integral to the future extension of J.W. Powell to the east where it will meet Fourth Street to provide an arterial for future development. J.W. Powell will also be extended to the southwest to Interstate 17 and Pulliam Airport to serve a larger regional connectivity element by allowing an additional east-west loop, which bypasses the heavily congested Route 66/Milton thoroughfare. Once completed, the J.W. Powell east-west extension will result in greater capacity requirements on the Lone Tree Corridor as a direct route to Route 66 and Downtown Flagstaff.

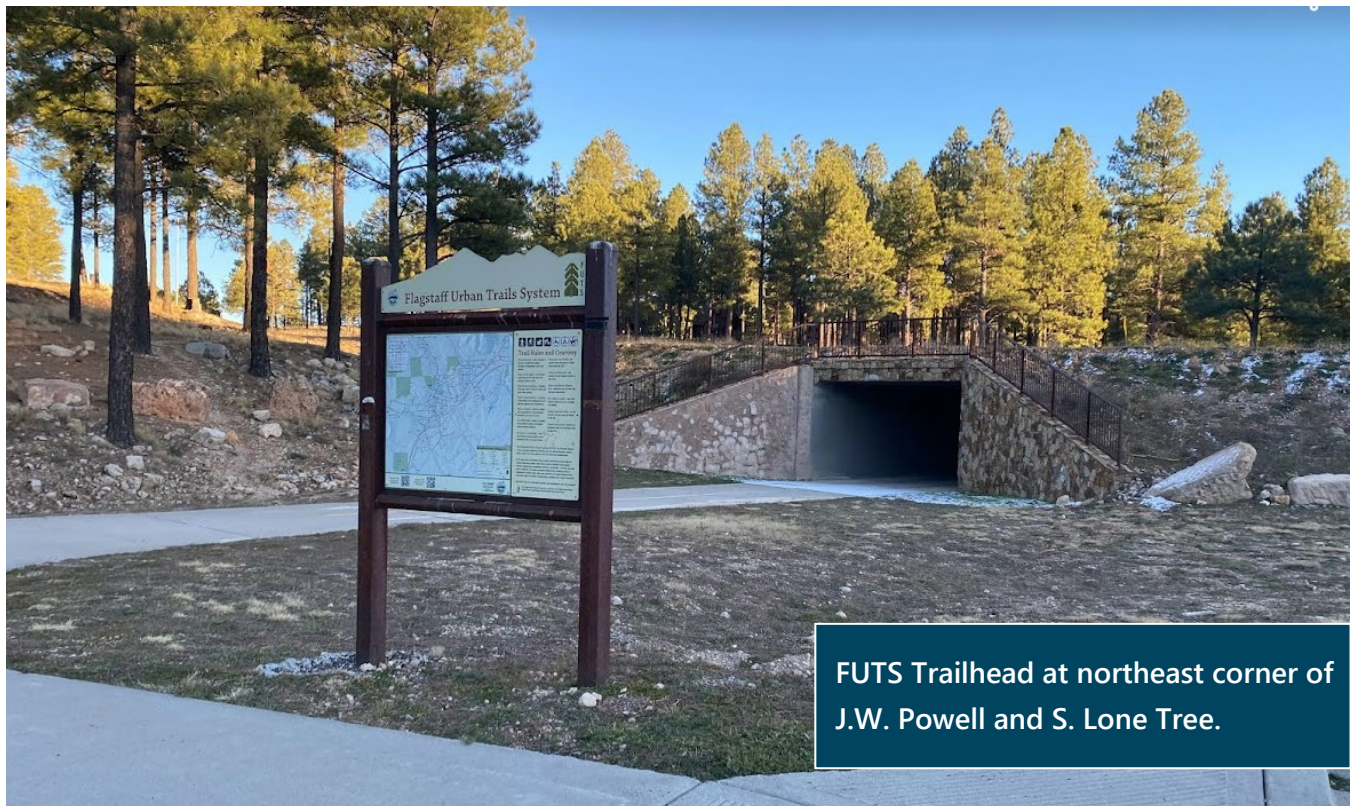
D. Public Transit

Additional transit service and funding to expand Mountain Line transit service south of Zuni Drive is not currently available or projected. Mountain Line will complete *Flagstaff in Motion*, its 5-year transit plan update, in early Spring 2023. Flagstaff in Motion does identify a bus stop addition on Zuni to the west of the S. Lone Tree intersection to provide access to the neighborhoods in the developing area. Mountain Line may contemplate approaching voters in 2024 for additional transit funding.

E. Community

The expansion of this roadway is vital to connect the new communities and residents to services, goods, education opportunities, employment opportunities, and create greater accessibility and opportunities to goods and services and affordable housing to underserved, disadvantaged, and socioeconomically challenged communities located in east and west Flagstaff ([*Stride Forward Socioeconomic Report* by Burgess and Niple, 2022](#)).

Implementation of future planning efforts within the PEL Study Area will also meet the goals for the City of Flagstaff's Carbon Neutrality Plan and the Active Transportation Master Plan. The tensions between climate goals and other community priorities, such as roadway expansion, must be met with open dialogue, innovative thinking, and good faith that we can find creative solutions that help Flagstaff move forward with a vision for a healthier, more inclusive community. The goals of the Carbon Neutrality Plan and Active Transportation Master Plan will influence the roadway design by incorporating environmental considerations and improving access to walk and bicycle safely and comfortably. As presented in previous plans and studies, all facilities and upgrades along South Lone Tree Road is planned to be "complete streets" with sidewalks and/or FUTS on both sides of the street. It is generally expected that pedestrian facilities will be separated by a landscaped buffer or parkway.



V. CONCEPTUAL FOOTPRINT REVIEW AND ANALYSIS

This chapter presents conceptual designs and direction provided by the City of Flagstaff for the South Lone Tree Road expansion and improvements. This chapter is intended to provide further direction on the final roadway design with the intent to minimize the environmental constraints and mitigation as discussed in the [Current and Future Conditions Report](#) South Lone Tree Planning & Environmental Linkages (PEL) Study (*EnviroSystems, 2022*).

The South Lone Tree Road PEL Study Area is located from the intersection of Zuni Drive to J.W. Powell Boulevard and is approximately 900 feet long. A study buffer of 600 feet (300 feet on either side of the Lone Tree Road centerline; approximately 11.6 acres) defines the study corridor and was evaluated for environmental resources and mitigation.

The Current and Future Conditions Report (*EnviroSystems, 2022*) found no substantial environmental impacts or constraints in the entire 600 x 900-foot PEL Study Area. This section of roadway has an existing 100 feet of right-of-way (ROW). The following conceptual designs and sections for the Lone Tree Road corridor support an Urban Minor Arterial as described in the City of Flagstaff Engineering Design and Construction Standards (EDCS) and contain 4 travel lanes and a minimum right-of-way width of 102 feet (*Lone Tree Road Corridor Study, 2006*).

102 feet of ROW is currently needed to meet the “Urban Minor Arterial” roadway classification. The following analysis reviews concepts from 102 ft to 110 ft. wide.

Roadway improvements will also include utility relocation, drainage in and around Bow & Arrow Wash, and potential right-of-way acquisition for future expansion within the recommended ROWs.

Table 7 provides a comparison of the roadway and ROW needs per the concepts in this report. Roadway and ROW widths vary based on the buffer and median sizes illustrated. This table further captures the largest identified footprint per concept.

Table 7: Concept ROW Comparison

CONCEPT	ROADWAY WIDTH ¹	TOTAL ROW ²	SLOPE/DRAINAGE EASEMENT ³	TOTAL WIDTH POTENTIALLY IMPACTED ⁴
Lone Tree Road Corridor Study (2006)	72 ft	102 ft	10 ft (5' each side)	112 ft
Zuni to J.W. Powell roundabout and widening engineering detail (2021)	76 ft	110 ft	80 ft (40' each side)	190 ft
Zuni to J.W. Powell engineering detail w/buffered bike lane (2022)	82 ft	108 ft	80 ft (40' each side)	188 ft

¹ Includes on-roadway facilities – travel lanes, bike lanes, shared lanes/medians, and curb inlets.

² Total ROW includes on-roadway facilities plus, parkways/buffers, and sidewalks/FUTS.

³ Slope and Drainage easements are areas in excess of the ROW need.

⁴ Total width includes total ROW plus slope/drainage easements.

