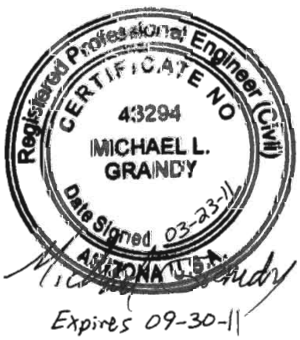
Northern Parkway/ Tonopah Parkway Corridor Feasibility Study

Contract 2010-004
Project TT005

FINAL

Technical Memorandum 4

Candidate Alternative Alignments and Evaluation



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1. INTRODUCTION

Technical Memorandum 4 (TM 4), entitled *Candidate Alternative Alignments and Evaluation*, provides a summary of the alternatives development and evaluation process for the *Northern Parkway: Tonopah Parkway to Turner Parkway and Tonopah Parkway: Northern Parkway to Interstate 10 Corridor Feasibility Study* (hereafter referred to as the *Northern Parkway/Tonopah Parkway CFS*, or "the project"). Specifically, TM 4 describes the study background and study area; the process used to develop conceptual and candidate alternative alignments; constraints that were considered in the development of alternatives; and evaluation criteria that were applied to candidate alternative alignments to identify preferred alternative alignments for further analysis. Additional detailed information about the project is included in the following companion documents: *Existing and Future Corridor Features (*TM 1) *Environmental Overview* (TM 2), *Conceptual Drainage Report* (TM 3), and *Detailed Preferred Alignment* (TM 5).

1.1 Background and Study Need

In July 2008, the Maricopa Association of Governments (MAG) completed the *Interstate 10/Hassayampa Valley Transportation Framework Study* (known as the *Hassayampa Framework Study*), that recommended a comprehensive roadway network to meet the future traffic demands that result when the area west of the White Tank Mountains is completely developed (hereafter referred to as buildout travel demand). This long-range regional transportation network includes the "Arizona Parkway" as a new facility type to supplement more traditional roadway classifications in meeting projected travel demand.

The Arizona Parkway utilizes a distinct intersection treatment that prohibits left turns at major cross-street intersections and controls intersection traffic movements with two-phased traffic signal control. Left-turn movements are made indirectly using directional left-turn crossovers in the median immediately downstream of cross-street intersections.

The *Hassayampa Framework Study* demonstrated the need for both Northern Parkway and Tonopah Parkway. Although today's land development and travel demands in the project study area do not warrant major new high capacity roadways in the near-term future, the buildout forecast for future land development and travel demands does warrant major new high capacity roadways in the long-term future. Plans are already underway to convert some of the vacant lands within the project study area to land uses that will generate future traffic.

To preserve sufficient public right-of-way for the future Northern Parkway and Tonopah Parkway, the planning process needs to identify right-of-way requirements for buildout conditions. This study is the first step in the roadway development process and is meant to aid the governing bodies in defining and protecting a continuous future roadway corridor that can accommodate buildout traffic demands in the project study area.

The project scope of work for this study includes the tasks necessary to prepare a corridor feasibility report that will provide the Maricopa County Department of Transportation (MCDOT), the Town of Buckeye, area property owners, developers, and other stakeholders with a planning tool for future growth and development that will lead to the preservation of a 200-foot wide right-of-way corridor to accommodate the typical Arizona Parkway design. This will require significant coordination with various governing bodies, other public agencies, development interests, and the general public.

1.2 Project Study Area

The project study area includes the planned Northern Parkway, an east-west corridor centered on the Northern Avenue section line, from the planned Tonopah Parkway (411th Avenue alignment) to the planned Turner Parkway (267th Avenue alignment). The Northern Parkway corridor within the project study area is approximately 18 miles long and two miles wide. This section of Northern Parkway is referred to as the Northern Parkway Hassayampa section to distinguish it from other planned Northern Parkway sections east of the White Tank Mountains.

The project study area also includes the planned Tonopah Parkway, a north-south corridor centered on the 411th Avenue section line, from Interstate 10 (I-10) to the planned Northern Parkway. The Tonopah Parkway corridor within the project study area is approximately 3.75 miles long and two miles wide.

The project study area boundaries are shown in **Figure 1**.

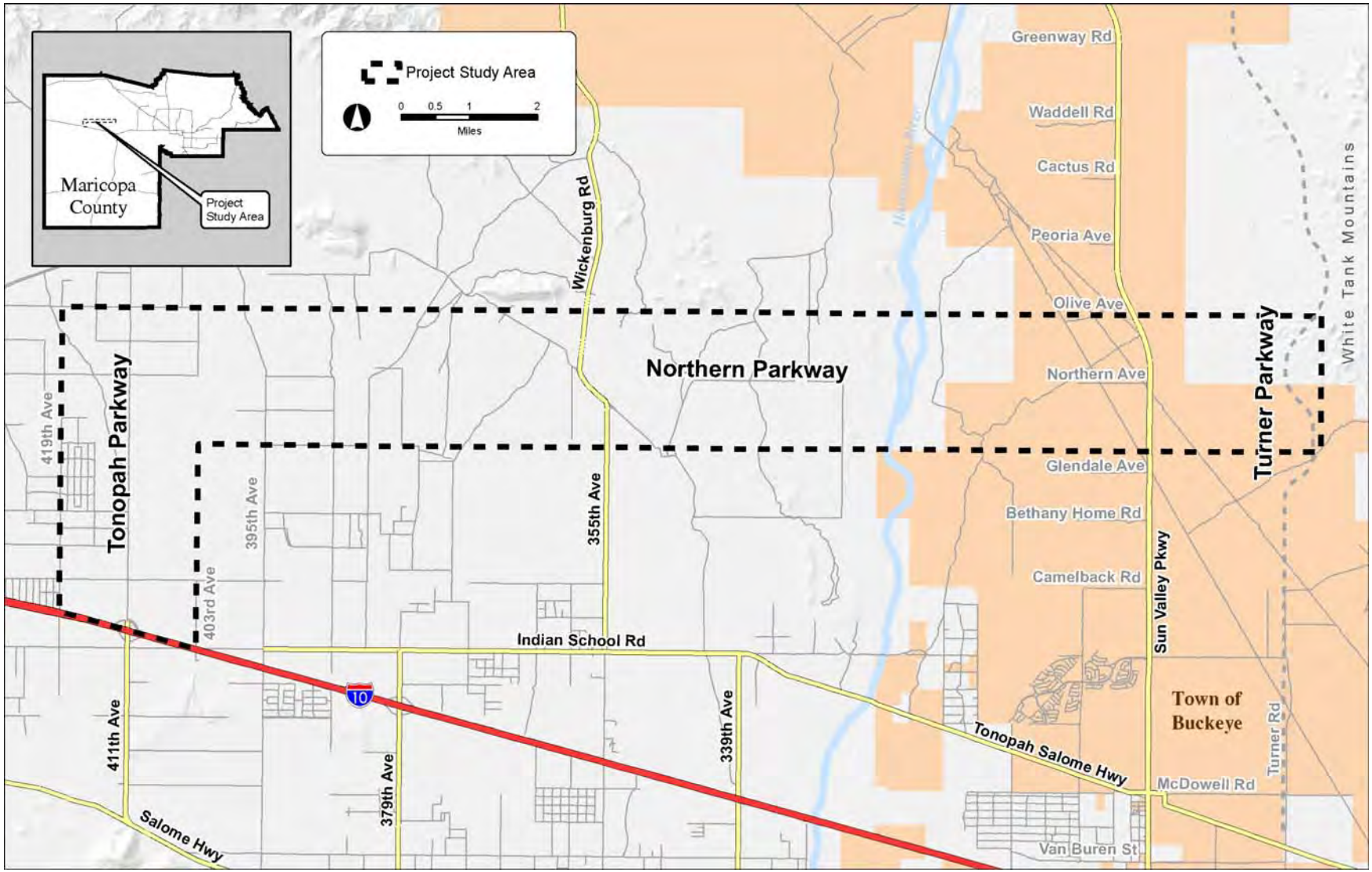

Figure 1 - Project Study Area

2. DEVELOPMENT OF ALTERNATIVES

2.1 Alternatives Development Process

The alternatives development process involved two steps. The first step was to identify a series of conceptual alternatives that would be subjected to a "fatal flaw" analysis. Project team members participated in a brainstorming session to produce a wide range of potentially viable 200-foot wide conceptual alternatives. The conceptual alternatives were developed only to the extent necessary to conduct a meaningful comparative analysis that would produce up to three candidate alternatives that could be defined and evaluated in greater detail.

The second step was to more clearly define the candidate alternatives and evaluate them with respect to a series of evaluation criteria. The conceptual alternatives, candidate alternatives, and evaluation criteria were all developed in consultation with the Technical Advisory Committee (TAC) and stakeholders and were presented for general public input at public open house meetings.

For alternatives development and evaluation purposes, the study area was divided into two separate segments: the Tonopah Parkway segment and the Northern Parkway segment. The Tonopah Parkway segment alternatives commence at the existing I-10 interchange and proceed north to connect with Northern Parkway. The Northern Parkway segment alternatives commence at Tonopah Parkway and proceed east to connect with Turner Parkway.

2.2 Potential Corridor Constraints

Based on the findings reported in TM 1, TM 2, and TM 3, potential corridor constraints were mapped for consideration in developing conceptual alternatives. Potential corridor constraints consist of features that may have some bearing on the location and configuration of conceptual alternatives. Many of the potential constraints are not truly "fatal flaws" but rather may result in higher project costs if they cannot be avoided and mitigation measures are required.

The potential constraints that are considered to be more significant and should be avoided if possible include schools, churches, landfills, cultural and historic resources, wildlife areas, floodplains, steep slope areas, approved planned developments, and large utility facilities.

Potential constraints that were considered in developing the conceptual alternatives are summarized as follows:

- Land ownership:
  - Bureau of Land Management; and
  - Arizona State Trust land.
- Land use:
  - Existing and planned developments;
  - Sonoran Desert Tortoise habitat;
  - Wildlife linkage zones;
  - Potential sand and gravel operations;
  - Dairy farm;

- Agricultural operations; and
- Our Lady of Solitude Monastery north of Olive Avenue.

- Transportation:
  - I-10/411th Avenue interchange;
  - Sun Valley Parkway connection;
  - Future connections with Camelback Parkway, Wintersburg Parkway, Hassayampa Freeway, Hidden Waters Parkway, and Turner Parkway; and
  - Planned trail systems.

- Utilities/Facilities:
  - Irrigation canals – Tonopah Canal;
  - Gas pipelines and electrical power lines near Sun Valley Parkway; and
  - ADOT Service Yard near I-10 and 411th Avenue.

- Topography:
  - Steep slopes near Hassayampa River and Jackrabbit Wash; and
  - Steep slopes near White Tank Mountains.

- Others:
  - Potential cultural resources throughout the study area; and
  - Floodplains.

2.3 Phase I Conceptual Alternatives

As a starting point in the development of conceptual alternatives, a brainstorming session was conducted with project task leaders and the MCDOT project manager to generate a wide range of 200-foot wide corridor options that span the full width and length of the study area. The conceptual alignment alternatives along with potential constraints for the Tonopah Parkway segment and Northern Parkway segment are shown in **Figure 2**. As this figure shows, there are opportunities to assemble multiple combinations of alternatives at common intersecting points to produce numerous options for consideration.

In developing conceptual alternatives, constraints considered to be potential "fatal flaws" were avoided to the extent possible to produce a set of realistic alternatives. The conceptual alternatives were presented to the TAC and stakeholders for review and input.

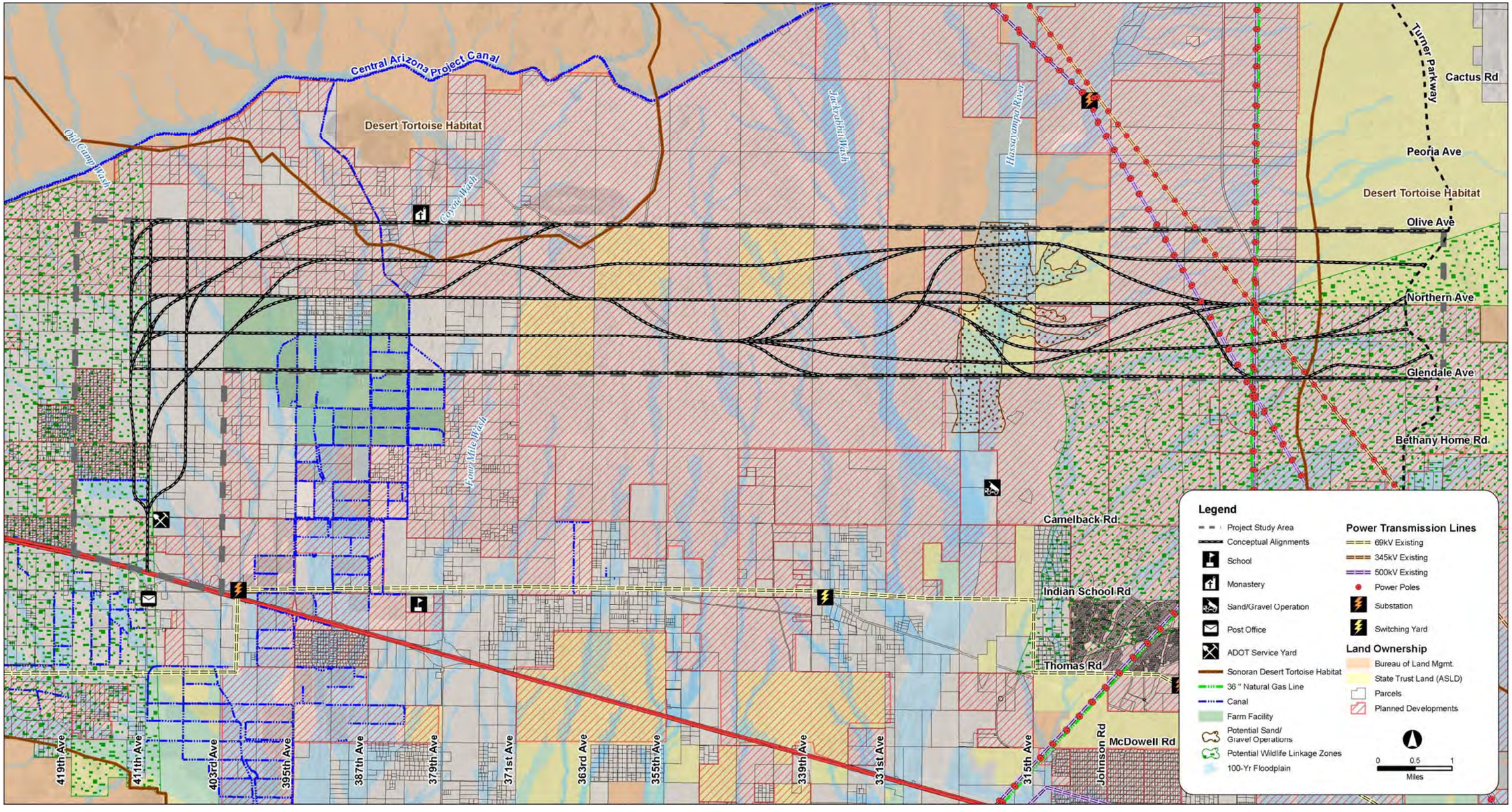

Figure 2 - Conceptual Alternatives

2.4 Phase II Candidate Alternatives

To narrow the range of alternatives to be evaluated in greater detail, a subjective, qualitative assessment was performed on all conceptual alternatives. Preliminary candidate alternatives were selected from the conceptual alignments and presented to the TAC and stakeholders for review and input. The preliminary candidate alternatives were those that involved the fewest constraints and were most compatible with existing land uses and future development master plans.

For the Tonopah Parkway segment between I-10 and Northern Parkway, three preliminary candidate alternatives were proposed as follows:

- Alternative A – A 200-foot wide corridor centered on the 411th Avenue section line;
- Alternative B – A 200-foot wide corridor with the centerline shifted 35' west of the 411th Avenue section line; and
- Alternative C – A 200-foot wide corridor with the centerline shifted 35' east of the 411th Avenue section line.

These alternatives have the least impact on existing subdivided properties, are most compatible with planned developments, and tie directly to the existing I-10 interchange with 411th Avenue.

For the Northern Parkway segment between Tonopah Parkway and Turner Parkway, three preliminary candidate alternatives were proposed as follows:

- Alternative A – A 200-foot wide corridor centered on the Northern Avenue section line except for a three-mile dip to the south within the Belmont master planned community;
- Alternative B – A 200-foot wide corridor with a centerline that shifts one-half mile north of Alternative A from Tonopah Parkway to 371st Avenue, then shifts south to proceed east on the Alternative A alignment from 363rd Avenue to Turner Parkway; and
- Alternative C – A 200-foot wide corridor with a centerline that follows the Alternative A alignment from Tonopah Parkway to one mile west of the Sun Valley Parkway, then shifts south to Glendale Avenue and continues east to Turner Parkway.

