



TRUXTON TRIANGLE MASTER PLAN

Prepared for the Hualapai Indian Tribe

January 5, 2019



Bahozhoni Development LLC



Elliott D. Pollack and Company

ACKNOWLEDGMENTS

HUALAPAI TRIBAL COUNCIL

DR. DAMON R. CLARKE, CHAIRMAN
PHILBERT WATAHOMIGIE, SR., VICE-CHAIRMAN
WILLIAM CLAY BRAVO, COUNCIL MEMBER
STEWART M. CROZIER, COUNCIL MEMBER
SHAWNA HAVATONE, COUNCIL MEMBER
HON. JOLENE MARSHALL, COUNCIL MEMBER
RICHARD POWSKEY, COUNCIL MEMBER
JONELL TAPIJA, COUNCIL MEMBER
BLAKE WATAHOMIGIE, COUNCIL MEMBER

PLANNING & ECONOMIC DEVELOPMENT

KEVIN DAVIDSON, DIRECTOR
DANIELLE BRAVO, GAMYU EDITOR
RICHARD KNOTT, GRANT WRITER
CALVIN SMITH, CHIEF BUILDING OFFICIAL
MICHELLE ZEPHIER, PLANNER I

HOUSING

FREDDY WATAHOMIGIE, EXECUTIVE DIRECTOR
LARRY McELHENNEY, PROCUREMENT OFFICER

NATURAL RESOURCES

ANNETTE BRAVO, ASSISTANT DIRECTOR

PUBLIC SERVICES

PHIL WISELY, DIRECTOR

CULTURAL

PETER BUNDGHARDT, DIRECTOR

POLICE

SAM PSOSIE, ACTING POLICE CHIEF

YOUTH COUNCIL MEMBERS

AND TRIBAL MEMBERS WHO PROVIDED THEIR IDEAS AND OPINIONS AT COMMUNITY MEETINGS AND THROUGH THE SURVEY

CONTENTS & FIGURES

CONTENTS

	PAGE
1. INTRODUCTION	2
2. SITE INFORMATION.....	4
LOCATION DESCRIPTION AND REGIONAL CONTEXT	4
PARCEL INFORMATION	4
SITE DESCRIPTION	4
SLOPE AND SOILS:	6
DRAINAGE OVERVIEW	8
ENVIRONMENTAL OVERVIEW	8
TRANSPORTATION OVERVIEW.....	8
3. HOUSING STUDY	11
4. MASTER PLAN.....	15
INTRODUCTION.....	15
PURPOSE AND NEED.....	15
MASTER PLAN GOALS	16
DEVELOPMENT CONSIDERATIONS:.....	17
MASTER PLAN OVERVIEW.....	17
SINGLE FAMILY HOUSING	19
MULTI-FAMILY HOUSING.....	20
SENIOR SUPPORTIVE HOUSING	23
COMMERCIAL AREAS/PUBLIC SERVICES	25
ACCESS	25
DESIGN	25
INFRASTRUCTURE	26
CIRCULATION.....	26
WATER/WASTEWATER.....	26
ENTERPRISE AREAS.....	27
ACCESS	27
SEPTIC.....	27
OPEN SPACE / SHARED USE PATH / UNDEVELOP-ABLE.....	27
ELECTRIC	28
APPENDIX A:	A-1
COMMUNITY	A-1
ENGAGEMENT	A-1
FIELD TRIP/SITE VISIT.....	A-1
COMMUNITY SURVEY	A-1
LISTENING SESSIONS:	A-1