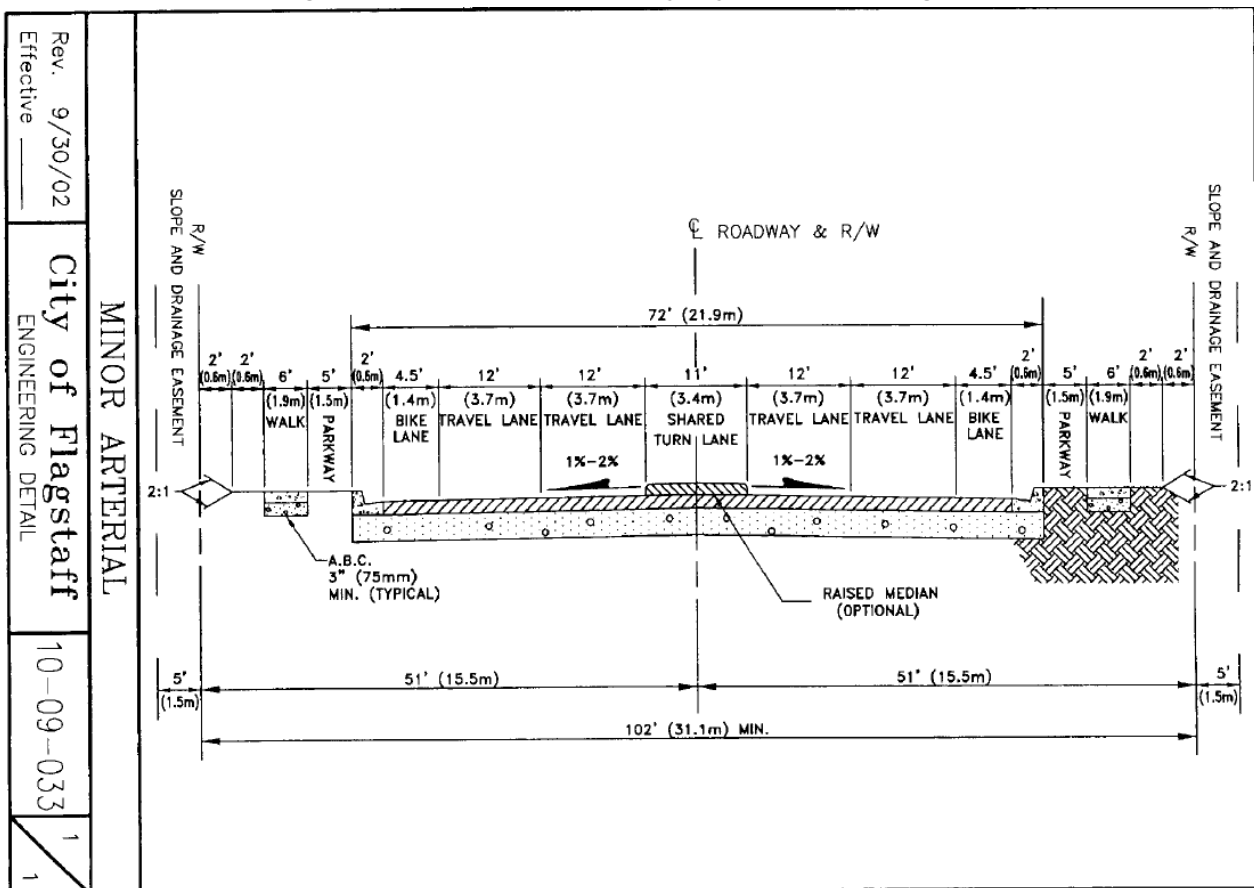
A. Concept 1: Lone Tree Road Corridor Study (2006)

The purpose of the Lone Tree Road Corridor Study is to identify and evaluate a potential gateway corridor to central Flagstaff in accordance with the City's Regional Land Use and Transportation Plan. This study focused on a north-south study area. The study reviewed 6 segments of the roadway. The southern segment from I-40 to J.W. Powell Boulevard received a Tier 2 evaluation.

The southern section from I-40 to J.W. Powell Blvd. contains four travel lanes (two in each direction); a raised median; on-street bicycle lanes; parkways on both sides; a sidewalk on one side; and a FUTS Trail on one side. Exceptions to the standard typical section occur in several locations where there are physical, access, or property restrictions. The new roadway would include drainage improvements with curb inlets and storm drains to convey stormwater to Bow and Arrow Wash.

Figure 8 demonstrates the typical section for the Lone Tree Road corridor as an urban minor arterial and contains 4 travel lanes with a maximum roadway width 72 feet or total width of 112 feet with ROW and easements.

Figure 7: Lone Tree Corridor Study - Typical Section (page 32)



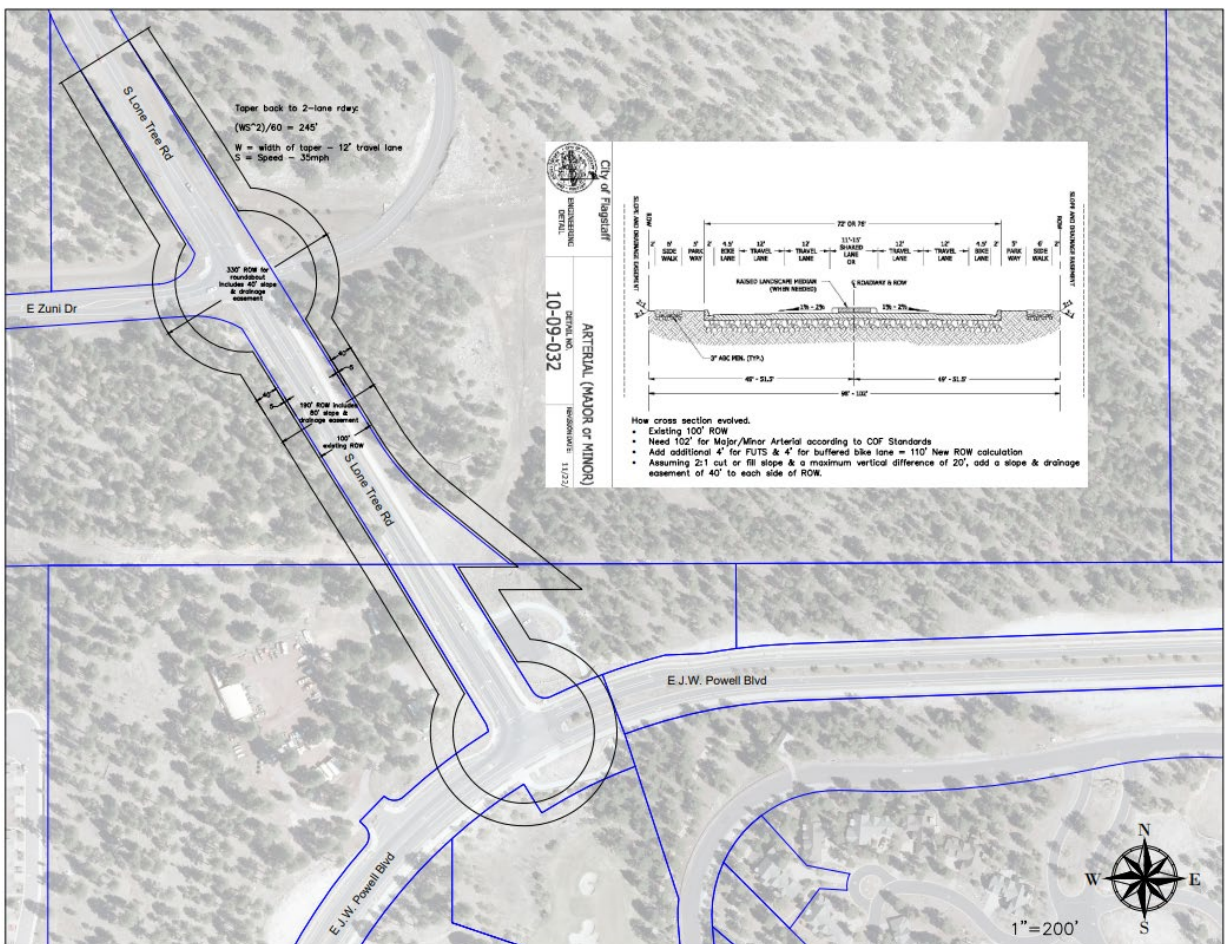
B. Concept 2: South Lone Tree Widening and Roundabouts (2021)

The City of Flagstaff provided a concept engineering detail of S. Lone Tree Rd. from Zuni Dr. to J.W. Powell Blvd. This concept includes many of the same features provided in the cross-section of the 2006 Lone Tree Road Corridor Report. In addition to the expansion of S. Lone Tree Rd. from 2 lanes to 4 lanes, an additional 4' for FUTS and 4' for sidewalks have been added to the new ROW calculation for a total roadway width of 110'. This concept further shows roundabouts to be added to the intersections of Zuni Dr. and J.W. Powell Blvd.