As with the Tonopah preliminary candidate alternatives, the Northern Parkway alternatives are generally the most compatible with existing and planned developments.

After discussing these preliminary candidate alternatives in detail with the TAC and stakeholders, it was decided that the Tonopah Parkway preliminary candidate alternatives would proceed through the more detailed evaluation process. For the Northern Parkway segment, it was decided that only Alternative A and Alternative B would proceed through the more detailed evaluation. It was concluded that Northern Parkway Alternative C would be too disruptive to planned developments and would result in unnecessary out-of-direction travel. In lieu of developing a third candidate alternative for the Northern Parkway segment, the TAC and stakeholders recommended that variations of Alternative A and Alternative B should be examined at the Hassayampa River crossing and where electrical line towers exist close to the Northern Avenue section line near Sun Valley Parkway. These variations to Alternative A and Alternative B are described further in Section 3.3 – Special Analysis Areas.

Drawings showing the candidate alternatives as recommended by the TAC and stakeholders for Tonopah Parkway and Northern Parkway are shown in **Figure 3**. Schematic drawings showing the candidate alternatives at a scale of 1 inch = 800 feet are shown in **Figure 4**.

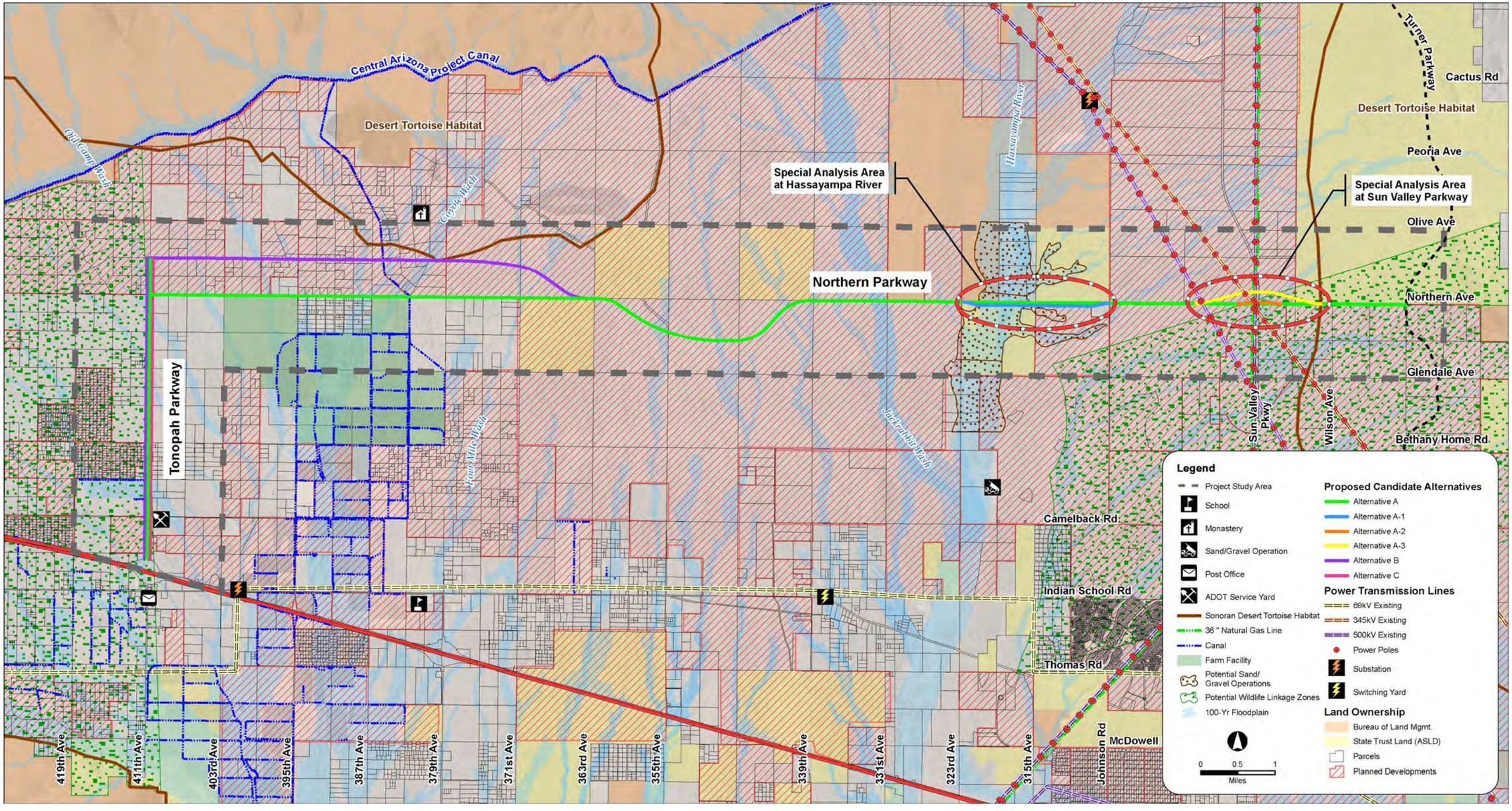

Figure 3 - Candidate Alternatives

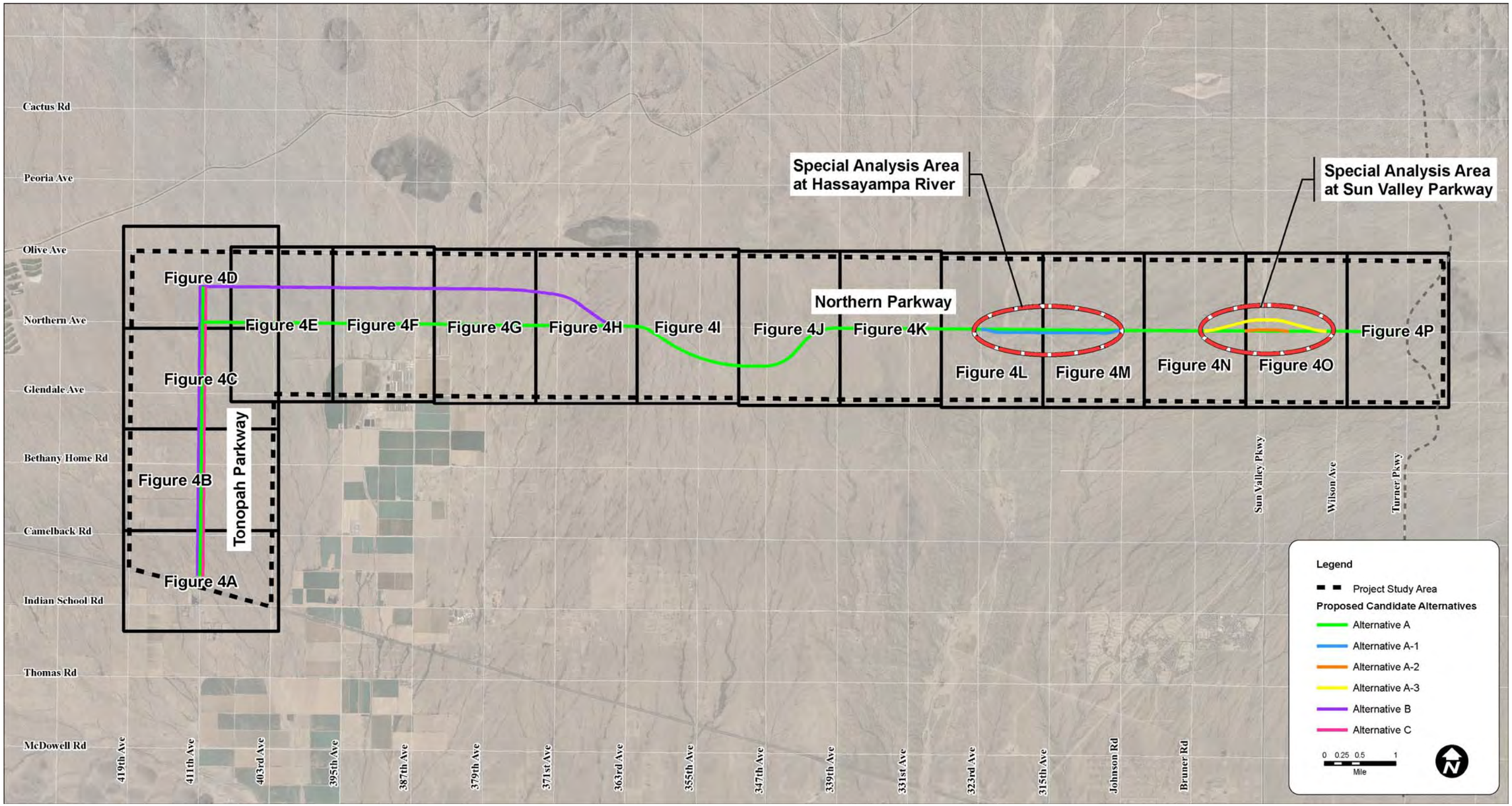

Figure 4 - Candidate Alternatives Schematic Drawings Key Map

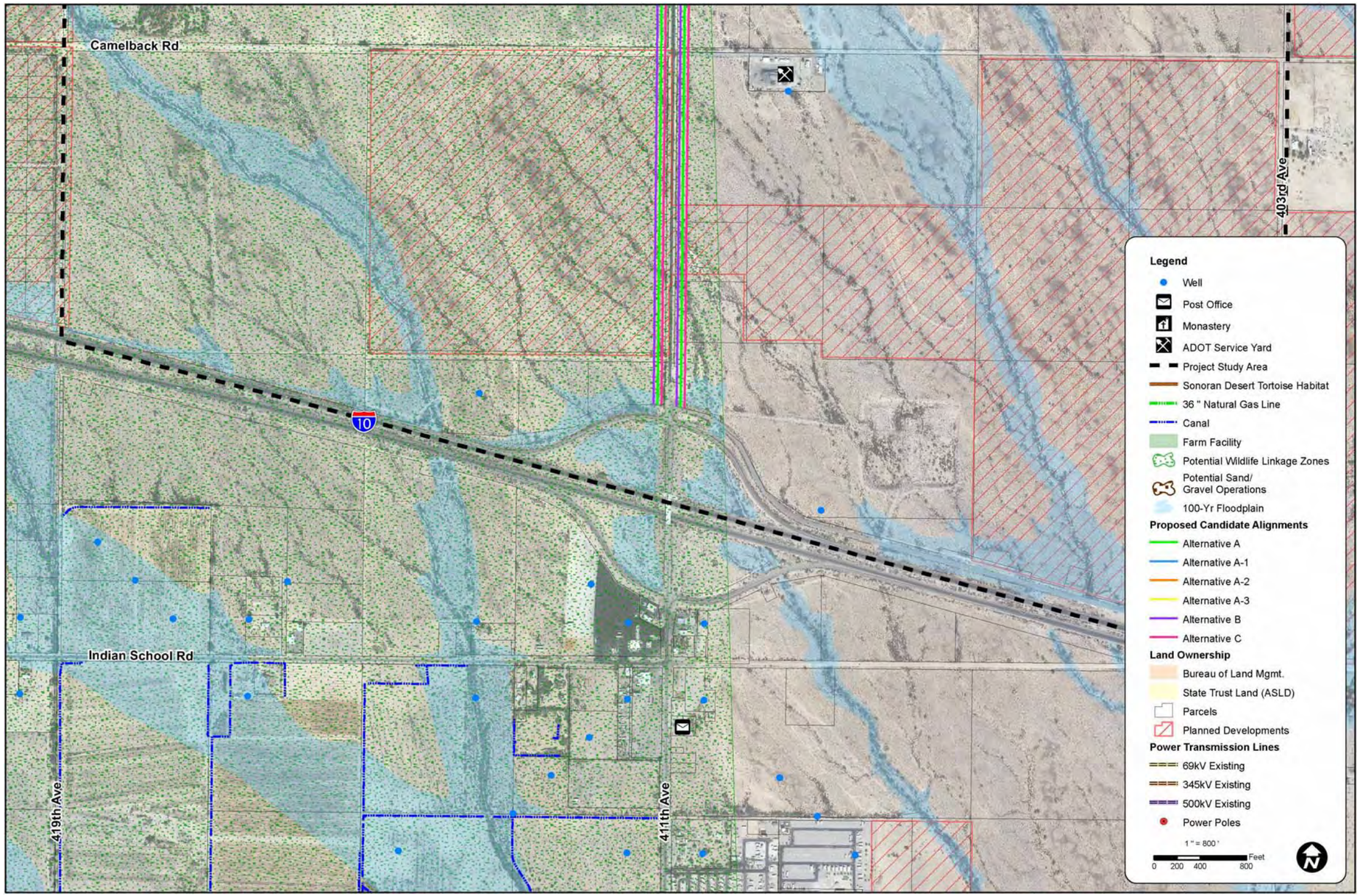

Figure 4A - Candidate Alternatives Schematic Drawings

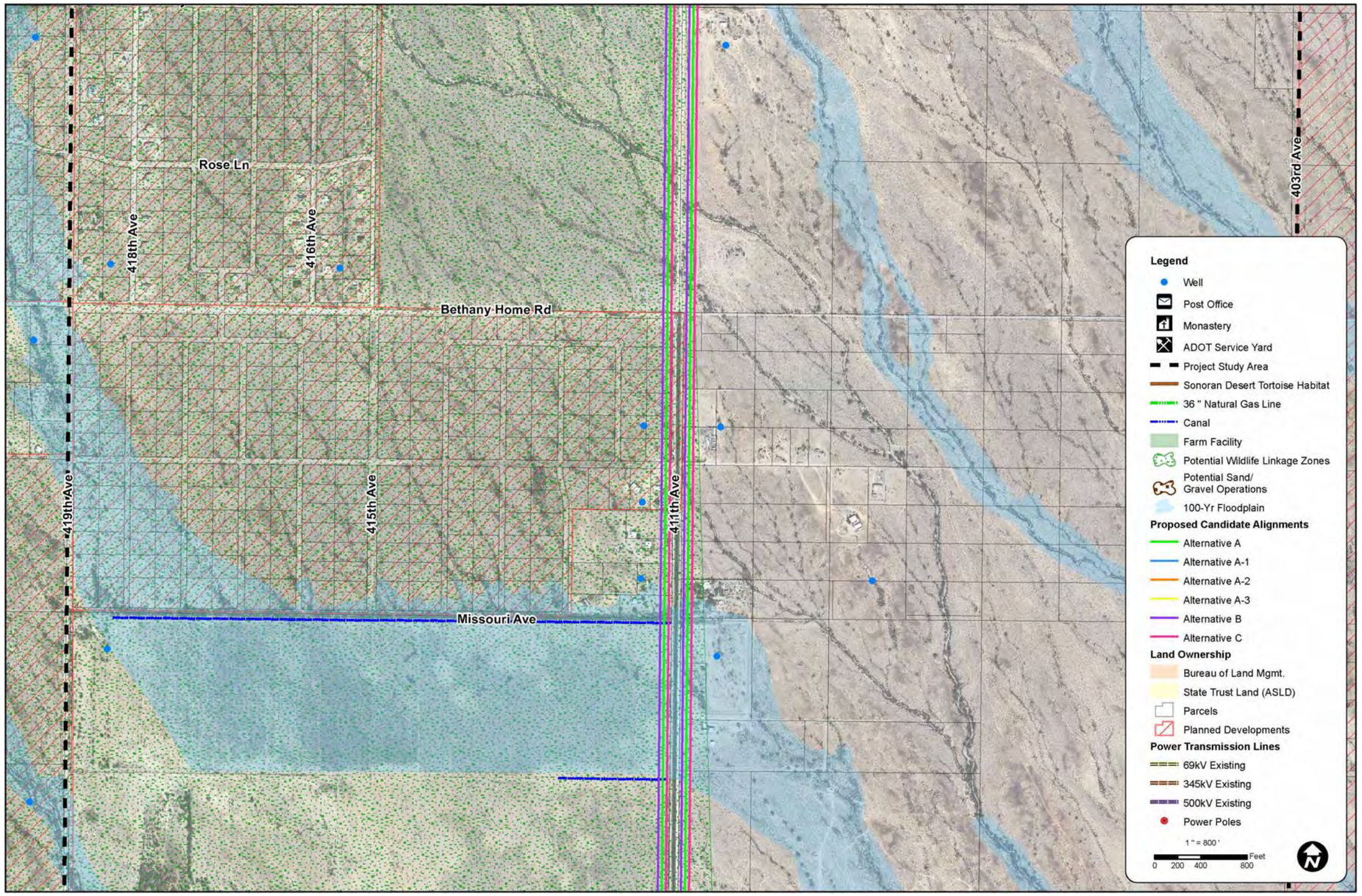

Figure 4B - Candidate Alternatives Schematic Drawings

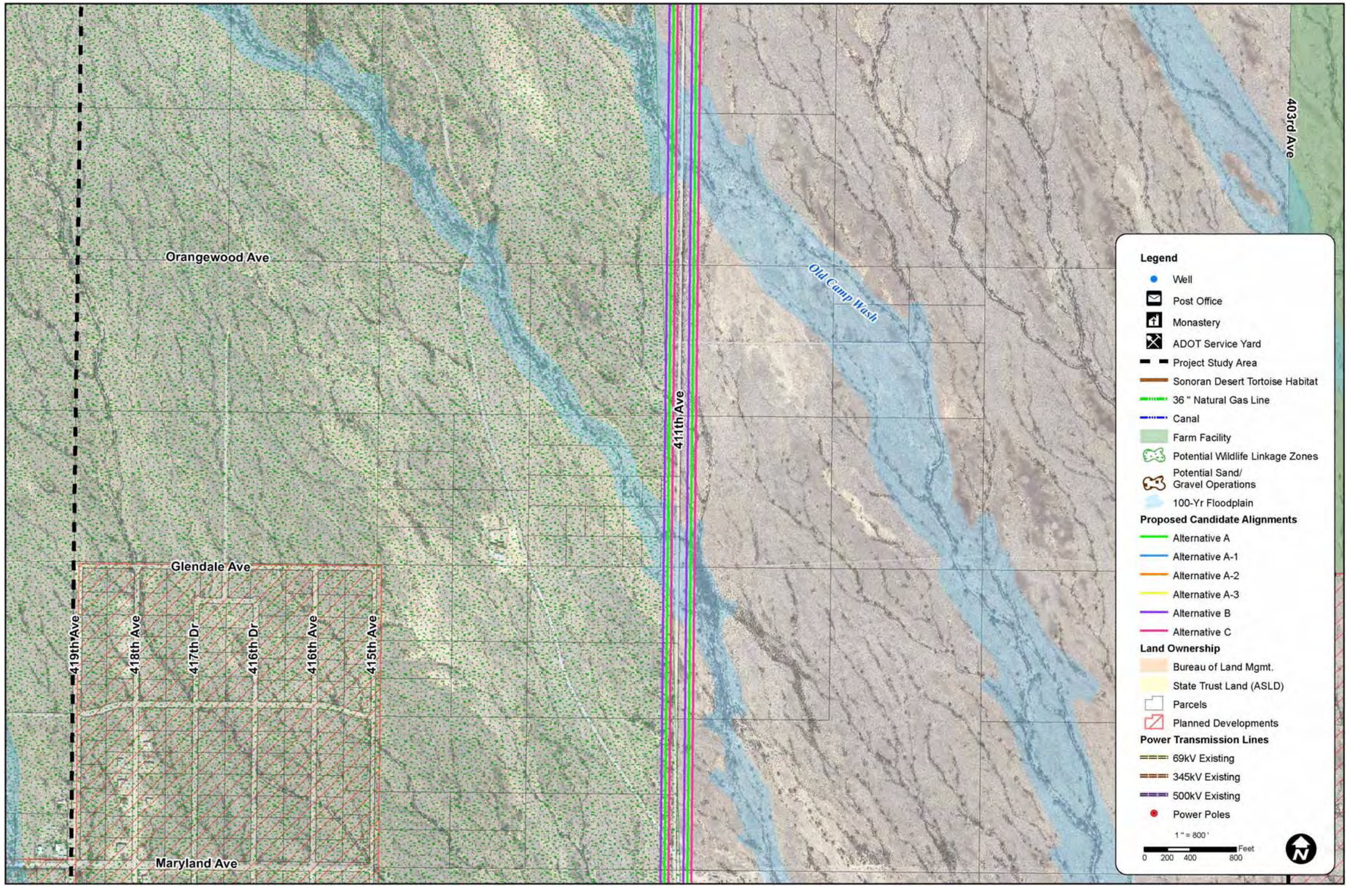

Figure 4C - Candidate Alternatives Schematic Drawings

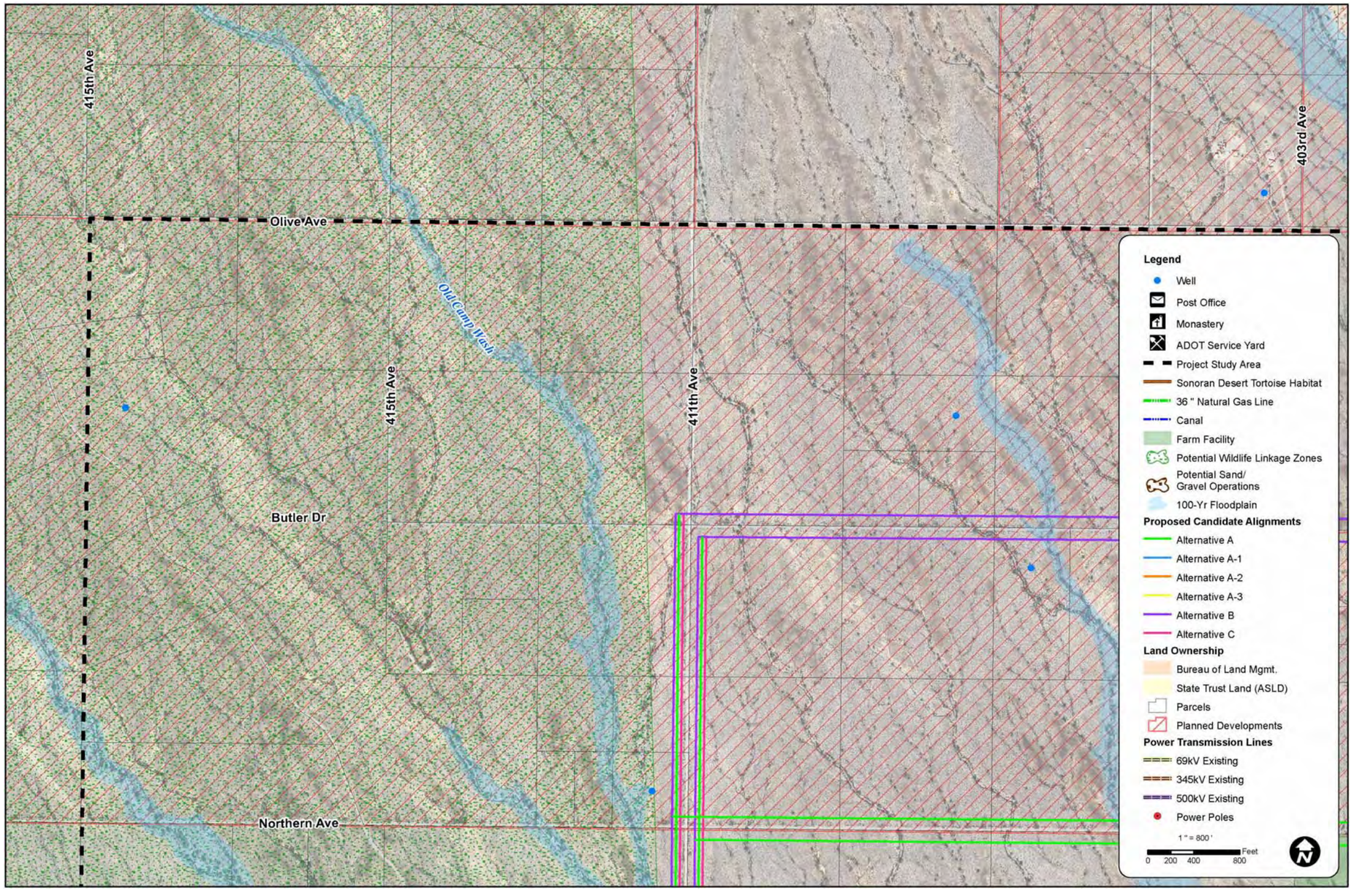

Figure 4D - Candidate Alternatives Schematic Drawings

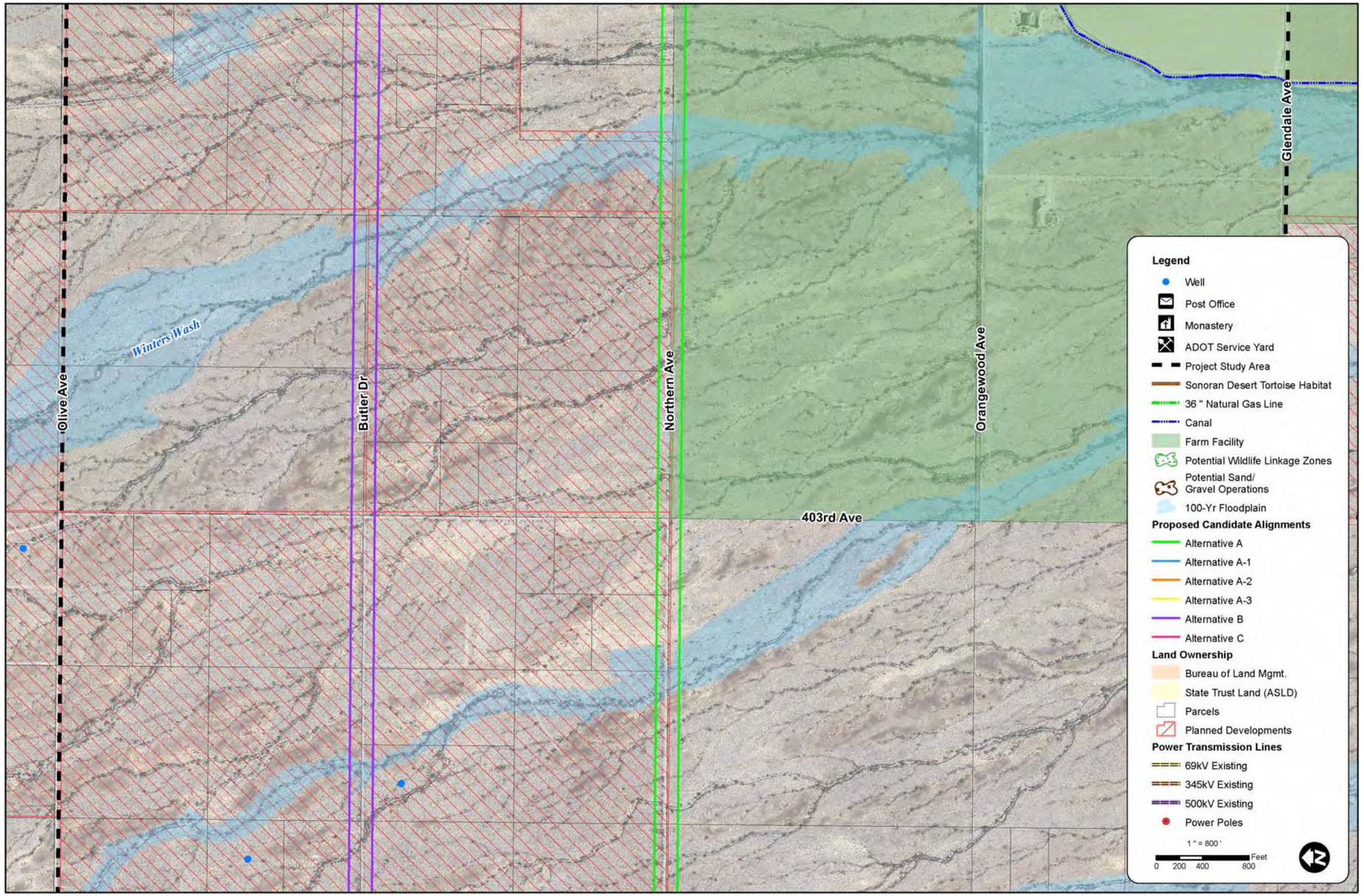

Figure 4E - Candidate Alternatives Schematic Drawings

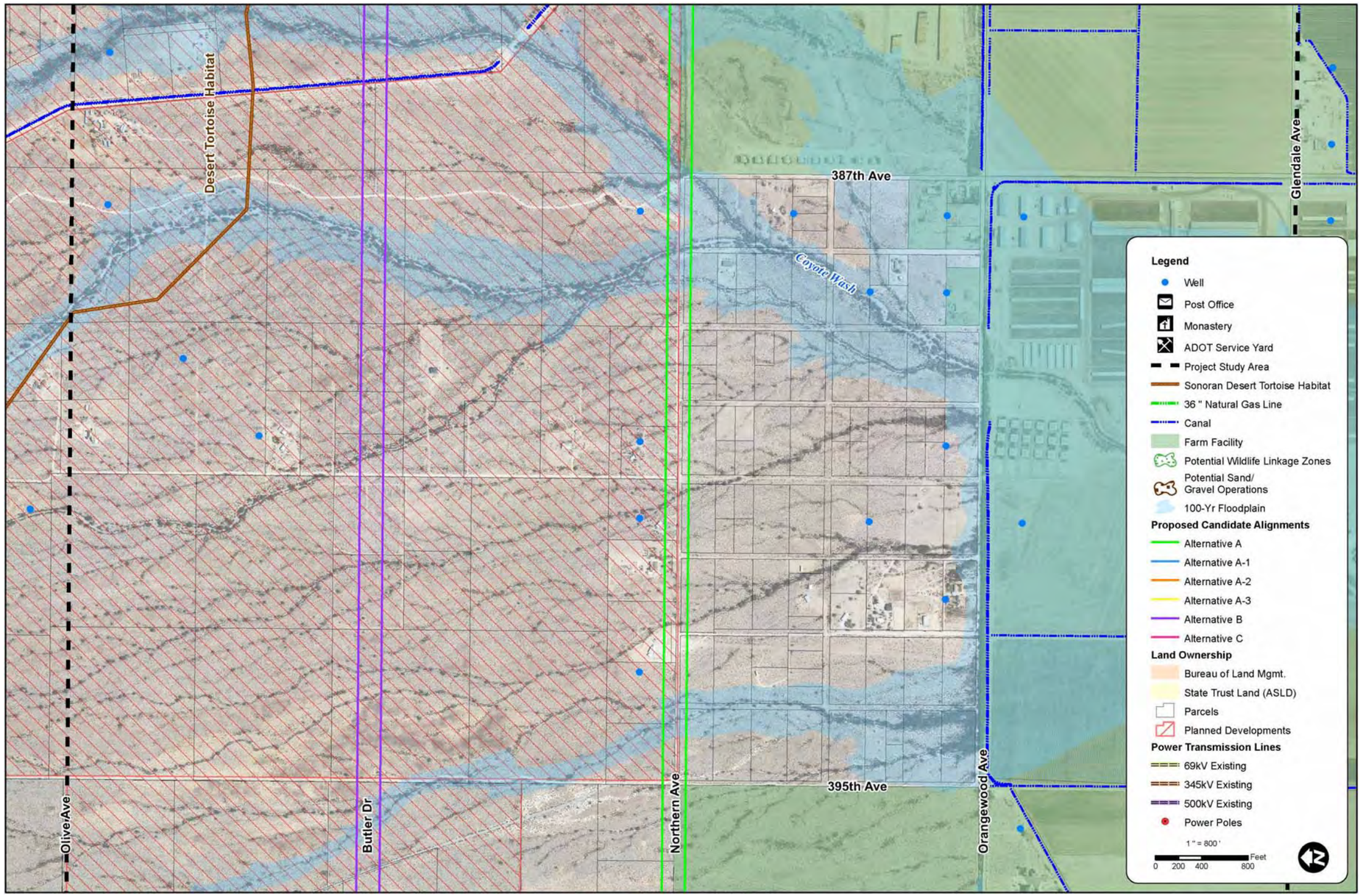

Figure 4F - Candidate Alternatives Schematic Drawings

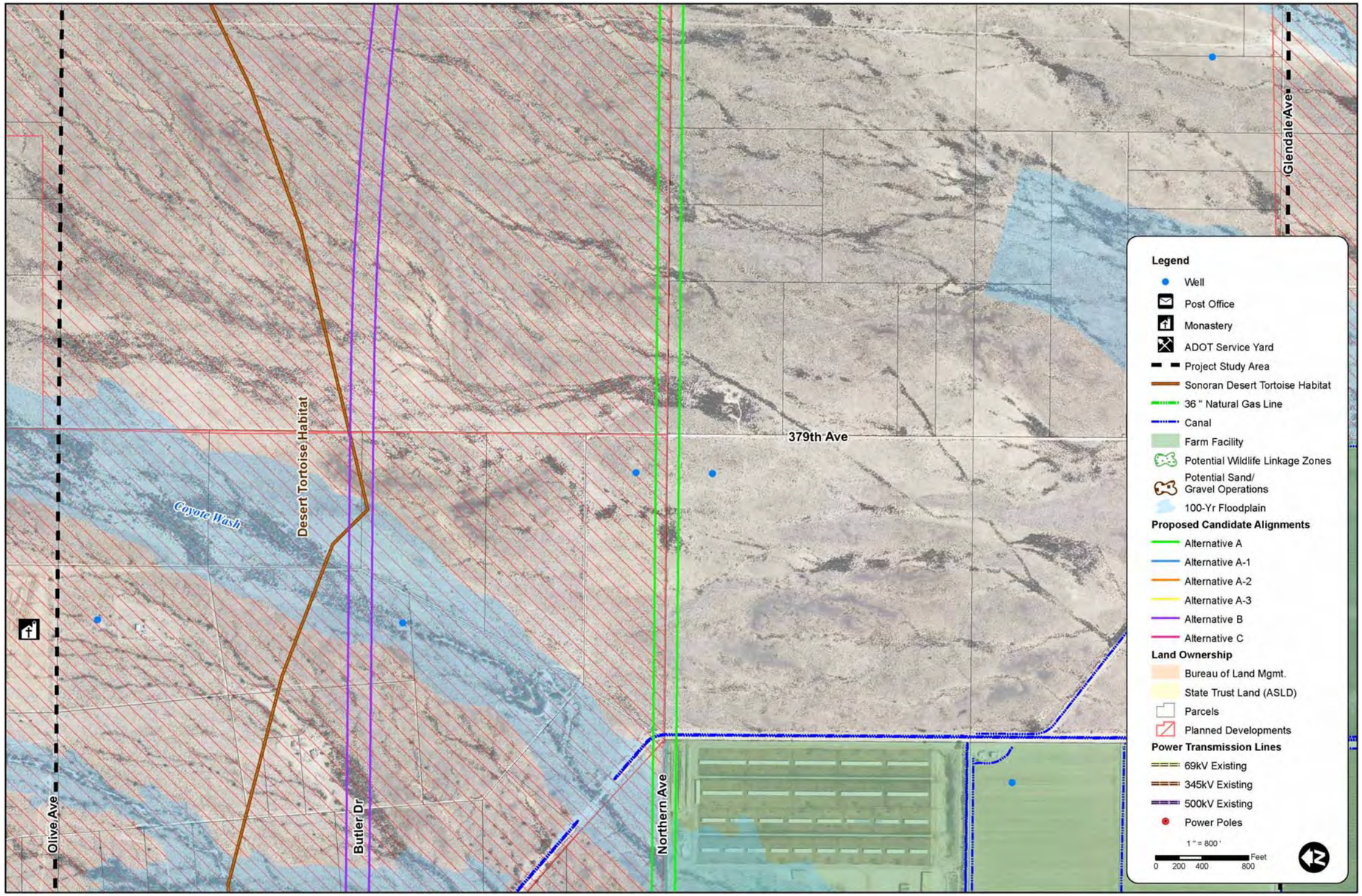

Figure 4G - Candidate Alternatives Schematic Drawings

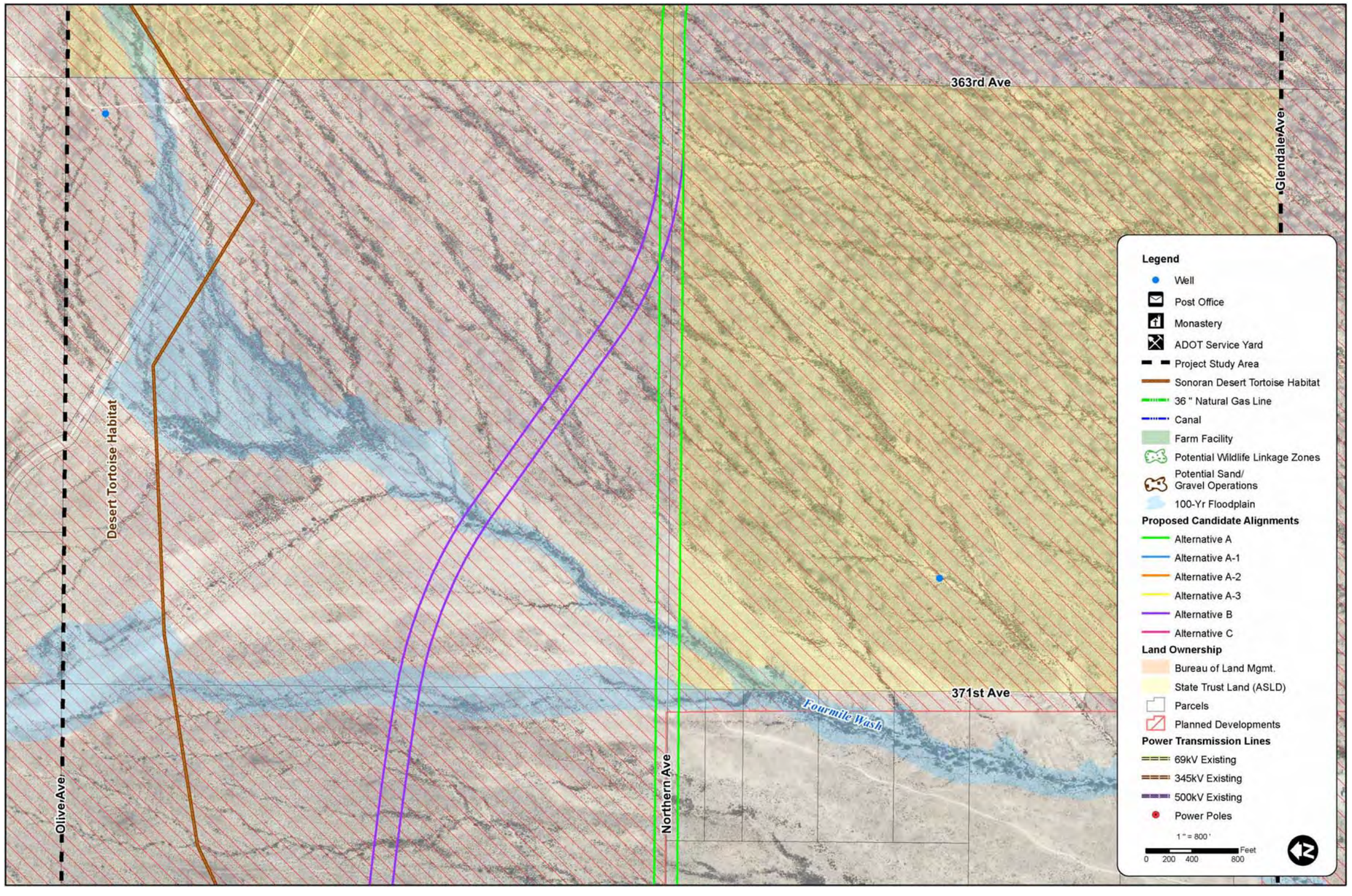

Figure 4H - Candidate Alternatives Schematic Drawings

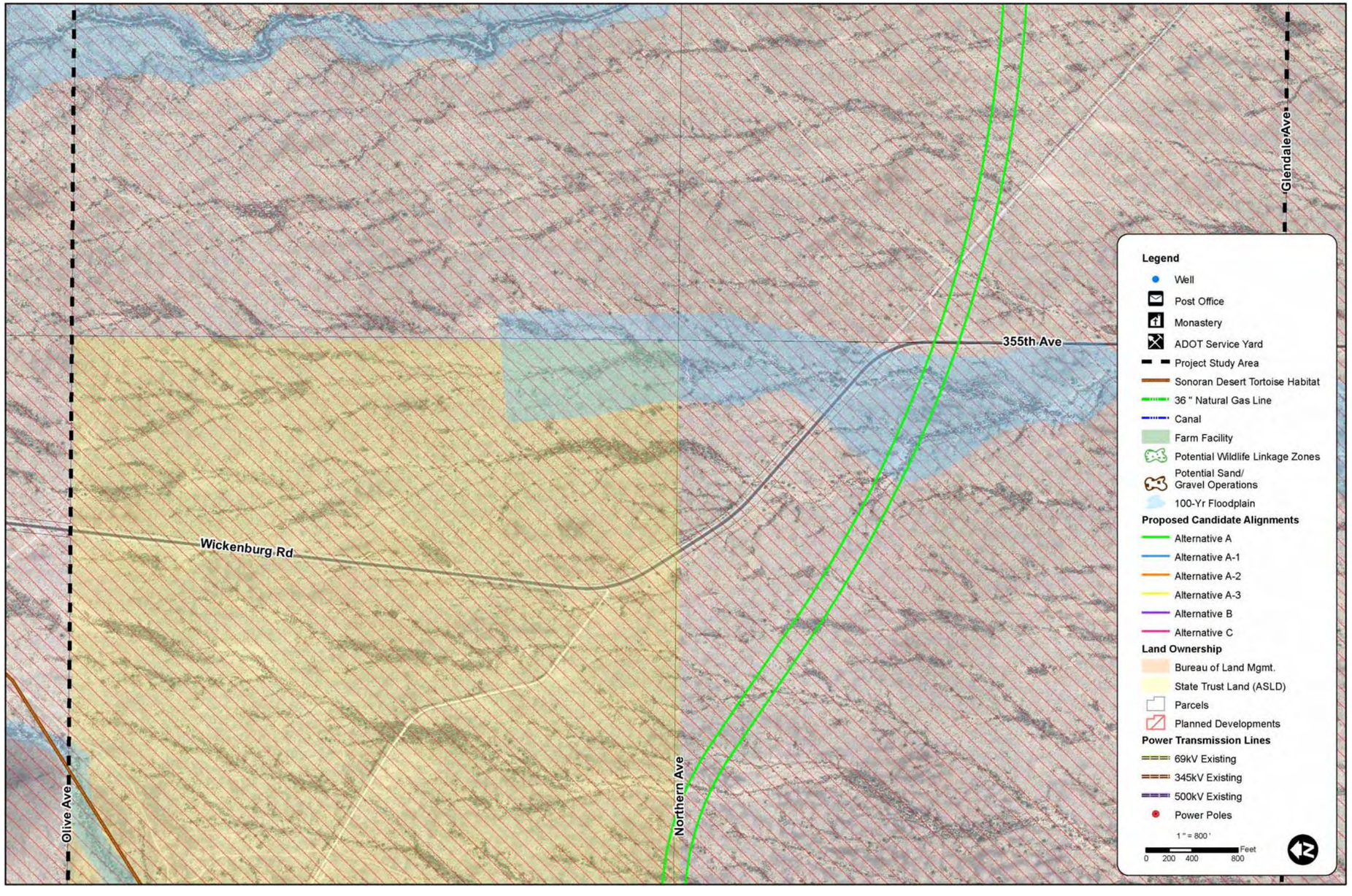

Figure 4I - Candidate Alternatives Schematic Drawings

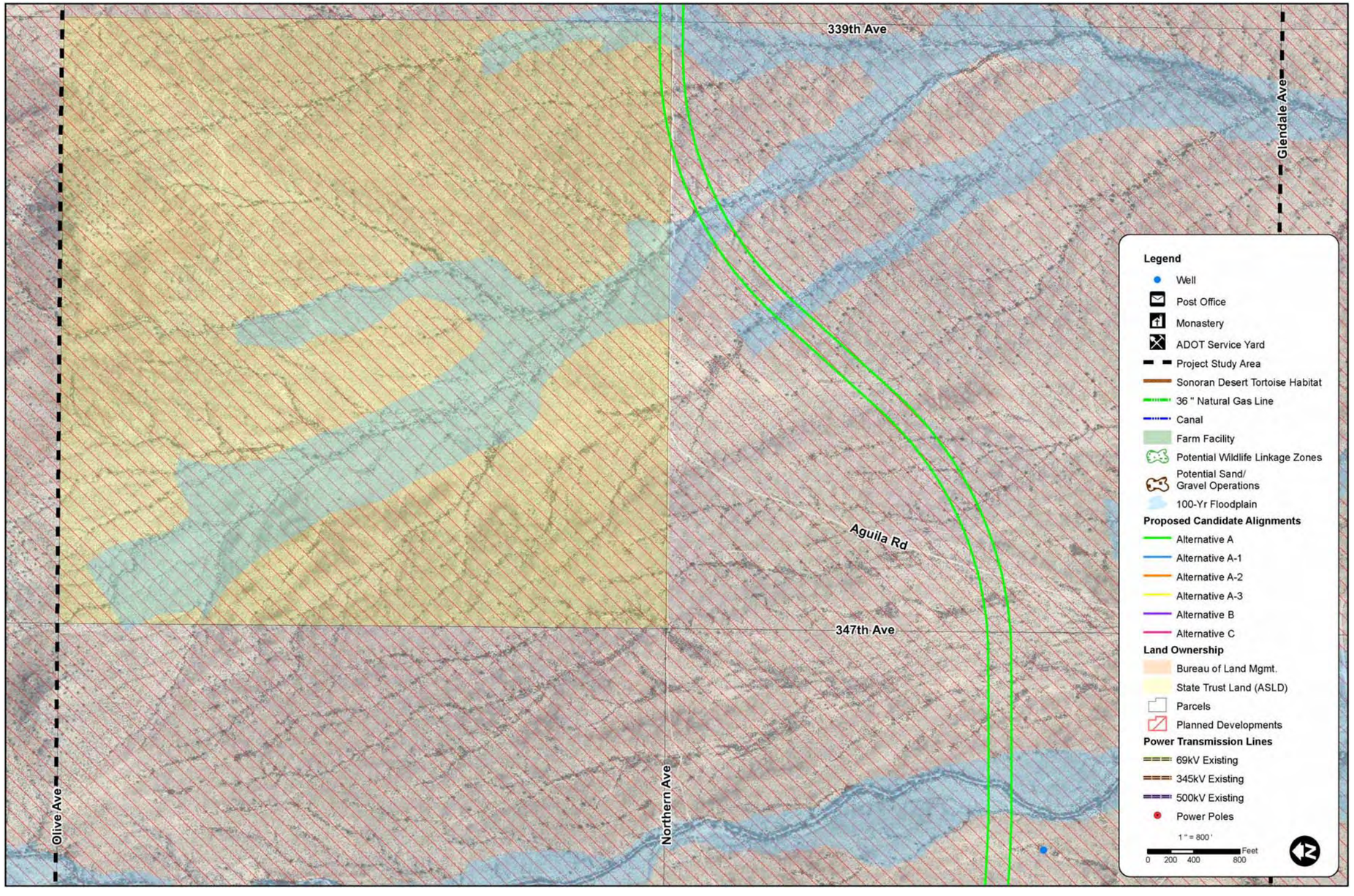

Figure 4J - Candidate Alternatives Schematic Drawings

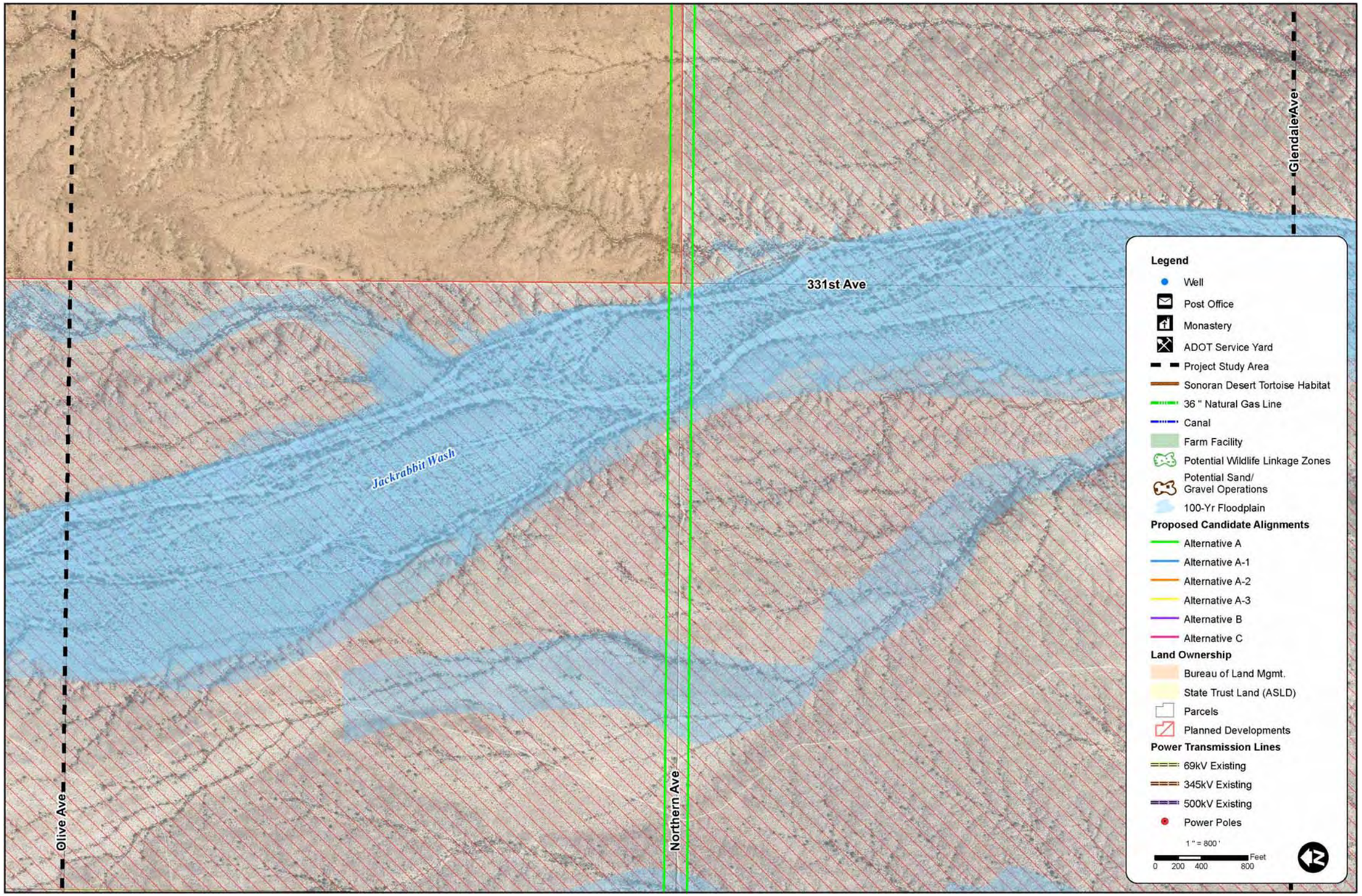

Figure 4K - Candidate Alternatives Schematic Drawings

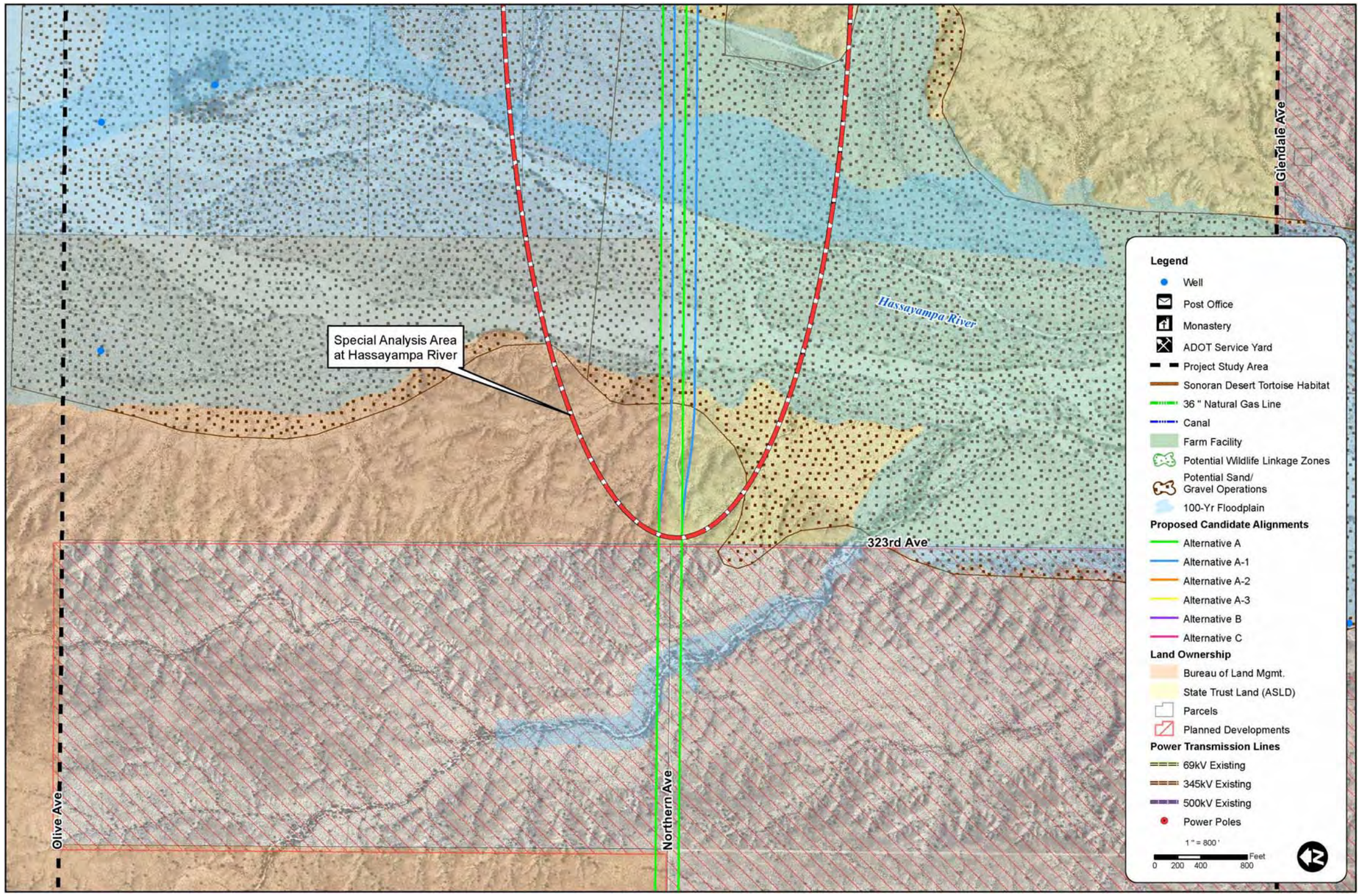

Figure 4L - Candidate Alternatives Schematic Drawings

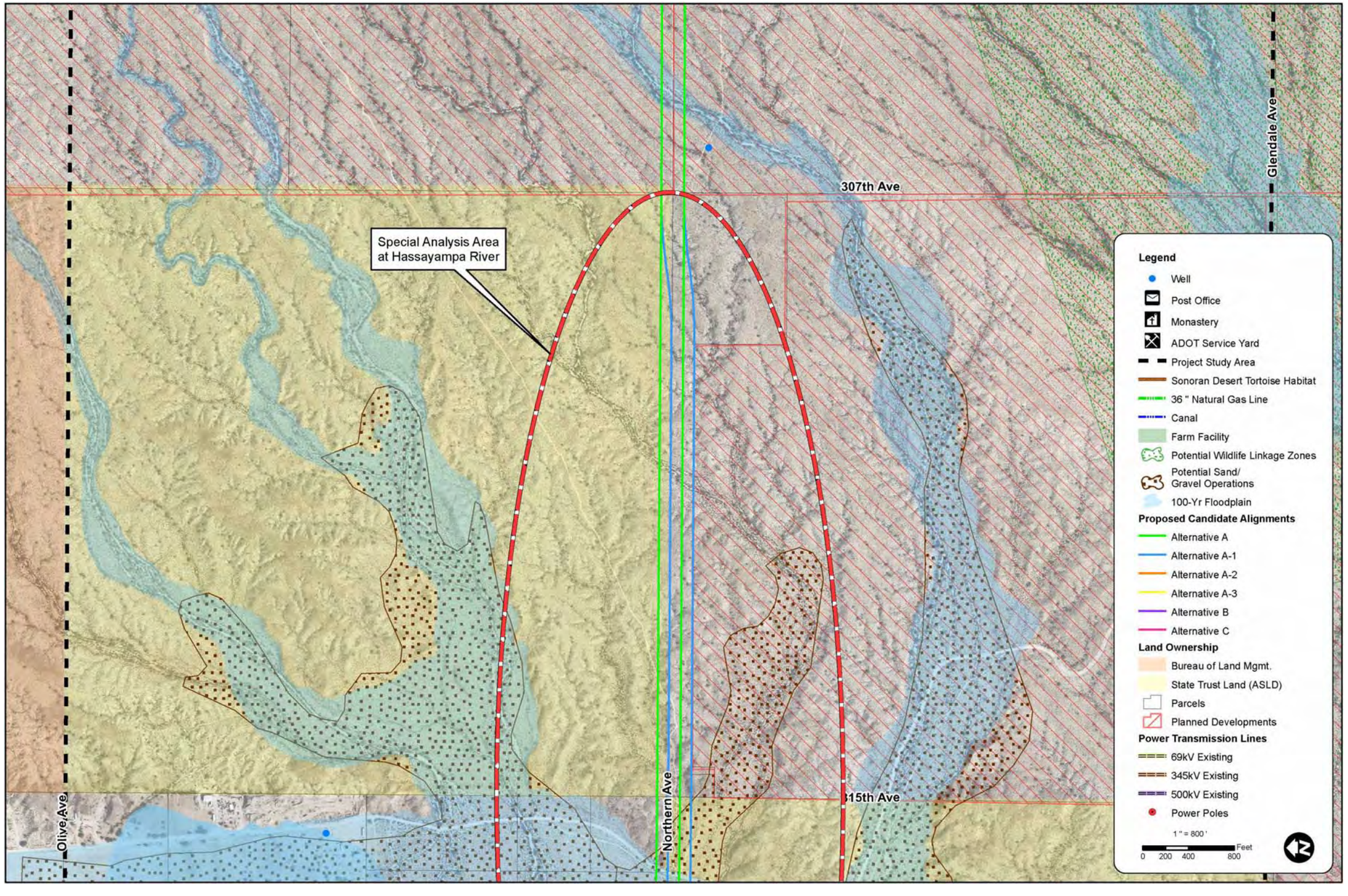

Figure 4M - Candidate Alternatives Schematic Drawings

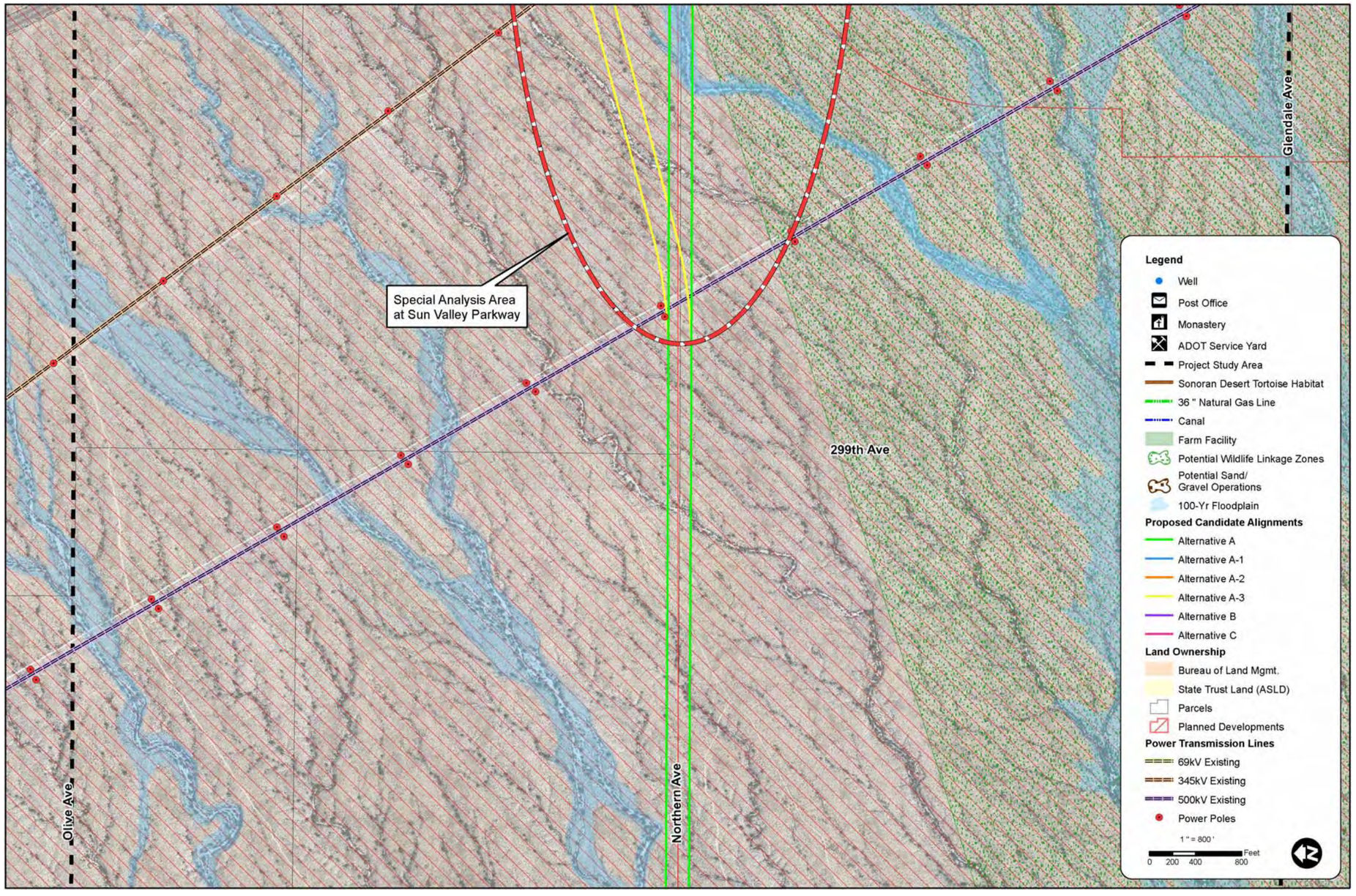

Figure 4N - Candidate Alternatives Schematic Drawings

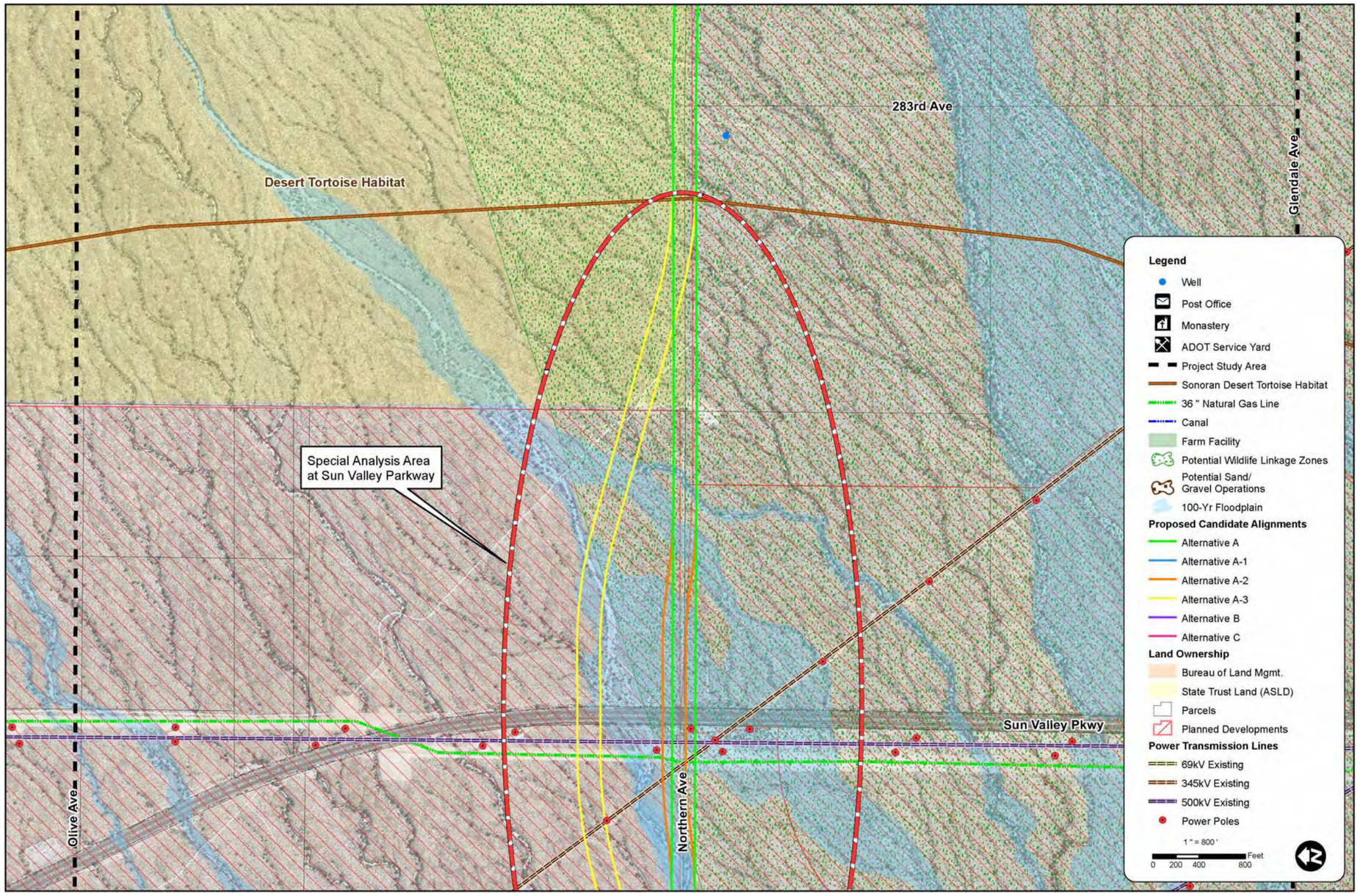

Figure 4O - Candidate Alternatives Schematic Drawings

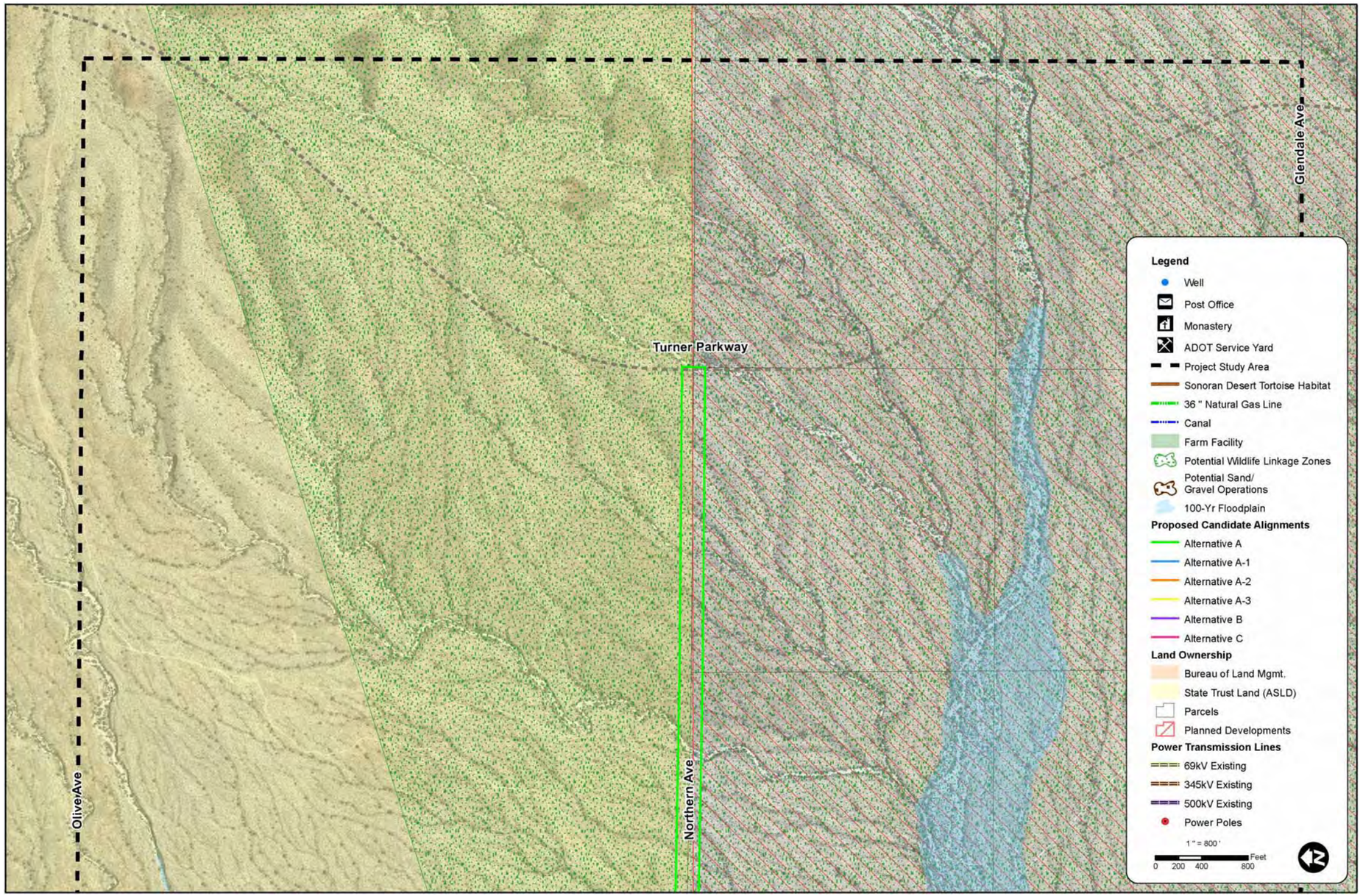

Figure 4P - Candidate Alternatives Schematic Drawings

3. EVALUATION OF CANDIDATE ALTERNATIVES

3.1 Evaluation Criteria

After performing the fatal flaw assessment of the conceptual alternatives and then narrowing the conceptual alternatives to three candidate alternative alignments for the Tonopah segment and two candidate alternatives for the Northern Parkway segment, the candidate alternatives, along with a "no-build" alternative, were evaluated against a number of criteria. The evaluation criteria included the following:

- *Future Development Compatibility* – This criterion addresses the impacts that each alternative has with respect to planned future development and whether or not the alternative is compatible with the planned development. For example, some planned developments in the corridor already show a 200-foot wide footprint for Northern Parkway along portions of Northern Avenue while other planned developments are based on a no-build or arterial street scenario. This criterion does not address the potential benefits of the parkway to future development, only whether or not the future development plan can accommodate Tonopah Parkway and Northern Parkway;
- *System Continuity and Capacity* – This criterion is a measure of how each alternative contributes to providing a continuous transportation link throughout the length of the corridor with sufficient capacity to serve projected build-out traffic volumes. It also includes consideration of the ability to connect with other existing and planned freeways, parkways, and arterial streets;
- *Drainage Impacts* – The Hassayampa River and numerous washes are located in the study area. In most cases, implementing a parkway facility will require new drainage structures, which will typically improve existing drainage patterns;
- *Irrigation Impacts* – With some irrigated farm land in the western portion of the study area, there may be some impact on irrigation facilities. In some cases, existing irrigation systems may need to be replaced with new (and more modern) facilities and would derive a benefit from the parkway project. In other cases, irrigation patterns may be negatively impacted, making it more difficult to continue irrigation service;
- *Building/Property Impacts* – There are a number of low density residential properties and agricultural properties that may be adversely impacted by the parkway project. Some residential buildings may have to be relocated or vacated and demolished, and some properties may be fully or partially acquired;
- *Wildlife Impacts* – There are wildlife habitats and linkage zones within the study area that will experience differing impacts depending on the alternative alignment;
- *Cultural/Archaeological Impacts* – Throughout the study area, there are a combination of known and potential cultural and archaeological sites. Some alternatives could have more adverse impacts than others on these resources. This criterion is limited to known cultural and archaeological sites. Further alignment-specific cultural and archaeological analyses will be needed to identify and mitigate unknown resources;
- *Utility Impacts* – Most existing utilities are located adjacent to existing transportation facilities, particularly near Sun Valley Parkway. Some combination of utility relocations and parkway alignment shifts will likely be required;
- *Public Acceptability* – Residents and landowners in the study area have differing opinions regarding the need and desirability of constructing new major roadways through the study

area. Public input received through the TAC, stakeholder, and open house meetings provides an indication of the general level of support for each alternative; and

- *Cost* – Some alternatives will have greater right-of-way, utility, drainage, and construction costs than others and can be evaluated on a comparative planning-level cost assessment.

3.2 Candidate Alternative Evaluation Results

Most of the evaluation criteria listed in the previous section do not lend themselves to numerical quantification, so the evaluation was performed on a "qualitative" basis using the following descriptors to describe the relative impacts of each alternative:

- Strong advantage;
- Advantage;
- Neutral;
- Disadvantage; and
- Strong disadvantage.

Table 1 provides a narrative description of the issues that pertain to each of the evaluation criteria for each of the Tonopah Parkway candidate alternatives and evaluation ratings according to the above descriptors. **Table 2** provides a similar narrative description for each of the Northern Parkway candidate alternatives. **Table 3** graphically summarizes the overall evaluation of the candidate alternatives.

A visual inspection of **Table 3** without applying any weighting factors to the criteria indicates that for the Tonopah Parkway segment, the No-Build Alternative and Alternative A have the most positive ratings (i.e., more Strong advantage and Advantage ratings and/or fewer Strong disadvantage and Disadvantage ratings). For the Northern Parkway segment, the No-Build Alternative and Alternative A have the most positive ratings.

Table 1 - Tonopah Parkway Candidate Alternatives Evaluation Matrix

Evaluation Criteria	No-Build Alternative	Alternative A	Alternative B	Alternative C
Future Development Compatibility	Within the Tonopah Parkway portion of the study area, the No-Build Alternative provides an existing two-lane paved roadway along 411th Avenue between the interchange with I-10 and Bethany Home Road and an existing two-lane unpaved roadway along 411th Avenue between Bethany Home Road and the planned Northern Parkway. There are three developments – Balterra, West Phoenix Estates 4, and Belmont Ranches – that make provisions for a major (i.e., rural minor arterial) roadway along 411th Avenue. Balterra plans to dedicate right-of-way (R/W) for a 65' half-street major roadway on the west side of the section line for 0.5 miles and on the east side of the section line for 0.2 miles. West Phoenix Estates 4 has dedicated R/W for a 55' half-street major roadway on the west side of the section line for 0.3 miles. Belmont Ranches has provided an easement for a 55' half-street major roadway on both the west and east sides of the section line for 1.0 mile. While a roadway does exist where development had assumed a roadway would be provided, the No-Build Alternative is not compatible with development in that the roadway surface is unpaved between Bethany Home Road and the planned Northern Parkway and in that the existing two-lane roadway is not the major roadway that was assumed by development. *Net Effect: Disadvantage*	Alternative A provides a 200' (100' half-street) parkway centered on the 411th Avenue section line. Balterra will be required to provide an additional 35' of half-street R/W on the west side of the section line for 0.5 miles and an additional 35' of half-street R/W on the east side of the section line for 0.2 miles. West Phoenix Estates 4 will be required to provide an additional 45' of half-street R/W on the west side of the section line for 0.3 miles. Belmont Ranches will be required to provide an additional 45' of half-street easement on both the west and east sides of the section line for up to 0.5 miles, depending on which Northern Parkway alignment is selected. Alternative A is generally compatible with development in that it results in a major roadway being provided in the general location assumed by development. Additional R/W or easements will be needed from development along 411th Avenue for the 200' (100' half-street) parkway because the parkway has a larger R/W footprint than was assumed by development. *Net Effect: Neutral*	Alternative B provides a 200' (100' half-street) parkway with a centerline shifted 35' to the west of