FIGURES

FIGURE 1: TRUXTON TRIANGLE LOCATION MAP	1
FIGURE 2: REGIONAL CONTEXT MAP	3
FIGURE 2A : LAND TENURE MAP	5
FIGURE 3: TRUXTON TRIANGLE PROPERTY SOIL ANALYSIS	6
FIGURE 4: TRUXTON TRIANGLE VEGETATION	7
FIGURE 5: MILCK AND PASTERN COMPLEX CHARACTERISTICS.....	7
FIGURE 6: DRAINAGE MAP.....	8
FIGURE 7: OFF-SHOOT OF TRUXTON WASH.....	9
FIGURE 8: UN-NAMED WASH.....	9
FIGURE 9: SEPTEMBER 7, 2018 SITE VISIT PHOTOS	10
FIGURE 11: HOUSING TENURE BY UNITS.....	12
FIGURE 10: HOUSEHOLD INCOME	12
FIGURE 12: PERCENT OF HOUSEHOLDS PAYING MORE THAN 30% OF INCOME TOWARDS HOUSING RANGE.....	13
FIGURE 13: SUPPORTABLE HOUSING PAYMENTS.....	14
FIGURE 14 : CONCEPTUAL MASTER PLAN.....	18
FIGURE 15: CONCEPTUAL MASTER PLAN LAND USE (ALL ACREAGES APPROXIMATE).....	19
FIGURE 16: LOT SIZE PREFERENCE	19
FIGURE 17: SINGLE FAMILY HOME EXAMPLE	20
FIGURE 18: MULTI-FAMILY HOUSING PREFERENCES	21
FIGURE 19: MULTI-FAMILY HOUSING CONCEPTS.....	21
FIGURE 20: SENIOR HOUSING CONCEPTS.....	23
FIGURE 21: CONCEPTUAL COMMERCIAL AREA LAYOUT.....	25
FIGURE 22: TRUXTON TRIANGLE WASTEWATER TREATMENT OPTIONS	26
FIGURE A-1: SITE VISIT PHOTOS	A-2
FIGURE A-2: COMMUNITY SURVEY	A-3
FIGURE A-3: NOVEMBER 13, 2018-ELDERS MEETINGS PHOTOS.....	A-6
FIGURE A-4: ALTERNATIVE A.....	A-7
FIGURE A-5: ALTERNATIVE B.....	A-8

FIGURE 1: TRUXTON TRIANGLE LOCATION MAP





1. INTRODUCTION

The Truxton Triangle is located between mileposts 95 and 96 on the north side of Route 66 between Kingman and Peach Springs AZ. (Figure 1: Truxton Triangle Location Map.) As the Hualapai Tribe increases in population, the demand for housing continues. The Truxton Triangle site was identified as a potential location for housing because it is relatively flat, it is easily accessible from Route 66, the soils are appropriate for development, and it is less than ten miles from Peach Springs. Additionally, over time, when Buck and Doe Road is improved to provide better access to Grand Canyon West, it could provide an alternative to Kingman as a location for Grand Canyon West tribal employees. This conceptual Master Plan, developed with input from the community, provides development guidance for new housing, commercial, public services, and recreational areas within the Truxton Triangle.

FIGURE 2: REGIONAL CONTEXT MAP





2. SITE INFORMATION

LOCATION DESCRIPTION AND REGIONAL CONTEXT

Truxton Triangle is located in Mohave County and is part of the Hualapai Indian Reservation. The site is approximately 8.5 miles from Peach Springs, 45.5 miles from Seligman, 41.5 miles from Kingman, and 101 miles to Grand Canyon West via Kingman on paved roads and about 50 miles via the unpaved Buck and Doe Road (Figure 2: Regional Context Map). The site is bordered on the north by the Hualapai Reservation, to the east by private land and to the south and west by land owned by the U.S. Government (BLM). (Figure 3: Land Tenure Map.) U.S. Route 66 forms the approximately 1 mile southeast border to the site.

PARCEL INFORMATION

The Truxton Triangle was formally placed into trust with the recording of Deed No. 2017010550 on March 6, 2017, with Mohave County.¹

SITE DESCRIPTION

The site is located within Hualapai Grazing District 2. It offers majestic views of the Music Mountains to the north. The area north of the site is used for grazing. The Music Mountain Jr. High/High School is about 1 mile from the northern boundary of the site. The property is undeveloped and fenced.

¹ The Mohave County Assessor legal description for the Truxton Triangle is as follows: “that Portion of the S2 of Section 3 Lying south of the south boundary of the Hualapai Indian Reservation and north of the Right-of-Way of AZ Highway 66 and bounded by the west section line of SD Section 3 and the south section line of said section 3 containing 142.5 acres. Parcel numbers 314-15-001 (314-15--002, 314-15--003, & 314-15--004).”