Roundabouts were identified as the preferred safety countermeasure as part of an Arizona Department of Transportation (ADOT) Initial Project Assessment Report for Lone Tree Road and Zuni Drive Intersection Improvements (2013). Currently, the intersections at both Zuni Dr. and J.W. Powell are un-signalized.

The engineering detail demonstrates 110 feet ROW is needed to accommodate the roadway expansion, and 250 feet ROW is needed at each intersection. ROW does not include drainage and slope easements. At this level of design, a 40-foot slope and drainage easement are reasonably larger. It is unlikely there will be a need for this much space. However, without final designs this width responds to potential impacted areas.

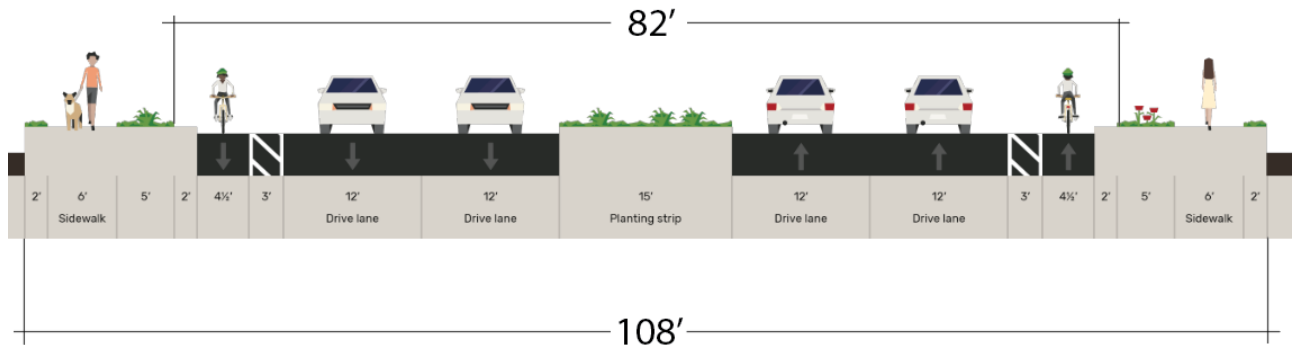
Figure 8: Engineering Detail of Concept 2



C. Concept 3: Modified “South Lone Tree Widening and Roundabouts”

Using Concept 2 with input provided by the City of Flagstaff, the below cross-section maintains all maximum widths identified in Figure 9, with the addition of a 3’ buffer for the bicycle lane on each side of the roadway. Increasing the width of the bicycle facilities to a total of 7.5’ wide. The image below shows the maximum buffer size of 3-foot which is the largest suggested buffer by the [National Association of City Transportation Officials](#) (NACTO). NACTO recommends a minimum of 18” buffer.

Figure 9: Modified cross-section with buffered bike lanes



Design Constraints and Mitigation Strategies

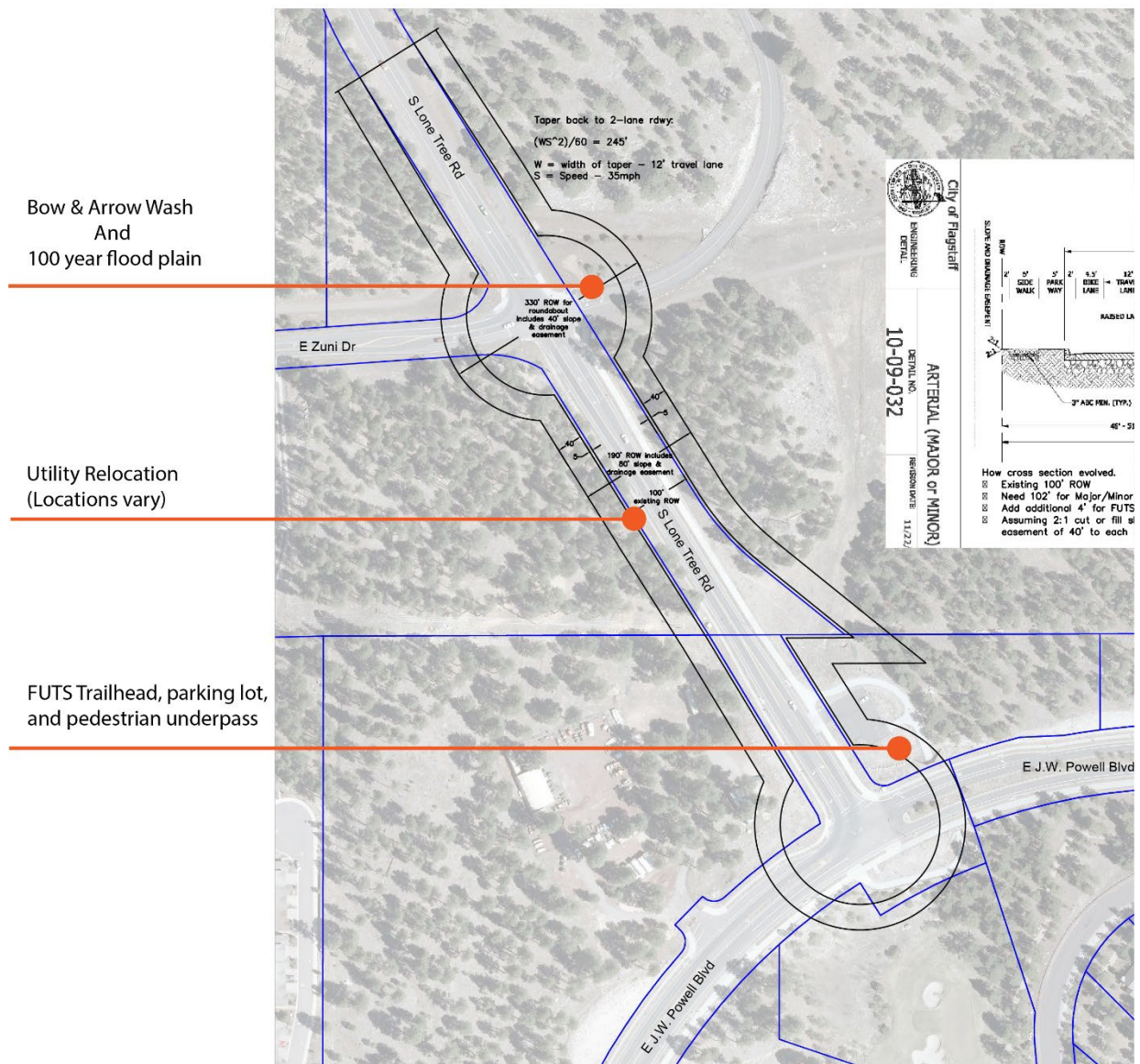
All three concepts can be implemented. The 600’ width study area evaluated far exceeds the maximum 110’ giving additional flexibility in the final design. There are no substantial mitigations needed that would halt the expansion of this roadway. The City of Flagstaff will need to continue to consider the design options and funding availability/impacts due to mitigation strategies.

In general, the design constraints in this segment include:

- Bow and Arrow Wash/Floodplain
- Rolling topography of the corridor
- ROW acquisition/impacts at the NAU property/CCC driveway and future Towns on Lone Tree development at the northwest corner of J.W. Powell and S. Lone Tree
- The proposed roundabout with J.W. Powell Boulevard would have substantial impacts on FUTS trailhead, parking lot, and pedestrian underpass. Maintaining access will be required as part of 4(f).

Figure 11 demonstrates the 3 areas of mitigation that will need further exploration from City staff to determine the time, effort, and funds needed to mitigate appropriately. Adjustments could be considered that lower project costs associated with the mitigation strategies. For example, considering signalized intersections over roundabouts to reduce impacts and costs associated with realigning the FUTS and moving the parking lot.

Figure 10: Primary Mitigation Concerns



It is assumed that in future planning and design of this roadway, current policies, and standards, such as in the Active Transportation Master Plan and the Carbon Neutrality Plan may have impacts or adjustments to both design and potential mitigation costs.

Table 8 provides an overview of the mitigation strategies needed during the planning, design, and construction phases to accommodate all concepts presented here. These strategies along with mitigation needs during the construction phase can be found in the [Current and Future Conditions Report](#).