the Alternative A centerline. Balterra will be required to provide an additional 70' of half-street R/W on the west side of the section line for 0.5 miles. West Phoenix Estates 4 will be required to provide an additional 80' of half-street R/W on the west side of the section line for 0.3 miles. Belmont Ranches will be required to provide an additional 80' of half-street easement on the west side of the section line and an additional 10' of half-street easement for up to 0.5 miles, depending on which Northern Parkway alignment is selected. Alternative B is generally compatible with development in that it results in a major roadway being provided in the general location assumed by development. Additional R/W or easements will be needed from development along 411th Avenue for the 200' (100' half-street) parkway because the parkway has a larger R/W footprint than was assumed by development. Alternative B will require more additional R/W or easements than Alternative A. *Net Effect: Disadvantage*	Alternative C provides a 200' (100' half-street) parkway with a centerline shifted 35' to the east of the Alternative A centerline. Balterra will be required to provide an additional 70' of half-street R/W on the east side of the section line for 0.2 miles. West Phoenix Estates 4 will be required to provide an additional 10' of half-street R/W on the west side of the section line for 0.3 miles. Belmont Ranches will be required to provide an additional 10' of half-street easement on the west side of the section line and an additional 80' of half-street easement for up to 0.5 miles, depending on which Northern Parkway alignment is selected. Alternative C is generally compatible with development in that it results in a major roadway being provided in the general location assumed by development. Additional R/W or easements will be needed from development along 411th Avenue for the 200' (100' half-street) parkway because the parkway has a larger R/W footprint than was assumed by development. Alternative C will require less additional R/W or easements than Alternative A. *Net Effect: Advantage*
System Continuity and Capacity	The No-Build Alternative provides an existing two-lane roadway within the Tonopah Parkway portion of the study area along 411th Avenue that is paved south of Bethany Home Road and unpaved north of Bethany Home Road. The Maricopa Association of Governments Hassayampa Framework Study has shown a long-term need for a parkway, called the Tonopah Parkway, in the general vicinity of 411th Avenue to serve long-term traffic needs. The No-Build Alternative does not conform to the intent of the Hassayampa Framework Study's recommended roadway network connectivity and does not adequately serve long-term traffic needs. *Net Effect: Strong disadvantage*	Alternative A conforms with the intent of the Hassayampa Framework Study's recommended roadway network connectivity by providing a parkway along the general Tonopah Parkway alignment that connects I-10 to Northern Parkway. Alternative A adequately serves projected long-term traffic needs. The centerline of Alternative A aligns with the centerline of the existing I-10/411th Avenue interchange. *Net Effect: Advantage*	Alternative B conforms with the intent of the Hassayampa Framework Study's recommended roadway network connectivity by providing a parkway along the general Tonopah Parkway alignment that connects I-10 to Northern Parkway. Alternative B adequately serves projected long-term traffic needs. The centerline of Alternative B is shifted 35' west of the centerline of the existing I-10/411th Avenue interchange. A transition segment