FIGURE 2A: LAND TENURE MAP



SLOPE/SOILS

The site slopes from the northeast to the southwest. Level building sites on most of the site can be created with minimal grading. Route 66 is located on a berm that forms the south eastern side of the site. ADOT appears to maintain an approximately 60' of the 200' total fenced ROW adjacent to Route 66.

The soil generally appears to be sandy. No soil tests were performed. Based on information from the NCRS soil survey the site is 99% Class 6 Milck-Pastern complex soil type. (Figure 3: Truxton Triangle Property Soil Analysis.)

With regards to use and management of these soil types, the NCRS soil survey reports that:

“ The potential plant community for these soil types includes fourwig saltbrush, winterfat, blue grama, sand dropseed, indian ricegrass, and black grama and that the present plant community includes broom snakeweed, blue grama, black grama and threeawn. (Figure 4: Truxton Triangle Vegetation.) The NCRS survey additionally states that intensive year-round grazing results in a deteriorated plant community that has low value as forage, uniform grazing is difficult because of the slope or/and the lack of permanent water developments, and that range setting may be needed depending on quantity of desirable forage plants.”² (Figure 5: Milck and Pastern Complex Characteristics.)

2. Soil Survey of Hualapai-Havasupai Area, Arizona, Parts of coconino, Mohave, and Yavapai Counties. In cooperation with the US Department of the Interior, Bureau of Indian Affairs, the Arizona Agricultural Experiment Station; and the Hualapai and Havasupai Tribes. USDA and NCRS. 1993. <https://www.acrevalue.com/report/view/706149/>. Access date 12/21/2018

FIGURE 3: TRUXTON TRIANGLE PROPERTY SOIL ANALYSIS	
SLOPE CATEGORIES	PERCENTAGE OF TOTAL SITE AREA
Milck Pastern Complex, 4 to 12 percent slope	98.8%
Quagwa silt loam, 1 to 3 percent slopes	1.0%
Truxton Complex, 1 to 3 percent slopes	1%

Source: NCRS soil survey <https://www.acrevalue.com/report/view/706149/>.
Access Date: 12/21/2018



FIGURE 4: TRUXTON TRIANGLE VEGETATION



Black Grama

Blue Brama

Snakeweed

FIGURE 5: MILCK AND PASTERN COMPLEX CHARACTERISTICS

Character:	Milck	Pastern
Parent material:	Limestone alluvium	Limestone alluvium
Depth class:	Very deep	Shallow to a hardpan
Drainage class:	Well drained	Well drained
Permeability:	Moderate	Moderate
Available water capacity:	Moderate	Very low
Potential rooting depth:	60 or more inches	10 to 20 inches
Runoff:	Medium	Medium or rapid
Hazard of water erosion:	Slight to moderate	Slight
Hazard of wind erosion:	Slight	Moderate
Shrink-swell potential:	Low	Low
Content of calcium carbonate:	Averages 10 to 25 percent	5 to 25 percent above the hardpan
Corrosivity:	Steel (uncoated)-high; concrete-low	Steel (uncoated)-high; concrete-low

Source: Soil Prevost, Deborah J. and Lindsay, Bruce A. Survey of the Hualapai-Havasupai Area, Arizona . USDA NCRS.

DRAINAGE OVERVIEW

Two washes of note are located on the site (Figure 6: Drainage Map):