Table 8: Mitigation Considerations for Planning & Design

Resource	Mitigation	Phase
100-YR Floodplain	A Floodplain Management Plan will be required to mitigate any impacts to floodplains in the PEL Study Area.	Planning and Design (Zuni Intersection only)
Clean Water Act Sections 404/401 Waters of the United States (WOTUS)	USACE would need to be consulted to receive authorization under NWP 14 by providing required documentation of potential impacts to WOTUS and/or developing any additional mitigation as may be required in support of Individual Permit, if applicable.	Planning and Design (Zuni Intersection only)
⁵ Archaeological Resources and Historic Resources	Formal Tribal Consultation may be required if the project receives state or federal funding. Formal archaeological clearance report documenting no prehistoric or historic resources present must be prepared and submitted to City of Flagstaff and SHPO to receive clearance for federal and/or state undertaking.	Planning
Section 4(f) Wildlife and/or Waterfowl, Section 4(f) Historic Site, Section 4(f) Recreational Site, Section 4(f) Park	The City of Flagstaff owns adequate land to move and reconfigure the FUTS trailhead and parking area to mitigate any potential effects relating to the intersection expansion or upgrades to Section 4(f) property.	Planning, Design and Construction (J.W. Powell Intersection)
Utilities	Coordination with utility companies and the City of Flagstaff will be required prior to project implementation. Minimally, relocation of main water lines and water valve adjustments, and relocation of main sewer lines have been determined.	Planning, Design, and Construction

⁵ As part of the PEL process, EnviroSystems and MetroPlan contacted tribal leaders regarding any potential historical or archaeological resources in the study area. None were defined. Further coordination and documentation may be required.



FUTS Trailhead Connection Under
J.W. Powell

I. PLANNING AND ENVIRONMENTAL LINKAGES (PEL) CHECKLIST AND QUESTIONNAIRE

This questionnaire is intended to act as a summary of the Planning process and ease the transition from planning to a National Environmental Policy Act (NEPA) analysis. This questionnaire guides planners through a transportation planning study to document information and decisions so they may be used to inform project development specialists in the NEPA process.

Questionnaire for Transportation Planners – Part 1

Project identification
<i>What is the name of the study? What cities and regions does it cover? What major streets are covered? For corridor studies, what are the intended termini?</i>
South Lone Tree Rd. Planning and Environmental Linkages (PEL) Study. This study covers the City of Flagstaff and MetroPlan (Flagstaff Metropolitan Planning Organization).
The project area lies within the City of Flagstaff, along South Lone Tree Road from Zuni Road to J.W. Powell Boulevard. The study area is approximately 900 feet in length and will evaluate up to 300 feet to either side of the centerline.
<i>Who is the study sponsor?</i>
MetroPlan in partnership with the City of Flagstaff, Arizona
<i>Briefly describe the study and its purpose.</i>
The purpose of this Planning and Environmental Linkages (PEL) study is to provide direction to the City of Flagstaff, MetroPlan, and member agencies about potential environmental impacts and mitigations to allow for timely development of the future roadway expansion along South Lone Tree Road.
The PEL study will gather data and public feedback to inform the environmental review process, including the National Environmental Policy Act (NEPA), and will evaluate the potential maximum width of the roadway for vehicles, bikes, and pedestrians and identify as many potential environmental impacts as possible to avoid or solve in the final design.

<p><i>Who are the primary study team members (include name, title, organization name, and contact information)?</i></p> <p>David Wessel, Planning Manager, MetroPlan David.wessel@metroplanflg.org 928-699-3053</p> <p>Mandia Gonzales, Transportation Planner, MetroPlan mandia.gonzales@metroplanflg.org, 928-266-1293</p> <p>Jeff Bauman, Traffic Engineer and Interim City Engineer, City of Flagstaff jbauman@flagstaffaz.gov, 928-213-2690</p> <p>Michelle McNulty, Planning Director, City of Flagstaff michelle.mcnulty@flagstaffaz.gov, 928-213-2607</p> <p>Trevor Henry, Capital Improvements Engineer, City of Flagstaff thenry@flagstaffaz.gov 928-213-2684</p> <p>Martin Ince, Multimodal Transportation Planner, City of Flagstaff mince@flagstaffaz.gov 928-213-2685</p> <p>Stephanie Treptow, Principal, EnviroSystems Management, Inc. streptow@esmaz.com 928-226-0236</p>
<p><i>Does the team include advisory groups such as a technical advisory committee, steering committee, or other? If so, include roster(s) as an attachment(s).</i></p> <p>MetroPlan's Executive Board MetroPlan's Technical Advisory Committee (TAC) Management Committee (Internal) https://www.metroplanflg.org/who-we-are (Appendix N)</p>
<p><i>Have previous transportation planning studies been conducted for this region? If so, provide a brief chronology, including the years the studies were completed. Provide contact names and locations of the studies and study websites.</i></p> <p>Active Transportation Master Plan – (2022)</p> <p>Martin Ince, Multimodal Transportation Planner, City of Flagstaff mince@flagstaffaz.gov 928-213-2685</p> <p>Blueprint 2040: Regional Transportation Plan (2017) - Update in progress (Stride Forward)</p> <p>David Wessel, Planning Manager, MetroPlan David.wessel@metroplanflg.org 928-699-3053</p> <p>Flagstaff Regional Plan 2030 (Ratified 2014) - Update in progress (Regional Plan 2045)</p> <p>Sara Dechter, Comprehensive Planning Manager, City of Flagstaff SDechter@flagstaffaz.gov 928-213-2631</p> <p>For the following plans and study please contact: Jeff Bauman, Traffic Engineer, City of Flagstaff jbauman@flagstaffaz.gov, 928-213-2690</p> <ul style="list-style-type: none"> • Towns on Lone Tree Traffic Impact Analysis (2020) • Juniper Point Traffic Impact Analysis (2014) • Zuni/S. Lone Tree HSIP Project assessment report (2013) • Lone Tree Corridor Specific Plan (2008) • Lone Tree Corridor Study (2006) • Juniper Point Specific Plan (2006)
<p><i>What current or near-future planning (or other) studies in the vicinity are underway or will be undertaken? What is the relationship of this study to those studies? Provide contact names and locations of the studies and study websites.</i></p> <p>None at this time.</p>

Study objectives	
What are your desired outcomes for this study? (Mark all that apply.)	
<input checked="" type="checkbox"/> Stakeholder identification <input type="checkbox"/> Stakeholder roles/responsibilities definition <input checked="" type="checkbox"/> Travel study area definition <input type="checkbox"/> Performance measures development <input checked="" type="checkbox"/> Development of purpose and need goals and other objectives <input type="checkbox"/> Alternative evaluation and screening <input checked="" type="checkbox"/> Alternative travel modes definition	<input type="checkbox"/> Scheduling of infrastructure improvements over short-, mid-, and long-range time frames <input checked="" type="checkbox"/> Environmental impacts <input checked="" type="checkbox"/> Mitigation identification <input type="checkbox"/> Don't know <input type="checkbox"/> Other _____
Have system improvements and additions that address your transportation need been identified in a fiscally constrained regional transportation plan?	
No. The City of Flagstaff intends to seek federal funds for roadway improvements along this section of Lone Tree Road. A PEL provides evidence of project preparation which is a competitive advantage. Please know that engineering, design, and construction for this project are not currently programmed but will be accelerated if federal funding is approved.	
Will a purpose and need statement ⁶ be prepared as part of this effort? If so, what steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?	
Yes. It will provide information as required by FHWA's NEPA and Transportation Decision making: The Importance of Purpose and Need in Environmental Documents.	
Establishment of organizational relationships	
Is a partnering agreement in place? If so, who are the signatories (for example, affected agencies, stakeholders, and organizations)? Attach the partnering agreement(s).	
No partnering agreements are needed for this project. The City of Flagstaff will be responsible for delivery.	
What are the key coordination points in the decision-making process?	
N/A	
Planning assumptions and analytical methods	
Is the time horizon of the study sufficiently long to consider the long-term (20 years or more from completion of the study) effects of potential scenarios?	
Yes. The traffic modeling and traffic impact analyses evaluated have a 20-year horizon.	

⁶ For an explanation of purpose and need in environmental documents, please see the Federal Highway Administration's (FHWA's) "NEPA and Transportation Decisionmaking: The Importance of Purpose and Need in Environmental Documents," <[Purpose and Need](#)>. This website provides links to five additional resources and guidance from FHWA that should be helpful in understanding the relationship between goals and objectives in transportation planning studies and purpose and need statements of NEPA documents.