will be needed to connect the two centerlines. *Net Effect: Advantage*	Alternative C conforms with the intent of the Hassayampa Framework Study's recommended roadway network connectivity by providing a parkway along the general Tonopah Parkway alignment that connects I-10 to Northern Parkway. Alternative C adequately serves projected long-term traffic needs. The centerline of Alternative C is shifted 35' east of the centerline of the existing I-10/411th Avenue interchange. A transition segment will be needed to connect the two centerlines. *Net Effect: Advantage*
Drainage Impacts	Old Camp Wash and several other smaller, unnamed washes carry water through the Tonopah Parkway portion of the study area and across 411th Avenue during flood events, causing roadway erosion and sedimentation. The No-Build Alternative does not provide a continuous all-weather roadway, will not correct any of the identified drainage issues, and could result in additional future adverse impacts from drainage issues such as roadway erosion and sedimentation. *Net Effect: Disadvantage*	Alternative A provides a continuous all-weather roadway that will include culverts to convey cross-drainage at smaller washes and structures to convey cross-drainage at larger washes such as Old Camp Wash, improving cross-drainage and better controlling drainage flows. *Net Effect: Advantage*	Alternative B provides a continuous all-weather roadway that will include culverts to convey cross-drainage at smaller washes and structures to convey cross-drainage at larger washes such as Old Camp Wash, improving cross-drainage and better controlling drainage flows. *Net Effect: Advantage*	Alternative C provides a continuous all-weather roadway that will include culverts to convey cross-drainage at smaller washes and structures to convey cross-drainage at larger washes such as Old Camp Wash, improving cross-drainage and better controlling drainage flows. *Net Effect: Advantage*
Irrigation Impacts	The irrigation facilities identified in the Tonopah Parkway portion of the study area include two small east-west irrigation canals that intersect 411th Avenue and seven wells located adjacent to 411th Avenue, most of which are associated with the agricultural land on the west side of 411th Avenue between Camelback Road and Missouri Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on existing irrigation canals or wells. *Net Effect: Neutral*	Alternative A will likely require the relocation or reconfiguration of small sections of the two irrigation canals and the possible relocation of some wells if these facilities still exist when the parkway is implemented. The build-out land use plan assumes the existing agricultural land on the west side of 411th Avenue will ultimately be converted to residential land uses. *Net Effect: Disadvantage*	Alternative B will likely require the relocation or reconfiguration of small sections of the two irrigation canals and the possible relocation of some wells if these facilities still exist when the parkway is implemented. The build-out land use plan assumes the existing agricultural land on the west side of 411th Avenue will ultimately be converted to residential land uses. *Net Effect: Disadvantage*	Alternative C will likely require the relocation or reconfiguration of small sections of the two irrigation canals and the possible relocation of some wells if these facilities still exist when the parkway is implemented. The build-out land use plan assumes the existing agricultural land on the west side of 411th Avenue will ultimately be converted to residential land uses. *Net Effect: Disadvantage*