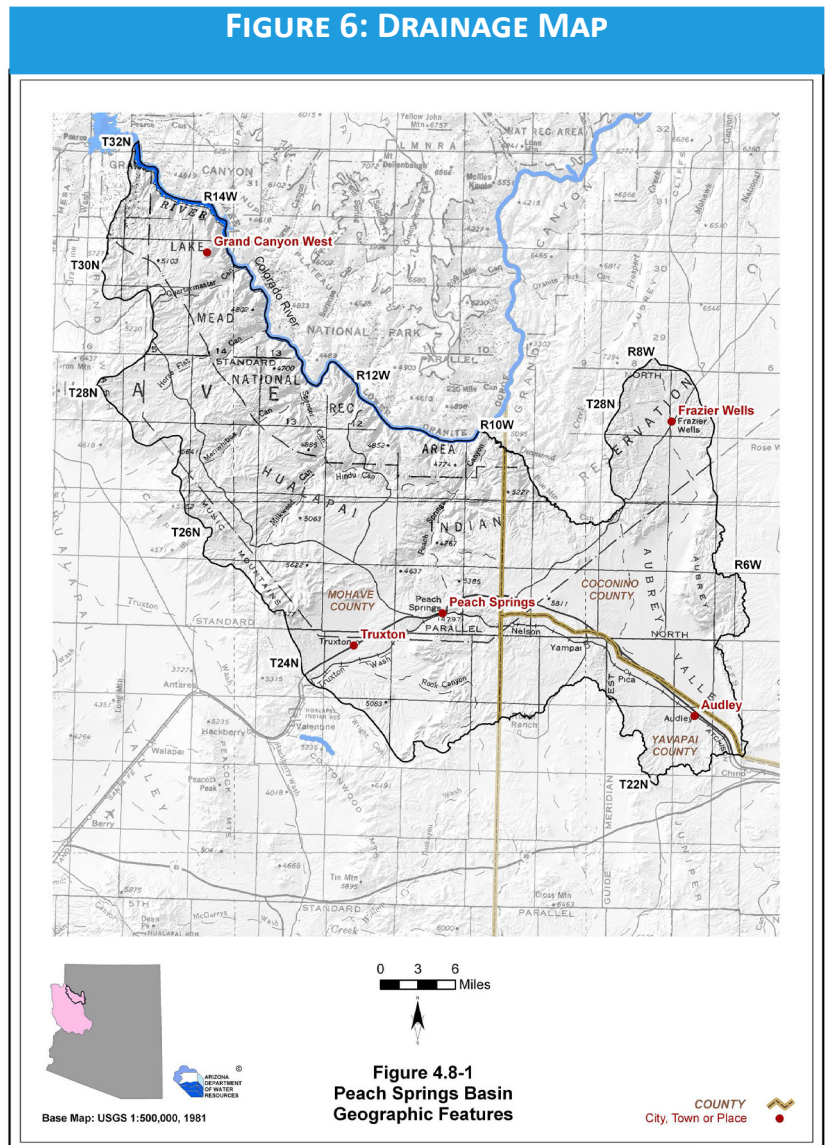
- A significant, unnamed off-shoot of Truxton Wash is located on the western side of the site and enters the site on the north side, approximately 600 ft. west of the western boundary and continues southwest through the site to a culvert at Route 66. The wash is deeply incised, and results in limited access to the western 20+/- acres of the site. Due to the depth of the wash and flows likely accommodated by this wash, and erosion hazard setback of 400 feet is recommended. (Figure 7: Off-shoot of Truxton Wash.)
- A second, less significant wash, enters the site approximately 1/4 mile west of the northeastern boundary of Truxton Triangle at Route 66, and proceeds south to the Route 66 berm and a culvert under Route 66 approximately 1/3 mile southwest of the intersection of Bridge Canyon Road and Route 66. When the wash meets the berm, there appears to be some ponding before the wash proceeds south to the culvert. This north end of the wash can be easily bridged with a culvert and should not impede development of the site. A setback of approximately 50' is recommended for development abutting this wash. (Figure 8: Un-named Wash)

ENVIRONMENTAL OVERVIEW

Cultural Resources and Natural Resources Departments do not foresee any issue with developing the land and each phase of development will be subject to the tribe's NEPA/TERC review and permitting process.

TRANSPORTATION OVERVIEW

There are no on-site roads. Route 66 provides the primary access from the southeast side of the site. Future access points could be established at Bridge Canyon Road and between the culverts at Route 66.



Source: Arizona Department of Water Resources Water Atlas. Volume 4. Section 4.8. Peach Springs Basin.