<i>What method will be used for forecasting traffic volumes (for example, traffic modeling or growth projections)? What are the sources of data being used? Has USDOT validated their use?</i>
MetroPlan will use its traffic modeling program along with growth projections that have been developed as part of the Regional Transportation Plan (Stride Forward) which is planned for adoption in April 2023.
<i>Will the study use FHWA's Guide on the Consistent Application of Traffic Analysis Tools and Methods⁷? If not, why not? How will traffic volumes from the travel demand model be incorporated, if necessary, into finer-scale applications such as a corridor study?</i>
Projected volumes will be used to size intersections and right-of-way during the design phase.
<i>Do the travel demand models base their projections on differentiations between vehicles?</i>
No. The City will use a design that is vehicle appropriate to the minor arterial functional classification of Lone Tree Road and J.W. Powell Blvd.
Data, information, and tools
<i>Is there a centralized database or website that all State resource agencies may use to share resource data during the study?</i>
<p>There is no centralized database or website that all State resource agencies may use to share resource data during the study; however, the following is a list of databases accessed for resources identification in the project study corridor:</p> <p>AGFD, 2022. Project report metroplan row_5281 O_ 54486.pdf. Project ID: HGIS-17085</p> <p>Burgess and Niple, 2022. Socioeconomic Profile, MetroPlan 2045 Regional Transportation Plan</p> <p>Coconino County, 2022. https://www.coconino.az.gov/1638/Floodplain-Management</p> <p>EPA, 2022. https://www.epa.gov/dwssa/map-sole-source-aquifer-locations</p> <p>National Park Service, 2022. NRCA 2022: CONDITION OF GLEN CANYON'S TRIBUTARY RIVERS AND ASSOCIATED RESOURCES; https://www.nps.gov/articles/000/nrca_glca_2021_riparian.htm</p> <p>National Wild and Scenic Rivers System, 2022. https://www.rivers.gov/arizona.php</p> <p>NRCS, 2022. (https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1338623.html)</p> <p>SHPO, 2022. https://azstateparks.com/shpo-consultation-on-historic-preservation-compliance</p> <p>USFWS, 2022. Project Code 2022-0076496, Project Name: Metroplan</p> <p>USFWS, 2022a. https://www.fws.gov/story/incidental-take-beneficial-practices-transportation</p> <p>USFWS, 2022b. https://www.fws.gov/story/bird-nests</p> <p>USFWS, 2022c. https://www.fws.gov/program/national-wetlands-inventory</p>

⁷ FHWA November 2011 publication: <[Traffic Analysis Tools and Methods](#)>

Questionnaire for Transportation Planners – Part 2

Purpose and need for this study
<i>How did the study process define and clarify corridor-level or subarea-level goals (if applicable) that influenced modal infrastructure improvements and/or the range of reasonable alternatives?</i>
This PEL Study is the first phase of corridor planning and improvements to connect Lone Tree Road to Route 66 and the future J.W. Powell Blvd. east-west extension. The purpose of expanding South Lone Tree Road is to respond to future growth and development, which is estimated to include at least 4,000 to 5,500 residential units near and immediately adjacent to South Lone Tree Road, and to improve system connectivity.
<i>What were the key steps and coordination points in the decision-making process? Who were the decision-makers and who else participated in those key steps?</i>
As the first phase of corridor planning, the purpose of the PEL study was to identify environmental constraints and mitigations in advance of additional planning efforts and design. The City of Flagstaff will lead future phases that will include the development of alternatives and further public input. As a PEL study, no decisions were made at this stage of the process. However, the City of Flagstaff, as the primary lead for this future project, will be responsible for following city-defined policies in the future planning, design, and construction phases.
<i>How should this study information be presented in future NEPA document(s), if applicable? Are relevant findings documented in a format and at a level of detail that will facilitate reference to and/or inclusion in subsequent NEPA document(s)?⁸</i>
Based on the findings of the S. Lone Tree PEL Study, future expansion of the roadway should qualify for a Categorical Exclusion (CE) as there are no significant effects on the human environment that cannot be mitigated. (Current & Future Conditions Report)
<i>Were the study's findings and recommendations documented in such a way as to facilitate an FHWA or Federal Transit Administration decision regarding acceptability for application in the NEPA process? Does the study have logical points where decisions were made and where concurrence from resource or regulatory agencies, stakeholders, and the public was sought? If so, provide a list of those points.</i>
Yes. The findings and recommendations are demonstrated in the full PEL report. Stakeholder and public comments are further captured in the Survey Report & Findings and Outreach Summary . This feedback will influence future phases of the project.

⁸ For an explanation of the types of documents needed under the NEPA process and the nature of the content of those documents, please see “NEPA Documentation: Improving the Quality of Environmental Documents,” <[Documentation](#)>.

Establishment of organizational relationships – tribes and agencies ⁹			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency’s primary concerns and the steps needed to coordinate with the agency during NEPA scoping. ¹⁰
Tribal			
Hualapai Tribe	9/26/2022	A project notification letter with a request for feedback and determination of any significant historical or cultural sites was sent using Arizona SHPO Government-to-Government Consultation Toolkit	None received
Pueblo of Zuni	9/27/2022		None received
Navajo Nation	9/27/2022		None received
Tonto Apache Tribe	9/27/2022		None received
Yavapai Apache Tribe	9/27/2022		None received
White Mountain Apache Tribe	9/27/2022		10/6/22 - Please be advised, we reviewed the consultation letter and the information provided, and we’ve determined the proposed project plans will have “No Adverse Effect” on the tribe’s cultural heritage resources and/or historic properties. The tribe does not have any cultural ties to the area identified. Thank you for your continued collaboration in protecting and preserving places of cultural and historical importance.
San Carlos Apache Tribe	9/27/2022		10/6/2022 Concurrence with report findings. No adverse Effect.
Hopi Tribe	9/27/2022		None received
Fort McDowell Yavapai Nation	9/27/2022		None received
Yavapai Prescott Indian Tribe	9/27/2022		10/7/22 - I wanted to let you know we are in receipt of the invitation to provide Metroplan knowledge of cultural resources within the project area of South Lone Tree Road in Flagstaff, AZ. This information has been routed to the appropriate department(s), who will reach out to you if needed.
Mescalero Apache Tribe	9/27/2022		None received
Federal			
Bureau of Indian Affairs			Not applicable to the project
Bureau of Land Management			Not applicable to the project
Bureau of Reclamation			Not applicable to the project
Federal Highway Administration	2/6/2022	Provided pre-project guidance on the PEL process. Was kept informed of the PEL process as part of the TAC and Ex. Board Meetings.	None received

⁹ Users may add rows to this table to accommodate additional tribes and agencies. Unused rows may be deleted.

¹⁰ If the transportation planning study final report does not adequately document interactions (for example, meeting minutes, resolutions, letters) with the relevant agencies, append such information to the end of this questionnaire and checklist.

Establishment of organizational relationships – tribes and agencies ⁹			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping. ¹⁰
National Park Service			Not applicable to the project
U.S. Army Corps of Engineers	10/18/2022	Provided guidance on WOTUS as it relates to Bow and Arrow Wash/Zuni intersection	Section 404/401, WOTUS and applicability of NWP 14. Coordinate with USACE and obtain 404/401 permit/certification. Zuni intersection/Bow and Arrow Wash are the only areas within the study area that would require a permit.
U.S. Department of Agriculture Forest Service			Not applicable to this project
U.S. Environmental Protection Agency	10/2/2022	Provided guidance and information	No concerns.
U.S. Department of Defense			Not applicable to the project
U.S. Fish and Wildlife Service	8/18/2022	Provided a list under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 <i>et seq.</i>).	ESA. USFWS research concludes no ESA species were impacted by the project. No mitigation is necessary.
Other			
State			
Arizona Department of Environmental Quality	10/18/2022	Provided guidance	CWA Section 401 certification occurs with the Section 404 permit process.
Arizona Department of Public Safety			Not applicable to the project
Arizona Game and Fish Department	9/28/2022	Project purpose meeting and discussion of wildlife in the project area.	Wildlife corridors, game species, and species of concern. AGFD research and consultation (Hannah Griscom, AGFD Wildlife Biologist) concludes no impacts on resources. No mitigation is necessary.
Arizona State Land Department			Not applicable to the project
Other			
County			
Coconino County, Transportation	9/28/2022	County staff sits on TAC and Ex. Board. Receives regular project updates.	None received
Coconino County, Community Development	9/28/2022	County staff sits on TAC and Ex. Board. Receives regular project updates.	None received
Board of Supervisor Dist. 2 – Jeronimo Vasquez	9/28/2022	Supervisor Vasquez sits on the MetroPlan Executive board. Receives regular project updates.	None received
Board of Supervisor Dist. 3 – Matt Ryan	9/28/2022	Project notification letter and invitation to participate in the process	None received