Table 1 - Tonopah Parkway Candidate Alternatives Evaluation Matrix (continued)

Evaluation Criteria	No-Build Alternative	Alternative A	Alternative B	Alternative C
Building/Property Impacts	Buildings exist in the Tonopah Parkway portion of the study area primarily between Camelback Road and Glendale Avenue. There are 56 parcels adjacent to 411th Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on adjacent buildings or properties. *Net Effect: Neutral*	Alternative A is not anticipated to impact any existing buildings. Alternative A will likely require R/W acquisition from all 56 adjacent parcels, including 3 full parcel acquisitions. *Net Effect: Disadvantage*	Alternative B will likely require the relocation/purchase of one existing residential building. Alternative B will likely require R/W acquisition from all 56 adjacent parcels, including 9 full property acquisitions. *Net Effect: Strong disadvantage*	Alternative C will likely require the relocation/purchase of one existing residential building. Alternative C will likely require R/W acquisition from all 56 adjacent parcels, including 5 full property acquisitions. *Net Effect: Strong disadvantage*
Wildlife Impacts	The Tonopah Parkway portion of the study area contains the PLZ – 64 Bighorn Belmont-Saddle Mountain potential wildlife linkage zone. 411th Avenue is the eastern limit of this PLZ. 411th Avenue does not currently provide wildlife crossing treatments, but wildlife-vehicle conflicts have not been identified as a common occurrence on 411th Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on wildlife. *Net Effect: Neutral*	Alternative A will result in a wider roadway footprint than currently exists, increasing the crossing distance for wildlife. This increase in crossing distance could be mitigated to some degree by incorporating wildlife crossing treatments, such as overpasses or underpasses, into the new roadway design, particularly at wash crossings like Old Camp Wash. *Net Effect: Disadvantage*	Alternative B will result in a wider roadway footprint than currently exists, increasing the crossing distance for wildlife. This increase in crossing distance could be mitigated to some degree by incorporating wildlife crossing treatments, such as overpasses or underpasses, into the new roadway design, particularly at wash crossings like Old Camp Wash. *Net Effect: Disadvantage*	Alternative C will result in a wider roadway footprint than currently exists, increasing the crossing distance for wildlife. This increase in crossing distance could be mitigated to some degree by incorporating wildlife crossing treatments, such as overpasses or underpasses, into the new roadway design, particularly at wash crossings like Old Camp Wash. *Net Effect: Disadvantage*
Cultural/Archaeological Impacts	There are identified cultural or archaeological resources within the Tonopah Parkway portion of the study area, particularly between Camelback Road and I-10, however none of the identified cultural or archaeological resources are along 411th Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on identified cultural or archaeological resources. It should be noted that approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources. *Net Effect: Neutral*	Alternative A will not have any positive or negative impacts on identified cultural or archaeological resources. Because approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources, it is possible that future surveys conducted as Alternative A is designed could potentially identify additional cultural or archaeological resources that could be impacted by Alternative A. *Net Effect: Disadvantage*	Alternative B will not have any positive or negative impacts on identified cultural or archaeological resources. Because approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources, it is possible that future surveys conducted as Alternative B is designed could potentially identify additional cultural or archaeological resources that could be impacted by Alternative B. *Net Effect: Disadvantage*	Alternative C will not have any positive or negative impacts on identified cultural or archaeological resources. Because approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources, it is possible that future surveys conducted as Alternative C is designed could potentially identify additional cultural or archaeological resources that could be impacted by Alternative C. *Net Effect: Disadvantage*
Utility Impacts	The existing major utilities identified as being located within the Tonopah Parkway portion of the study area include 12kV electrical lines going along the west side of 411th Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on identified utilities. *Net Effect: Neutral*	Alternative A will require relocation of the existing 12kV electrical lines along 411th Avenue. *Net Effect: Disadvantage*	Alternative B will require relocation of the existing 12kV electrical lines along 411th Avenue. *Net Effect: Disadvantage*	Alternative C will require relocation of the existing 12kV electrical lines along 411th Avenue. *Net Effect: Disadvantage*
Public Acceptability	While some residents and property owners have expressed concerns about wildlife impacts, noise impacts, and property tax impacts associated with new/improved roadways, there is more public support for improving roadways in the area to reduce dust pollution, provide all-weather crossings of washes, and to improve property access/and property values. The No-Build Alternative will not provide the general benefits that the public desires. *Net Effect: Disadvantage*	Because Alternative A is centered on the 411th Avenue section line, it will have the most equitable impacts on adjacent properties. In general, there is more public support for Alternative A than any of the other alternatives. *Net Effect: Advantage*	While Alternative B will have more impacts on adjacent properties on the west side of 411th Avenue than any of the other alternatives, no objections were received from any property owners. *Net Effect: Disadvantage*	While Alternative C will have more impacts on adjacent properties on the east side of 411th Avenue than any of the other alternatives, no objections were received from any property owners. *Net Effect: Disadvantage*
Cost	The No-Build Alternative will not require right-of-way or construction costs but it will require continued on-going maintenance costs related to cross-drainage, pavement restoration, and dust control. *Net Effect: Neutral*	Alternative A will require right-of-way, construction, and maintenance costs that are similar to the costs of Alternative B and Alternative C. *Net Effect: Disadvantage*	Alternative B will require right-of-way, construction, and maintenance costs that are similar to the costs of Alternative A and Alternative C. *Net Effect: Disadvantage*	Alternative C will require right-of-way, construction, and maintenance costs that are similar to the costs of Alternative A and Alternative B. *Net Effect: Disadvantage*

Table 2 - Northern Parkway Candidate Alternatives Evaluation Matrix

Evaluation Criteria	No-Build Alternative	Alternative A	Alternative B
Future Development Compatibility	The No-Build Alternative does not provide an existing paved roadway through the Northern Parkway portion of the study area. There are a few existing unpaved sections of two-lane roadway, such as between 411th Avenue and 387th Avenue. There are eleven developments along the Northern Avenue section line that make provisions for a major (i.e., arterial or parkway) roadway along the Northern Avenue section line. In the western section of the study area (i.e., west of 379th Avenue), the five developments have generally provided an easement for a 33' half-street major roadway along the section line. In the middle section (i.e., between 379th Avenue and 323rd Avenue), Belmont plans to dedicate right-of-way (R/W) for a 100' half-street major roadway along the section line except for a three-mile segment that dips south of the section line between 363rd Avenue and 339th Avenue where Belmont plans to dedicate R/W for a 200' full-street major roadway. In the eastern section (i.e., east of 323rd Avenue), most of the five developments plan to dedicate R/W for a 65' or 100' half-street major roadway along the section line. The No-Build Alternative is not compatible with development in that the major roadway that was assumed by development does not exist. *Net Effect: Strong disadvantage*	Alternative A provides a 200' parkway centered on the Northern Avenue section line except for a three-mile dip to the south within the Belmont development. In the western section of the study area, the developments will generally be required to provide an additional 67' of half-street easement. In the middle section, Belmont will not need to dedicate any additional R/W as Alternative A matches the roadway alignment and 200' R/W width shown in the Belmont community master plan. In the eastern section, the developments will generally be required to dedicate an additional 35' of half-street R/W, although Sun Valley Villages III and IV will not need to dedicate any additional R/W as Alternative A matches the roadway alignment and 200' R/W width shown in the Sun Valley Villages III and IV community master plan. Alternative A is generally compatible with development in that it results in a major roadway being provided in the general location assumed by development. Additional R/W or easements will be needed from development along the Northern Avenue section line for the 200' parkway because the parkway has a larger R/W footprint than was assumed by development. *Net Effect: Advantage*	Alternative B provides a 200' parkway with a centerline shifted one-half mile to the north of the Alternative A centerline between the planned Tonopah Parkway and 371st Avenue. Alternative B has a curved segment between 371st Avenue and 363rd Avenue that brings the Alternative B alignment down to the Northern Avenue section line just west of 363rd Avenue. From that point east, Alternative B follows the same alignment as Alternative A. In the western section of the study area, only two of the five developments make provisions for a roadway along the Butler Avenue alignment. Those two developments have provided an easement for a 33' half-street roadway and as such would be required to provide an additional 67' of half-street easement for Alternative B. The other three developments in the western section do not make provisions for a roadway along the Butler Avenue alignment and as such would be required to provide 100' of half-street easement for Alternative B. In the middle section, Belmont does not make provisions for a curved roadway from the Butler Avenue alignment to the Northern Avenue alignment between 371st Avenue and 363rd Avenue and as such would be required to provide 100' of half-street R/W. For the remainder of the middle section, Belmont will not need to dedicate any additional R/W as Alternative B matches the roadway alignment and 200' R/W width shown in the Belmont community master plan. In the eastern section, the developments will generally be required to dedicate an additional 35' of half-street R/W, although Sun Valley Villages III and IV will not need to dedicate any additional R/W as Alternative B matches the roadway alignment and 200' R/W width shown in their development master plans. Alternative B, where it differs from Alternative A, is generally not compatible with development in that it results in a major roadway being provided where a roadway had not been assumed by development. Additional R/W or easements will be needed along the Butler Avenue alignment and Northern Avenue section line for the 200' parkway because the parkway has a larger R/W footprint than was assumed by development. Alternative B will require more additional R/W or easements than Alternative A. *Net Effect: Disadvantage*
System Continuity and Capacity	The No-Build Alternative does not provide an existing paved roadway through the Northern Parkway portion of the study area. The Maricopa Association of Governments Hassayampa Framework Study has shown a long-term need for a parkway, called the Northern Parkway, in the general vicinity of the Northern Avenue section line to serve long-term traffic needs. The No-Build Alternative does not conform to the intent of the Hassayampa Framework Study's recommended roadway network connectivity and does not adequately serve long-term traffic needs. *Net Effect: Strong disadvantage*	Alternative A conforms with the intent of the Hassayampa Framework Study's recommended roadway network connectivity by providing a parkway along the general Northern Parkway alignment that connects Tonopah Parkway to Turner Parkway. Interchanges would be accommodated at all proposed intersecting parkways and freeways. Alternative A adequately serves projected long-term traffic needs. *Net Effect: Strong advantage*	Alternative B conforms with the intent of the Hassayampa Framework Study's recommended roadway network connectivity by providing a parkway along the general Northern Parkway alignment that connects Tonopah Parkway to Turner Parkway. Interchanges would be accommodated at all proposed intersecting parkways and freeways. Alternative B adequately serves projected long-term traffic needs. The alignment of the western section of Alternative B is shifted one-half mile north of the Northern Avenue section line, resulting in one mile of out-of-direction travel for those traveling between 411th Avenue and 363rd Avenue. *Net Effect: Advantage*
Drainage Impacts	Winters Wash, Coyote Wash, Fourmile Wash, Phillips Wash, Jackrabbit Wash, the Hassayampa River, White Tank Wash, and several smaller, unnamed washes carry water through the Northern Parkway portion of the study area during flood events. Major existing drainage issues that have been identified include wide floodplains at Jackrabbit Wash and the Hassayampa River, high flood hazard zones near the Hassayampa River and White Tank Wash, alluvial fan flooding, diversion of pending floodplain flows at Coyote Wash, high sediment loads associated with Jackrabbit Wash, the Hassayampa River, and the alluvial fans, and lateral erosion. The No-Build Alternative does not provide a continuous all-weather roadway, will not correct any of the identified drainage issues, and could result in additional future adverse impacts from drainage issues such as lateral erosion. *Net Effect: Strong disadvantage*	Alternative A provides a continuous all-weather roadway that will include culverts to convey cross-drainage at smaller washes and structures to convey cross-drainage at larger washes and at the Hassayampa River, improving cross-drainage and better controlling drainage flows. A bridge over the Hassayampa River could impact potential future sand and gravel operations within the river bed one mile upstream and two miles downstream of the bridge. Alternative A passes through several high flood hazard zones, which could require significant channelization as part of the construction of the roadway to further control drainage flows. *Net Effect: Advantage*	Alternative B provides a continuous all-weather roadway that will include culverts to convey cross-drainage at smaller washes and structures to convey cross-drainage at larger washes and at the Hassayampa River, improving cross-drainage and better controlling drainage flows. A bridge over the Hassayampa River could impact potential future sand and gravel operations within the river bed one mile upstream and two miles downstream of the bridge. Alternative B passes through several high flood hazard zones, which could require significant channelization as part of the construction of the roadway to further control drainage flows. *Net Effect: Advantage*

Table 2 - Northern Parkway Candidate Alternatives Evaluation Matrix (continued)

Evaluation Criteria	No-Build Alternative	Alternative A	Alternative B
Irrigation Impacts	The Tonopah Canal crosses through the Northern Parkway portion of the study area between 387th Avenue and 379th Avenue and provides irrigation to the existing agricultural land on the south side of the Northern Avenue section line. Thirty-five wells were identified as being located within the Northern Parkway portion of the study area. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on existing irrigation canals or wells. *Net Effect: Neutral*	Alternative A will likely require a bridge or siphon where the parkway crosses the Tonopah Canal at the Northern Avenue section line. While not anticipated, it is possible that there may be a need to relocate some wells near the Alternative A alignment if these facilities still exist when the parkway is implemented. The build-out land use plan assumes the land adjacent to the Northern Avenue section line will ultimately be converted to residential land uses. *Net Effect: Disadvantage*	Alternative B will likely require a bridge or siphon where the parkway crosses the Tonopah Canal at the Butler Avenue alignment. While not anticipated, it is possible that there may be a need to relocate some wells near the Alternative B alignment if these facilities still exist when the parkway is implemented. The build-out land use plan assumes the land adjacent to the Butler Avenue alignment will ultimately be converted to residential land uses. *Net Effect: Disadvantage*
Building/Property Impacts	Buildings exist in the Northern Parkway portion of the study area between 395th Avenue and 387th Avenue. There are 67 private parcels adjacent to the Northern Avenue section line plus 6 State Land properties and 2 Bureau of Land Management (BLM) properties. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on buildings or properties. *Net Effect: Neutral*	Alternative A will likely require the relocation/purchase of one existing residential building. Alternative A will likely require R/W acquisition from all of the 67 adjacent private parcels, the 6 State Land properties, and the 2 BLM properties. Much of the required R/W has already been set aside, or is planned to be dedicated. *Net Effect: Disadvantage*	Alternative B is not anticipated to impact any existing buildings. Alternative B will likely require R/W acquisition from 54 adjacent private parcels, the 6 State Land properties, and the 2 BLM properties. Most of the required R/W for the western section of Alternative B has not already been set aside, or is not planned to be dedicated. Much of the required R/W for the other sections of Alternative B has already been set aside, or is planned to be dedicated. *Net Effect: Disadvantage*
Wildlife Impacts	The Northern Parkway portion of the study area contains Sonoran Desert Tortoise Habitat north of Butler Avenue between 387th Avenue and 363rd Avenue and east of 411th Avenue. It also contains the PLZ – 65 White Tanks-Hassayampa River potential wildlife linkage zone. Wildlife-vehicle conflicts have not been identified as a common occurrence in the Northern Parkway portion of the study area. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on wildlife. *Net Effect: Neutral*	Alternative A will result in a new roadway along the Northern Avenue section line that creates a barrier to wildlife crossings. Most potential wildlife-vehicle conflicts are anticipated to occur along the segment of Alternative A between Sun Valley Parkway and Turner Parkway. The adverse impacts of the roadway barrier could be mitigated to some degree by incorporating wildlife crossing treatments, such as overpasses or underpasses, into the new roadway design, particularly at drainage crossings like Jackrabbit Wash, the Hassayampa River, and White Tank Wash. *Net Effect: Disadvantage*	Alternative B will result in a new roadway along Butler Avenue and the Northern Avenue section line that creates a barrier to wildlife crossings. Most potential wildlife-vehicle conflicts are anticipated to occur along the segment of Alternative B near 379th Avenue and between Sun Valley Parkway and Turner Parkway. The adverse impacts of the roadway barrier could be mitigated to some degree by incorporating wildlife crossing treatments, such as overpasses or underpasses, into the new roadway design, particularly at drainage crossings like Coyote Wash, Jackrabbit Wash, the Hassayampa River, and White Tank Wash. *Net Effect: Disadvantage*
Cultural/Archaeological Impacts	There are identified cultural or archaeological resources within the Northern Parkway portion of the study area, particularly along 395th Avenue and between 379th Avenue and 363rd Avenue. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on identified cultural or archaeological resources. It should be noted that approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources. *Net Effect: Neutral*	Alternative A could potentially impact identified cultural or archaeological resources along the Alternative A alignment near 395th Avenue and near 371st Avenue. Because approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources, it is possible that future surveys conducted as Alternative A is designed could potentially identify additional cultural or archaeological resources that could be impacted by Alternative A. *Net Effect: Disadvantage*	Alternative B could potentially impact identified cultural or archaeological resources along the Alternative B alignment between 379th Avenue and 363rd Avenue. Because approximately 50 percent of the study area has not been surveyed for cultural or archaeological resources, it is possible that future surveys conducted as Alternative B is designed could potentially identify additional cultural or archaeological resources that could be impacted by Alternative B. *Net Effect: Disadvantage*
Utility Impacts	The existing major utilities identified as being located within the Northern Parkway portion of the study area include 12kV electrical lines going along the Northern Avenue section line between 395th Avenue and 387th Avenue, 345kV and 500kV electrical lines going diagonally across the study area and intersecting the Northern Avenue section line at Sun Valley Parkway, and 500kV electrical lines and a 36" natural gas pipeline going along the west side of Sun Valley Parkway. The No-Build Alternative does not change the current status and therefore will not have positive or negative impacts on identified utilities. *Net Effect: Neutral*	Alternative A will require relocation of the existing 12kV electrical lines going along the Northern Avenue section line between 395th Avenue and 387th Avenue. The alignment of Alternative A conflicts with the 500kV electrical line at Sun Valley Parkway, requiring relocation of at least one 500kV electrical line tower or a slight modification to the alignment of Alternative A. A more detailed special analysis is needed to further assess the potential impacts of the alignment of Alternative A on the 500kV electrical line towers at Sun Valley Parkway. *Net Effect: Disadvantage*	Alternative B, like Alternative A, will require relocation of at least one 500kV electrical line tower or a slight modification to the alignment of Alternative B at Sun Valley Parkway. A more detailed special analysis is needed to further assess the potential impacts of the alignment of Alternative B on the 500kV electrical line towers at Sun Valley Parkway. *Net Effect: Disadvantage*
Public Acceptability	While some residents and property owners have expressed concerns about wildlife impacts, noise impacts, and property tax impacts associated with new/improved roadways, there is more public support for improving roadways in the area to reduce dust pollution, provide all-weather crossings of washes, and to improve property access/property values. The No-Build Alternative will not provide the general benefits that the public desires. *Net Effect: Disadvantage*	Alternative A received the most public support because it generally follows the Northern Avenue section line and is the most consistent/compatible with adjacent subdivisions and development master plans. *Net Effect: Advantage*	There was no public support for Alternative B because it is not located on an arterial street section line, will cause additional out-of-direction travel, and is not consistent with adjacent subdivisions and development master plans. *Net Effect: Disadvantage*
Cost	The No-Build Alternative will not require right-of-way, construction, or maintenance costs within the Northern Parkway portion of the study area. *Net Effect: Advantage*	Alternative A will require right-of-way, construction, and maintenance costs that are less than the costs of Alternative B. *Net Effect: Disadvantage*	Alternative B will require right-of-way, construction, and maintenance costs that are more than the costs of Alternative A. *Net Effect: Strong disadvantage*