FIGURE 7: OFF-SHOOT OF TRUXTON WASH



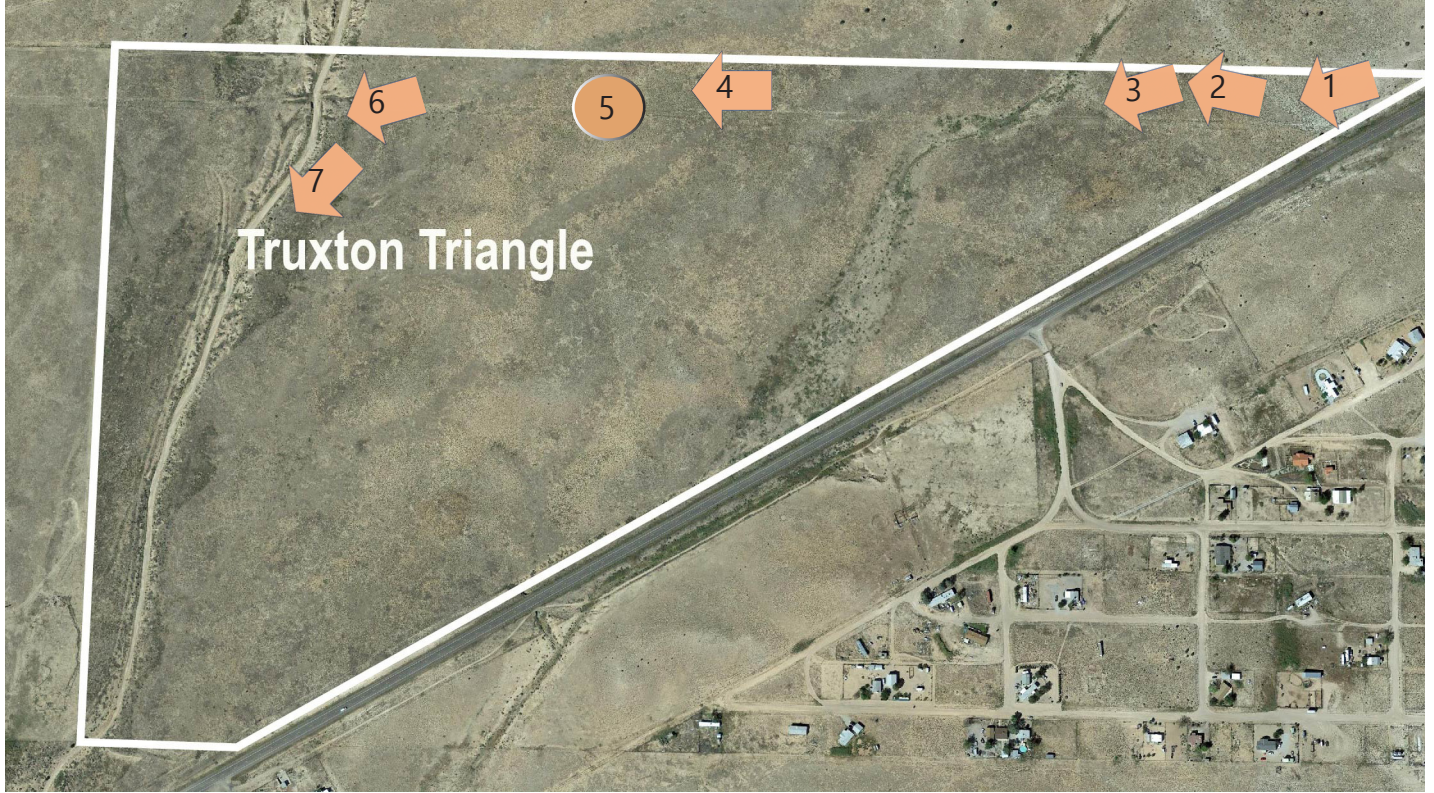
The wash on the west side of the Truxton Triangle site is deep and would be prohibitively costly to bridge.

FIGURE 8: UN-NAMED WASH



A wash entering the site approximately 1/4 mile north of the northeastern boundary of the site can be easily bridged.

FIGURE 9: SEPTEMBER 7, 2018 SITE VISIT PHOTOS



3. HOUSING STUDY



HOUSING MARKET REPORT

Truxton is about eight miles from Peach Springs and five miles from the intersection of Route 66 and Buck and Doe. The distance from Truxton Triangle to Kingman is about 38 miles. Traffic on Route 66 is minimal - just 1,643 daily trips (2017 data) between Peach Springs and Antares, a small community outside Kingman. While Truxton is closer to Kingman and Grand Canyon West than Peach Springs, it is still a significant commuting distance for those working outside of Peach Springs. There are a few businesses in Truxton, primarily auto repair, and the historic Frontier Motel.