Establishment of organizational relationships – tribes and agencies ⁹			
Tribe or agency	Date(s) contacted	Describe level of participation	Describe the agency's primary concerns and the steps needed to coordinate with the agency during NEPA scoping. ¹⁰
Coconino African Diaspora Advisory Council	9/28/2022	Project notification letter and invitation to participate in the process	None received
Coconino Hispanic Advisory Council	9/28/2022	Project notification letter and invitation to participate in the process	None received
Indigenous Peoples Advisory Council	9/28/2022	Project notification letter and invitation to participate in the process	None received
Local			
City of Flagstaff, Transportation Engineering/Capital Improvements	8/25/2022	City staff provided project guidance and review of documents throughout the life of the project. Staff sits on TAC and Ex. Board.	Any concerns were addressed through the development of the PEL document
City of Flagstaff, Planning, and Development	9/13/2022	City staff provided project guidance throughout the life of the project.	Any concerns were addressed through the development of the PEL document
Transportation agencies			
Mountain Line	9/28/2022	Mountain Line staff sits on TAC and Ex. Board.	<p>9/29/2022 - Thanks for the invite. We of course are interested in assuming there are frequent, safe crossings for pedestrians and good sidewalks and protected bike lanes to ensure equitable transportation opportunities. We have a nearby bus stop on Zuni. Other environmental comments are minimizing construction grading impacts, particularly related to slopes and drainages. Anne says there used to be bald eagles at the nearby golf course that may still be there.</p> <p>9/30/2022 - FlagMo does identify a bus stop addition near Zuni/Lone Tree to provide access for the neighborhoods developing in the area. There are a lot of physical challenges for both bus stop locations (drainage on Zuni, slope & line of sight on Lone Tree) to making that happen that could potentially be mitigated.</p>

Establishment of organizational relationships – stakeholders and members of the public ¹¹			
Public and stakeholders	Date(s) contacted	Describe level of participation	Describe the primary concerns expressed by members of the public and stakeholders.
Public			
Adjacent Property Owners	9/7/2022	Project notification sent to property owners	None received
Members of the public	9/8/2022 – 12/31/2022	<p>The project website was launched along with regular updates that include PEL documents for review.</p> <p>Postcards were sent to 1053 residents and businesses along the corridor to inform them of the project and invite them to participate in the online survey and open house.</p> <p>Survey – 11/7-11/20</p> <p>Open house -11/14/2022</p>	<p>Findings show that most survey respondents frequently commute through or regularly walk, bike, or access the FUTS trail in the Study Area. The topics of pedestrians and bicycles, and safety ranked the highest in terms of concern and needs for improvements within the study area.</p> <p>Safety concerns in the study area were centered around the intersection of Zuni and Lone Tree. When asked to rank the needs within the study area, “to improve safety conditions for all road users” ranked the highest at 80%. Comments around safety included the need for a signalized stop or roundabout at intersections and improved crossings for bicyclists and pedestrians. Speeding and the difficulty for drivers making a left turn from Zuni onto Lone Tree were also cited.</p> <p>Pedestrian and Bicyclist need ranked the highest in the comments and mapping exercise, and the second highest (60%) identified need in the study area. Comments included the need for improved connectivity through the Zuni intersection to access FUTS, improved on-roadway bicycle facilities, and the need for sidewalks along Zuni. Tied to both safety and pedestrians/bicyclist two (2) comments were received regarding ADA access crossing the intersection of Lone Tree and Zuni, and along Zuni.</p> <p>(Survey Report & Findings)</p>
Stakeholders			
Kinsey Elementary School	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Coconino Community College	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Northern Arizona University	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Grand Canyon Trust	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Center for Biological Diversity	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Century Link/Lumen	9/28/2022	Project notification letter and/or email – invite to participate	None Received
APS	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Friends of Flagstaff's Future	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Flagstaff Arboretum	9/28/2022	Project notification letter and/or email – invite to participate	None Received

¹¹ Users may add rows to this table to accommodate additional stakeholders.

Establishment of organizational relationships – stakeholders and members of the public ¹¹			
Public and stakeholders	Date(s) contacted	Describe level of participation	Describe the primary concerns expressed by members of the public and stakeholders.
Flagstaff Biking Organization	9/28/2022	Project notification letter and/or email – invite to participate	10/20/2022 - Some specific concerns and input given the scale of this new corridor include but are not limited to: • Right-sizing and shaping the roadway and vehicle lanes to mitigate traffic speeds. • Utilizing designs that allow bicyclists to navigate intersections both safely and efficiently. • Implementing separated bike lanes and/or off-street pathways as appropriate to provide a safer and more comfortable and encouraging experience for bicyclists. • Consideration of new traffic patterns that may develop for cyclists in light of the changes to this corridor.
Conservation Study Forum – Habitat Harmony, Inc.	9/28/2022	Project notification letter and/or email – invite to participate	None Received
Friends of Walnut Canyon	9/28/2022	Project notification letter and/or email – invite to participate	None Received

Planning assumptions and analytical methods
<i>Did the study provide regional development and growth assumptions and analyses? If so, what were the sources of the demographic and employment trends and forecasts?</i>
<p>This study reviewed the Regional Plan and Regional Transportation Plan (RTP) both outlining development and growth and how the transportation system will respond. Current demographics and socioeconomics were provided through a recent MetroPlan Socioeconomic Profile as part of the update to the RTP that used state demographic information.</p>
<i>What were the future-year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?</i>
<p>As part of the Flagstaff Regional Plan 2030, S. Lone Tree was identified as an existing and future “suburban” area to the east. The plan further describes the area directly east of J.W. Powell and S. Lone Tree as a “future urban activity center”. Since the Regional Plan was updated in 2018, several development projects have been identified within proximity to the PEL study area. As such, the plans and policies related to the study area show the roadway expansion from 2 lanes to 4 lanes to accommodate growth. Across the specific plan area, at least 4,000 to 5,500 residential units are anticipated and the carrying capacity of the area is roughly 7,500 based on the most intense development scenario. A sophisticated cost model evaluates and incorporated grade, drainage, intersection needs, and levels of amenities into baseline unit costs that are updated with bid tabs and inflation factors.</p>

<i>Were the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?</i>
Yes, the planning assumptions were consistent with the anticipated growth and development of the study area as identified in the regional plans and corridor studies, along with planned transportation systems connectivity and capacity in response to future growth.
Data, information, and tools
<i>Are the relevant data used in the study available in a compatible format that is readily usable? Are they available through a centralized web portal?</i>
Yes. The final PEL report and findings are publicly available at www.metroplanflg.org/pel . The appendices provide further documentation, data, and maps of the study area.
<i>Are the completeness and quality of the data consistent with the quality (not scale or detail) of inputs needed for a NEPA project-level analysis¹²?</i>
Yes. See Current & Future Conditions Report
<i>Are the data used in the study regularly updated and augmented? If regularly updated, provide schedule and accessibility information.</i>
Data is updated only, when necessary, on an irregular basis. Data were collected in October 2022.
<i>Have the environmental data been mapped at scales that facilitate comparison of effects across different resources and at sufficient resolution to guide initial NEPA issue definition? If not, what data collection and/or manipulation would likely be needed for application to the NEPA scoping process?</i>
Environmental data was provided by online reporting/mapping via local, state, and federal agencies. Scales are variable per agency but are at a level sufficient for evaluation of effects for initial NEPA guidance. Additional mapping as it relates to the CWA Section 404/401 process may be required. All other resources have either been mapped (included in appendices to Corridor Conditions Report) or are not present and require no mapping. See page 4 of this document. More information is found in the appendices to the S. Lone Tree PEL study.

¹² For an explanation of the types of information needed to evaluate impacts in environmental documents, please see FHWA's "NEPA and Transportation Decision-making: Impacts," <[Analysis of Impacts](#)>. This website provides links to six additional resources and guidance that should be helpful in understanding the types of impacts that need to be assessed, their context, and their intensity.