Table 3 - Candidate Alternatives Evaluation Matrix Summary

Evaluation Criteria	Tonopah Parkway Candidate Alternatives				Northern Parkway Candidate Alternatives		
	No-Build	*Alt. A*	*Alt. B*	*Alt. C*	*No-Build*	*Alt. A*	*Alt. B*
Future Development Compatibility	◒	○	◒	◓	●	◓	◒
System Continuity and Capacity	●	◓	◓	◓	●	◎	◓
Drainage Impacts	◒	◓	◓	◓	●	◓	◓
Irrigation Impacts	○	◒	◒	◒	○	◒	◒
Building/Property Impacts	○	◒	●	●	○	◒	◒
Wildlife Impacts	○	◒	◒	◒	○	◒	◒
Cultural/Archaeological Impacts	○	◒	◒	◒	○	◒	◒
Utility Impacts	○	◒	◒	◒	○	◒	◒
Public Acceptability	◒	◓	◒	◒	◒	◓	◒
Cost	○	◒	◒	◒	◓	◒	●

LEGEND: Strong advantage ◎ Advantage ◓ Neutral ○ Disadvantage ◒ Strong disadvantage ●

3.3 Special Analysis Areas

Two areas along the Northern Parkway candidate alternative alignments were deemed "Special Analysis Areas" and examined in further detail for potentially advantageous options:

- The Hassayampa River Special Analysis Area, located where Northern Parkway crosses the Hassayampa River; and
- The Sun Valley Parkway Special Analysis Area, where electrical line towers exist close to the Northern Avenue section line near Sun Valley Parkway.

These Special Analysis Areas are shown in both **Figure 3** and **Figure 4**. A total of three Special Analysis Area alternatives were developed and analyzed as follows:

3.3.1 Alternative A-1

Alternative A-1 is located in the Hassayampa River Special Analysis Area. Alternative A-1 shifts the 200-foot wide corridor 100 feet south of Alternative A and Alternative B between 323rd Avenue and 307th Avenue.

The advantages of Alternative A-1 include:

- It eliminates an unusable remnant parcel that would otherwise be created with Alternative A and Alternative B by fully utilizing the existing 200-foot wide parcel south of the Northern Avenue section line between 315th Avenue and 307th Avenue;
- Fewer property owners are impacted; and
- It brings the parkway immediately adjacent to the Montiere development, eliminating the need for roadway easements across the existing 200-foot wide parcel south of the Northern Avenue section line for access between Northern Parkway and Montiere.

The disadvantages of Alternative A-1 include:

- It creates curved roadway segments that are more complex to design and drive than straight roadway segments; and
- It requires more property acquisition on the south side of the Northern Avenue section line than on the north side.

3.3.2 Alternative A-2

Alternative A-2 is located in the Sun Valley Parkway Special Analysis Area. Alternative A-2 shifts the 200-foot wide corridor approximately 100 feet north of Alternative A and Alternative B for approximately 1,400 feet either side of Sun Valley Parkway to position the parkway in between two existing electrical line towers.

The advantages of Alternative A-2 include:

- It may eliminate the need to relocate one or more existing electrical line towers;
- It avoids creating unusable remnant parcels.

The disadvantages of Alternative A-2 include:

- It creates curved roadway segments that are more complex to design and drive than straight roadway segments;
- It requires more property acquisition on the north side of the Northern Avenue section line than on the south side; and
- Area drainage will need to be channelized and rerouted to prevent the Northern Parkway/Sun Valley Parkway intersection from being within the existing floodplain.

3.3.3 Alternative A-3

Alternative A-3 is located in the Sun Valley Parkway Special Analysis Area. Alternative A-3 shifts the 200-foot wide corridor approximately 800 feet north of Alternative A and Alternative B for approximately 4,400 feet either side of Sun Valley Parkway.

The advantages of Alternative A-3 include:

- It may eliminate the need to relocate one or more existing electrical line towers; and
- It removes most of the Northern Parkway/Sun Valley Parkway intersection out of the existing floodplain, reducing the amount of required drainage channelization and rerouting.

The disadvantages of Alternative A-3 include:

- It creates curved roadway segments that are more complex to design and drive than straight roadway segments;
- It is not compatible with the approved master plan for Sun Valley Villages III and IV;
- It requires more property acquisition on the north side of the Northern Avenue section line than on the south side; and
- It creates remnant parcels between Northern Parkway and the Northern Avenue section line that may be difficult to develop.

3.4 Preferred Alternatives

The evaluation results were presented to TAC members and stakeholders at the February 23, 2011 TAC/stakeholder meeting for review and discussion. The evaluation results were also presented for review and input at the second open house on February 15, 2011.

For both the Tonopah Parkway and Northern Parkway segments, it was determined that the No-Build Alternative does not address the demonstrated long-term need for a high-capacity parkway facility in the study area (see Strong disadvantage indication for System Continuity and Capacity in the tables). In addition, there was more TAC/Stakeholder and public support for Alternative A than for the No-Build or any other alternatives for both the Tonopah Parkway and Northern Parkway. As a result, Alternative A for the Tonopah Parkway and Alternative A for the Northern Parkway are recommended as the preferred alternatives. The ratings for the two preferred alternative segments are highlighted in **Table 3**.

Factors that support the selection of the recommended preferred alternatives include the following:

Tonopah Parkway

- The No-Build Alternative will not provide a continuous, all-weather roadway and will not adequately serve projected traffic volumes associated with anticipated build-out land uses. Even though it may be many years before land uses and traffic volumes justify construction of a parkway facility, the transition from agricultural land uses and open desert to higher-intensity land uses is already occurring. Steps need to be taken now to preserve the long-term viability of constructing a parkway in the future by delineating the footprint and preferred location for Tonopah Parkway;
- Alternative A will result in the most equitable right-of-way acquisition by being centered on the 411th Avenue section line;
- Alternative A will not require any alignment shift to connect with the existing I-10 interchange at 411th Avenue;
- Alternative A is not expected to require any residential building demolition or relocation and will result in the fewest full property acquisitions;
- Alternative A has received the most stakeholder and public support because it has the most uniform and equitable impacts on adjacent properties; and
- Alternative A will have the lowest overall project cost because it is the shortest alternative, resulting in less right-of-way acquisition and lower construction costs.

Northern Parkway

- The No-Build Alternative will not provide a continuous, all-weather roadway and will not adequately serve projected traffic volumes associated with anticipated build-out land uses. Even though it may be many years before land uses and traffic volumes justify construction of a parkway facility, the transition from agricultural land uses and open desert to higher-intensity land uses is already occurring. Steps need to be taken now to preserve the long-term viability of constructing a parkway in the future by delineating the footprint and preferred location for Northern Parkway;
- Alternative A generally follows the Northern Avenue section line, making maximum use of existing roadway right-of-way and providing the most direct east-west connection between Tonopah Parkway and Turner Parkway;
- Alternative A will result in the most equitable right-of-way acquisition by generally being centered on the Northern Avenue section line;
- Alternative A is the most compatible with planned developments. The Belmont and Sun Valley Villages III and IV master plans both have provisions for a 200-foot wide parkway facility;
- Alternative A has received significant stakeholder and public support because it has the most uniform and equitable impacts on adjacent properties and is the most compatible with planned developments along the corridor; and
- Alternative A will have the lowest overall project cost because it is the shortest alternative, resulting in less right-of-way acquisition and lower construction costs.

For the reasons enumerated above, Alternative A for Tonopah Parkway and Alternative A for Northern Parkway are the recommended preferred alternatives for public review and input.

One of the Special Analysis Area alternatives, Alternative A-1, offers additional benefits beyond those provided by Alternative A for Northern Parkway. Alternative A-1 at the Hassayampa River crossing eliminates an unusable parcel that would otherwise be created by Alternative A and improves access between Northern Parkway and the Montiere development. For these reasons, Alternative A-1 is recommended as the preferred alternative at the Hassayampa River crossing.

Although Alternatives A-2 and A-3 may eliminate the need to relocate one or more existing electrical line towers near Sun Valley Parkway, these alternatives involve alignment shifts that will require additional roadway curvature that is not compatible with approved master plans. Salt River Project (SRP), the utility company that operates the electrical line towers, has advised that it will be feasible to relocate one or more towers as long as they remain on the existing power line alignment. SRP has also provided a preliminary electrical tower relocation cost estimate of $400,000 to $500,000 per tower. While this relocation cost is substantial, it does not outweigh the long-term advantages of keeping Northern Parkway centered on the section line through the Sun Valley Parkway interchange area. As a result, Alternative A is recommended for the Sun Valley Parkway Special Analysis Area.

The preferred alternatives for Tonopah Parkway and Northern Parkway (including the Alternative A-1 alignment shift at the Hassayampa River) are shown in **Figure 5**. The preferred alternatives will be depicted at a scale of 1 inch = 200 feet on preferred alignment drawings as part of TM 5 – *Detailed Preferred Alignment*. These detailed drawings will be used for long-term right-of-way preservation as land within the corridor is developed and/or redeveloped.

3.5 Compliance with Title VI of the Civil Rights Act of 1964

As reported in TM 2 – *Environmental Overview*, the Northern Parkway/Tonopah Parkway study area does include minority and low income population groups that exceed the thresholds for potential disproportionate adverse impacts as covered in Title VI of the Civil Rights Act of 1964. Because this is a corridor feasibility study and the detailed roadway alignment, right-of-way requirements, and project schedules have not been finalized, exact impacts cannot be determined at this time. As the parkways move towards final design and impacts to specific properties become more defined, further consideration for Title VI populations will likely be warranted as part of future environmental clearance documents.

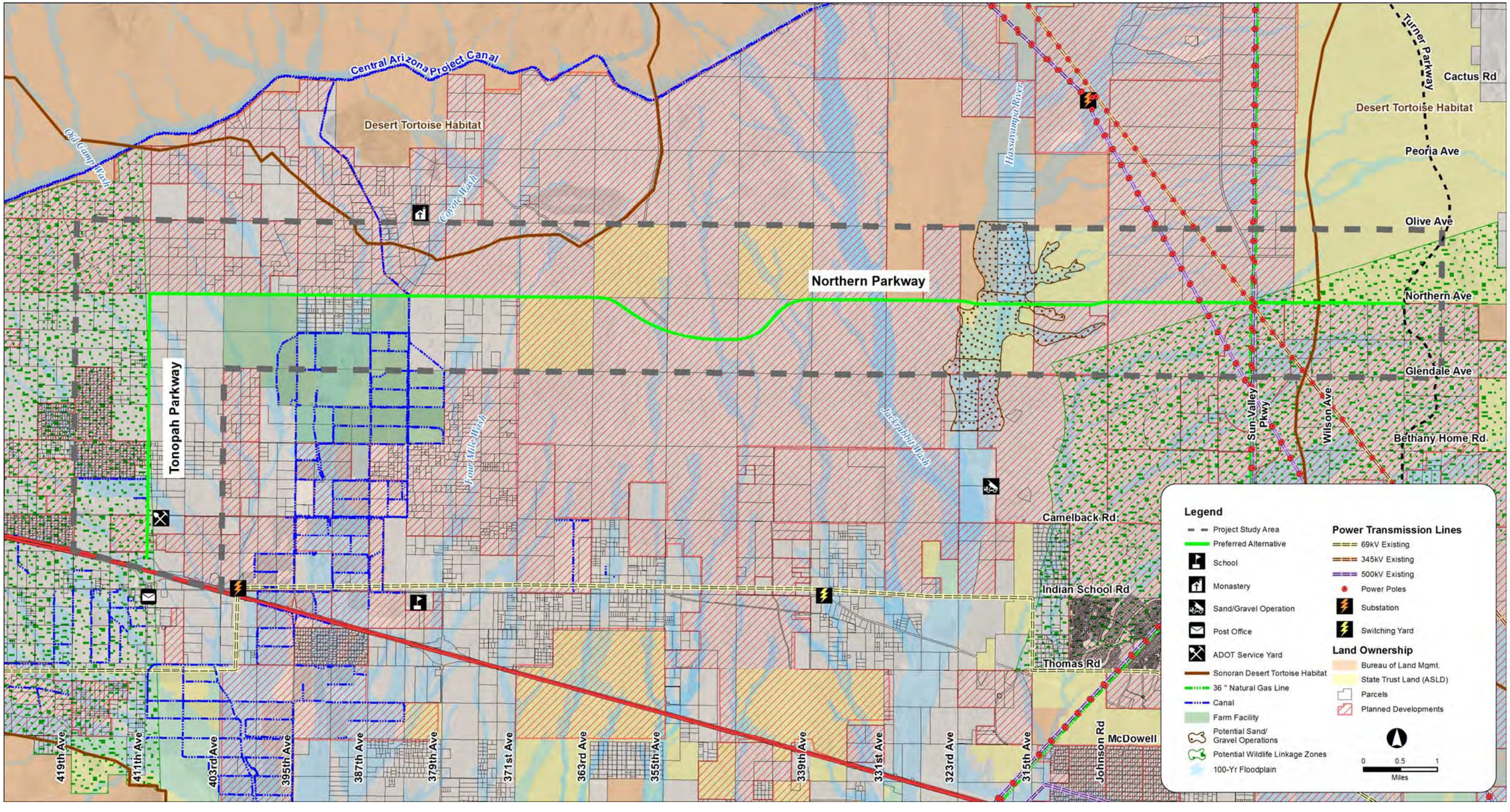

Figure 5 - Preferred Alternatives