According to the 2012-2016 American Community Survey, the Hualapai Reservation is home to 1,304 persons living in 334 households for an average of 3.90 persons per household. A total of 1,102 persons live with the Peach Springs area in 273 households. Median household income is approximately \$35,000 with an average income of \$45,000. (Figure 10: Household Income).

Housing in the Hualapai Community is virtually all single-family units. Of the 334 housing units in the community, only 8 or 2% are apartment-type units. Mobile homes account for 16 units. More than 51% of all households rent a housing unit and virtually all of those units are single family homes. (Figure 11: Housing Tenure by Units).

FIGURE 10: HOUSEHOLD INCOME		
	Peach Springs	Hualapai Indian Community
Total Households	273	334
Less than \$25,000	37.70%	38.90%
\$25,000 to \$49,000	30.40%	27.20%
\$50,000 to \$74,999	15.80%	15.00%
\$75,000 to \$99,000	5.50%	7.50%
\$100,000 to \$149,999	11%	11.40%
\$150,000 or more	0%	0%
Median Income (dollars)	\$34,911	\$35,156
Mean Income (dollars)	\$44,046	\$44,881
<i>Source: 2012-2016 American Community Survey 5-year Estimates</i>		

FIGURE 11: HOUSING TENURE BY UNITS		
	Peach Springs	Hualapai Indian Reservation
Total	273	334
Owner Occupied	122	157
1-Unit	121	157
2 to 4 Units		
5 or More Units		
Other		
Renter Occupied		
1-Unit	141	153
2 to 4 Units	2	2
5 or More Units	6	6
Other	2	10
<i>Source: 2012-2016 American Community Survey 5-year Estimates</i>		



The common measure of housing cost burden is a household paying more than 30% of its income toward housing. For the most part, housing cost burden on the Hualapai Reservation is lower than many communities. Only 3.1% of owner-occupied housing units or 5 units pay more than 30% of income toward housing. (Figure 12: Percent of Households Paying More Than 30% of Income Towards Housing Costs By Income Range.) These five households represent 12.5% of all households earning less than \$20,000 of income. Renter housing burden is higher at 20.5% or 35 households. 58.9% of households with less than \$20,000 of income pay more than 30% of their income toward housing. Some of the focus of development at Truxton Triangle should address housing affordability.

According to HUD, the median income in Mohave County in 2018 is \$49,600. Households that are considered low and moderate-income and who are typically qualified for subsidized housing must have incomes between \$24,500 and \$39,700 for a family of four. Based on the latest income data, approximately 44% of households living in the Hualapai Reservation would qualify as low and

FIGURE 12: PERCENT OF HOUSEHOLDS PAYING MORE THAN 30% OF INCOME TOWARDS HOUSING COSTS BY INCOME RANGE				
	Peach Springs CDP		Hualapai Indian Reservation	
	Households	Percent	Households	Percent
Owner Occupied Housing Units	122	100.00%	163	100.00%
Less than \$20,000	3	2.46%	5	4.10%
\$20,000 to \$34,000		0.00%		0.00%
\$35,000 to \$49,000		0.00%		0.00%
\$50,000 to \$74,000		0.00%		0.00%
\$75,000 and over		0.00%		0.00%
Total Paying More Than 30% Of Income	3		5	
% Paying More Than 30% of Income		2.46%		3.07%
Renter-Occupied Housing Units	151	100.00%	171	100.00%
Less than \$20,000	30		33	
\$20,000 to \$34,000	2		2	
\$35,000 to \$49,000				
\$50,000 to \$74,000				
\$75,000 and over				
Total Paying More Than 30% Of Income	32		35	
% Paying More Than 30% of Income		21.19%		20.47%

Source: 2012-2016 American Community Survey Series

moderate. The maximum monthly payments that a household can afford based on 30% of income spent on housing is outlined in Figure 13: Supportable Housing Payments. The table also shows the maximum mortgage that could be afforded based on a 30-year fixed rate loan at 5% interest. We also understand that the Community recently built three 1,900 to 2,600 square foot homes in Peach Springs at a total cost of \$805,000 or an average of \$268,000 each. This cost included on-site and off-site development work in addition the construction of the home. Based on this information and the table below, it appears that the majority of the Community households would not be able to afford a \$268,000 home unless they had a large down payment. For those households with incomes less than \$50,000, these homes would be beyond their reach.