Examine the Checklist for Environmental Planners, at the back of this document, for more detail about potential impacts that could be mapped. Below is an abbreviated list of resources that could occur in the study area and may be knowable at this time and at the study's various analytical scales:

Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?	Resource or issue	Is the resource or issue present in the area?	Would any future transportation policies or projects involve the issue? Would there be impacts on the resource?
Sensitive biological resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Section 4(f) ¹³ wildlife and/or waterfowl refuge, historic site, recreational site, park	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Wildlife corridors	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Section 6(f) ¹⁴ resource	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Wetland areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Existing development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Riparian areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Planned development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
100-year floodplain	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Title VI/ Environmental justice populations ¹⁵	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Prime or unique farmland or farmland of statewide or local importance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Utilities	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Visual resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Hazardous materials	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Designated scenic road/byway	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Sensitive noise receivers ¹⁶	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Archaeological resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Air quality	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable
Historical resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Other (list) _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable

¹³ Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S. Code § 303, as amended); see <[Section 4\(f\)](#)>.

¹⁴ Section 6(f) of the Land and Water Conservation Fund Act

¹⁵ refers to Title VI of the 1964 Civil Rights Act and 1994 Executive Order 12898 on environmental justice

Did the study incorporate models of, for example, species/habitat locations (predictive range maps), future land use, population dynamics, stormwater runoff, or travel demand? What models were used? Did the study adequately document what models were used, who was responsible for their use, and how they were used (with respect to, for example, calibration, replicability, contingencies, and exogenous factors)?

US Fish and Wildlife online records indicated no threatened or endangered species or designated Critical Habitat in the PEL Study Area or adjacent. No suitable habitat for potential ESA-listed species is located in the PEL Study Area or adjacent. Arizona Game and Fish Department stated no concern for sensitive species or game species in the PEL Study Area or adjacent.

In scoping, conducting, and documenting the planning study, participants have come across documents and lead from agency staff and other sources that the environmental planners may be able to use in conducting their studies. List any applicable memoranda of understanding, cost-share arrangements, programmatic agreements, or technical studies that are underway but whose findings are not yet published, etc.

None.

Development of alternatives

Were resource agencies, stakeholders, and members of the public engaged in the process of identifying, evaluating, and screening out modes, corridors, a range of alternatives,¹⁷ or a preferred alternative (if one was identified—the latter two refer to corridor plans)? If so, how? Did these groups review the recommendation of a preferred mode(s), corridor(s), range of alternatives (including the no-build alternative), or an alternative? Were the participation and inputs of these groups at a level acceptable for use in purpose and need statements or alternatives development sections in NEPA documents? If not, why not?

No alternatives were presented to the public, agencies, or stakeholders. The purpose of this study was to identify environmental constraints and mitigations in advance of additional planning efforts and design. However, the corridor through previous regional plans has been identified as needing expansion and upgrades to respond to growth and system connectivity. This is an existing alignment that will not shift. Through previous plans and studies, Lone Tree Road identified design concepts for future expansion. These concepts were evaluated as part of this PEL study to ensure the area around them could be cleared.

([Conceptual Footprint Analysis Report](#))

The City of Flagstaff will lead future phases that will include the development of roadway design(s) and public input.

Agencies, stakeholders, and the public were engaged to provide corridor information and determine needs and current deficiencies within the corridor. [Survey Report & Findings](#) and [Outreach Summary](#).

¹⁶ under FHWA's Noise Abatement Criterion B: picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals

¹⁷ For an explanation of the development of alternatives in environmental documents, please see FHWA's "NEPA and Transportation Decisionmaking: Development and Evaluation of Alternatives," <[Alternatives](#)>.

<i>Describe the process of outreach to resource agencies, the public, and other stakeholders. Describe the documentation of this process and of the responses to their comments. Is this documentation adequate in breadth and detail for use in NEPA documents?</i>
<p>Agencies and stakeholders were provided project notices along with project updates as part of MetroPlan's standing Technical Advisory Committee and Executive Board. Many of the decision-makers for this project are partners and/or members of the various committees.</p> <p>The public was provided access to the project information webpage. Residents, property owners, and businesses were invited to participate in an online survey along with an informational open house.</p>
<i>If the study was a corridor study, describe the range of alternatives considered (if any), screening process, and screening criteria. Include what types of alternatives were considered (including the no-build alternative) and how the screening criteria were selected. Was a preferred alternative selected as best addressing the identified transportation issue? Are alternatives locations and design features specified?</i>
Not applicable
<i>Also regarding whether the study was a corridor study, for alternatives that were screened out, summarize the reasons for their rejection. Are defensible, credible rationale articulated for their being screened out? Did the study team take into account the legal standards¹⁸ needed in the NEPA process for such decisions? Did the study team have adequate information for screening out the alternatives?</i>
No alternatives were considered. No public and legal rationale were put forth by the public or legally required for inclusion or screening out of other alternatives.
<i>What issues, if any, remain unresolved with the public, stakeholders, and/or resource agencies?</i>
None.
Formally joining PEL with the NEPA process
<i>Lead federal agencies proposing a project that will undergo the NEPA process will want to most effectively leverage the transportation planning study's efforts and results. How could a Notice of Intent (for an environmental impact statement¹⁹) refer to the study's findings with respect to the preliminary purpose and need and/or the range of alternatives to be studied?</i>
If a Notice of Intent is needed, the lead agency can use this PEL to evaluate/confirm growth assumptions, related multimodal demand, and sizing of facilities. Alternatives will respect the basic alignment and vary the roadway prism, intersection design, and geometry.
<i>Could a Notice of Intent in the NEPA process clearly state that the lead federal agency or agencies will use analyses from prior, specific planning studies that are referenced in the transportation planning study final report? Does the report provide the name and source of the planning studies and explain where the studies are publicly available? If not, how could such relevant information come to the environmental planners' attention and be made available to them in a timely way?</i>
A Notice of Intent in the Federal Register is not required. The project falls within the requirements of a Categorical Exclusion.

¹⁸ 23 Code of Federal Regulations (CFR) § 771.123(c), 23 CFR § 771.111(d), 40 CFR § 1502.14(a), 40 CFR § 1502.14(b) and (d), 23 CFR § 771.125(a)(1); see FHWA Technical Advisory T 6640.8A, October 30, 1987, <[FHWA Technical Advisory T 6640.8A](#)>.

¹⁹ While Notices of Intent are required by some federal agencies for environmental assessments, they are optional for FHWA. Please see "3.3.2 Using the Notice of Intent to Link Planning and NEPA," in Guidance on Using Corridor and Subarea Planning to Inform NEPA (Federal Highway Administration, April 5, 2011), <Notice of Intent>.

<p><i>List how the study's proposed transportation system would support adopted land use plans and growth objectives.</i></p> <p>This PEL Study supports the Regional Plan and the Regional Transportation Plans by providing improved access and connectivity while meeting the City's existing policies related to the Carbon Neutrality Plan and the Active Transportation Plan. Multiple studies analyzed the effects of the planned developments near and along South Lone Tree Road and the increased traffic volumes they will bring. Findings determined that upgrades and expansion will improve safety, future vehicle capacity, and multimodal demand.</p>										
<p><i>What modifications are needed in the goals and objectives as defined in the transportation study process to increase their efficient and timely application in the NEPA process?</i></p> <p>None.</p>										
<p><i>Jurisdictional delineations of waters of the United States frequently change. Housing and commercial developments can alter landscapes dramatically and can be constructed quickly. Noise and air quality regulations can change relatively rapidly. Resource agencies frequently alter habitat delineations to protect sensitive species. Will the study data's currency, relevance, and quality still be acceptable to agencies, stakeholders, and members of the public for use in the NEPA process? If not, what will be done to rectify this problem? Who will be responsible for any needed updating?</i></p> <p>Yes.</p>										
<p>Other issues</p> <p>Are there any other issues a future NEPA study team should be aware of (mark all that apply)? In the space below the check boxes, explain the nature and location of any issue(s) checked.</p> <table border="0"> <tr> <td><input type="checkbox"/> Public and/or stakeholders have expressed specific concerns</td> <td><input type="checkbox"/> Contact information for stakeholders</td> </tr> <tr> <td><input checked="" type="checkbox"/> Utility problems</td> <td><input type="checkbox"/> Special or unique resources in the area</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access or right-of-way issues</td> <td><input type="checkbox"/> Federal regulations that are undergoing initial promulgation or revision</td> </tr> <tr> <td><input checked="" type="checkbox"/> Encroachments into right-of-way</td> <td><input type="checkbox"/> Other _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders</td> <td></td> </tr> </table>	<input type="checkbox"/> Public and/or stakeholders have expressed specific concerns	<input type="checkbox"/> Contact information for stakeholders	<input checked="" type="checkbox"/> Utility problems	<input type="checkbox"/> Special or unique resources in the area	<input checked="" type="checkbox"/> Access or right-of-way issues	<input type="checkbox"/> Federal regulations that are undergoing initial promulgation or revision	<input checked="" type="checkbox"/> Encroachments into right-of-way	<input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders	
<input type="checkbox"/> Public and/or stakeholders have expressed specific concerns	<input type="checkbox"/> Contact information for stakeholders									
<input checked="" type="checkbox"/> Utility problems	<input type="checkbox"/> Special or unique resources in the area									
<input checked="" type="checkbox"/> Access or right-of-way issues	<input type="checkbox"/> Federal regulations that are undergoing initial promulgation or revision									
<input checked="" type="checkbox"/> Encroachments into right-of-way	<input type="checkbox"/> Other _____									
<input checked="" type="checkbox"/> Need to engage—and be perceived as engaging—specific landowners, citizens, citizen groups, or other stakeholders										
<ul style="list-style-type: none"> Existing utilities will need to be moved to support roadway expansion. ROW access/encroachment will need to be further evaluated as several new developments are permitted to break ground in and around the study area. The public has been engaged as part of this study. However, future phases will need further engagement, especially around design. 										

Checklist for Environmental Planners – Part 3

By completing this checklist, environmental planners will be able to systematically evaluate the transportation planning study with regard to environmental resources and issues. It provides a framework for future NEPA studies by identifying those resources and issues that have already been evaluated, and those that have not. This role includes timely advocacy for resources and issues that will later be integral to NEPA processes.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Natural environment				
Sensitive biological resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	US Dept. of the Interior Fish and Wildlife Service, and AZ Ecological Services - List of threatened and endangered species.
Wildlife corridors	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	AZGF reports a "special area documented that intersects the study area" at Bow and Arrow Wash. A meeting was held with AZGF to discuss any recommended mitigations or considerations. AZGF expressed no concerns with roadway expansion's effects on Elk and Deer herd movements.
Invasive species	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Use of Best Management Practices and City weed management treatments.
Wetland areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Site visit and National Wetlands Inventory Report from USFWS indicate no wetlands present.
Riparian areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Site visits, GIS, and the USFWS and AGFD determined that no riparian areas are present.
100-year floodplain	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	GIS was used to identify potential floodplains. The floodplain is only located at the intersection of Lone Tree and Zuni (Corps file number SPL-2018-00133). A Floodplain Management Plan will be required to mitigate any impacts to floodplains in the PEL Study Area.
Clean Water Act Sections 404/401 waters of the United States	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	USACE confirmed that a previous permit had been granted for Zuni Drive Improvements. Nationwide permit 14 and general conditions will be met or, if applicable, an Individual permit will be obtained.
Prime or unique farmland	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	GIS and site visit
Farmland of statewide or local importance	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Site visits and GIS determined that no farmland is present.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Sole-source aquifers	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	GIS data was obtained. None identified.
Wild and scenic rivers	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	GIS data was obtained via rivers.gov. None identified.
Visual resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Not applicable.
Designated scenic road/byway	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	A list of Arizona Parkways, Historic, and Scenic Roads was obtained. None identified.
Cultural resources				
Archaeological resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	AZsite records search and a preliminary field inspection performed by EnviroSystems Management, Inc. determined that no resources were present. Formal Class I and III survey and report will be required.
Historical resources	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Information provided by local tribal governments indicates no historical or cultural resources in the study area.
Section 4(f) and Section 6(f) resources				
Section 4(f) wildlife and/or waterfowl refuge	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	As identified by the USFWS and AGFD, there are no existing refuges in the study area.
Section 4(f) historic site	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	The National Register of Historic Places (NRHP) indicates no historical sites in the study area.
Section 4(f) recreational site	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Replacement, expansion, or enhancement of City-owned trailhead resulting in Section 4(f) <i>de minimis</i> effects. De Minimis Impact And Parks, Recreation Areas, And Refuges - All three criteria for a determination of <i>de minimis</i> impact on parks, recreation areas, and wildlife and waterfowl refuges have been met. (23 CFR § 771.117 - FHWA categorical exclusions)
Section 4(f) park	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	No parks in the study area. Not applicable.

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Section 6(f) resource	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Not applicable.
Human environment				
Existing development	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<p>Using GIS and on-site visits, existing developments are located south of the study area and Coconino Community College is northeast of the study area. Within the 600-foot buffer that was reviewed in the study, there are no significant developments.</p> <p>Mitigation should be considered at the intersections of Lone Tree at Zuni and Lone Tree at J.W. Powell depending on the final intersection design and improvements.</p>
Planned development	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	<p>Planned developments are presented in several long-and-short-range plans provided by the city. The city also confirmed developments immediately adjacent to the study area (NW corner of JW Powell/Lone Tree) and just east of the study area along JW Powell.</p>
Displacements	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	<p>The majority of the study area is not developed. Existing housing is located directly south of the study area. No displacements will take place with the roadway expansion and upgrades.</p>
Access restriction	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<p>A Traffic Plan may be required to mitigate any disruptions to access and traffic flow during construction in the PEL Study Area.</p>
Neighborhood continuity	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	
Community cohesion	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	
Title VI/Environmental justice populations	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	<p>GIS and site visits show minimal populations exist in the study area. A review of MetroPlan's Socioeconomic report does not indicate that any populations will be negatively impacted by the roadway expansion and upgrades.</p>
Physical environment				
Utilities	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<p>Relocation of various utilities may be required depending on the final roadway design.</p>

Checklist for environmental planners

Resource or issue	Is the resource or issue present in the area?	Are impacts to the resource or issue involvement possible?	Are the impacts mitigable?	Discuss the level of review and method of review for this resource or issue and provide the name and location of any study or other information cited in the planning document where it is described in detail. Describe how the planning data may need to be supplemented during NEPA.
Hazardous materials	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Not applicable	Referencing the EDR Radius Map Report, no hazardous materials are present.
Sensitive noise receivers	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Construction timing restrictions.
Air quality	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	Air quality will be mitigated through regular watering of the site during construction. No Class I or non-attainment areas are present.
Other (list)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not applicable	

Identification of potential environmental mitigation activities
<i>Could the transportation planning process be integrated with other planning activities, such as land use or resource management plans? If so, could this integrated planning effort be used to develop a more strategic approach to environmental mitigation measures?</i>
Planning activities can be integrated with a Floodplain Management Plan and Section 404/401 Nationwide permitting requirements.
<i>With respect to potential environmental mitigation opportunities at the PEL level, who should the City of Flagstaff consult with among federal, State, and local agencies and tribes, and how formally and frequently should such consultation be undertaken?</i>
FHWA regarding potential CE and next steps for project development. Continue communications and outreach to identified stakeholders from local agencies and organizations. The tribal governments that did not respond to this inquiry should be contacted again to determine if there are any concerns.
<i>Off-site and compensatory mitigation areas are often creatively negotiated to advance multiagency objectives or multiple objectives within one agency. Who determined what specific geographic areas or types of areas were appropriate for environmental mitigation activities? How were these determinations made?</i>
No need for compensatory mitigation has been identified. If needed compensatory mitigation in the form of wetland enhancement may be considered if Section 404 if requirements of NWP 14 cannot be met and an Individual Permit is required. These potential mitigations are not clearly determined to date.
<i>To address potential impacts on the human environment, what mitigation measures or activities were considered and how were they developed and documented?</i>
There are no impacts on the Human Environment.

Prepared by: Stephanie Treptow, Principal/Environmental Planner

Signature: _____

Date: _____

EnviroSystems Management Inc.
23 E. Fine Ave.
Flagstaff, AZ 86001
928-226-0236

Prepared by: Mandia Gonzales, Transportation Planner

Signature: _____

Date: _____

MetroPlan Flagstaff
3773 N Kaspar Dr.
Flagstaff, AZ 86004
928-266-1293

II. REFERENCES

- ADOT, 2013. Initial Project Assessment Report, Lone Tree Road and Zuni Drive Intersection Improvements, Federal Aid No. HSIP FLA-0(209), ADOT No. SH511 03D
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- National Wild and Scenic Rivers System, 2022. <https://www.rivers.gov/arizona.php>
- NRCS, 2022. (https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1338623.html)
- SHPO, 2022. <https://azstateparks.com/shpo-consultation-on-historic-preservation-compliance>
- USFWS, 2022. Project Code 2022-0076496, Project Name: Metroplan
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