CONCLUSION

The development of the Truxton Triangle site for housing purposes will require subsidies for most households to afford a home. The new development of the site with water, sewer and electrical service could increase the cost of housing that was recently built or that could be sited in other

FIGURE 13: SUPPORTABLE HOUSING PAYMENTS					
	Income Mid-Point	30% of Income	Maximum Monthly Payment	Maximum Mortgage	Total Households
Less than \$25,000	\$20,000	\$6,000	\$500	\$92,000	96
\$25,000 to \$34,000	\$27,500	\$8,250	\$688	\$130,000	51
\$35,000 to \$49,999	\$42,500	\$12,750	\$1,063	\$200,000	51
\$50,000 to 74,999	\$62,500	\$18,750	\$1,563	\$290,000	50
\$75000 or more	\$90,000	\$27,000	\$2,250	\$400,000	61
Zero Income - No Cash Rent	\$0	\$0	\$0	\$0	25

Source: 2012-2016 American Community Survey 5-Year Estimates, Elliott D. Pollack and Co.

locations.

While rental apartments are not common in the Hualapai Reservation, they would provide relief for households that may be spending more than 30% of their income on housing. If the community decides to construct single family units that will be rented, the subsidy would be even higher.

An option for the community to consider is a model that has proven successful in the Greater Phoenix area. These are single family complexes that are rented with units ranging in size from 800 to 1,200 square feet in size. These could accommodate single person households as well as small families.





4. MASTER PLAN

INTRODUCTION

The Truxton Triangle Conceptual Master Plan identifies areas for a mix of housing types, commercial development, a police and fire substation, open spaces, trails, and an RV Park. The plan was developed with community input from 2 meetings with elders, a community meeting, and meetings with Tribal housing, public works, public safety, and planning staff. A description of the public engagement activities conducted to develop this plan is located in Appendix A.

PURPOSE AND NEED

This Master Plan is an outgrowth of the Council 2016 retreat which found at least 60 additional homes are needed and the December 2016 Vacant Land and Housing Study.

MASTER PLAN GOALS

Goal 1. Provide a range of housing that meets the needs of Tribal Members

Strategy a. Provide a range of housing types that reflect the housing preferences of the community.

Goal 2. Provide opportunities for tribal enterprises that contribute to the self-sufficiency economy and welfare of the Hualapai Tribe

Strategy a. Provide areas for commercial and tribal enterprises.

Goal 3. Design with Nature

Strategy a. Respect the environment and on-site natural features

Strategy b. To the greatest extent possible, respect natural drainage patterns, topography, and views in the design of infrastructure and placement of housing on each lot.

Goal 4. Create communities that contribute to the well-being and health of the Hualapai by providing areas for physical activity, contemplation, and social interaction

Strategy a. Locate active parks, trails, and open spaces within walking distance (1/4 mile) of all residential areas.

Strategy b. Ensure infrastructure (for example, sewer lagoons) do not have odors or visual impacts that negatively impact other areas

Strategy c. Do not provide pedestrian connections to the Stop and Go west of this development¹.

Goal 5. Create communities that connect to Peach Springs and employment

Strategy a. Provide access to Route 66

Strategy b. Route the tribal circulator through this development with stops at commercial, housing, and recreational areas.

Strategy c. Ensure adequate infrastructure for school bus stops are located throughout the development.

Goal 6. Design communities and infrastructure in a way that respects the cultural values of the Hualapai through design and site development

Strategy a. Ensure the development area is approved by the Tribal Environmental Review Commission.

Strategy b. Preserve views of Music Mountain.

Strategy c. Encourage housing design that provide adequate space and private areas adjacent to homes

Strategy d. Provide areas for individual or community gardens.

¹. Alcohol is sold at this location.



DEVELOPMENT CONSIDERATIONS:

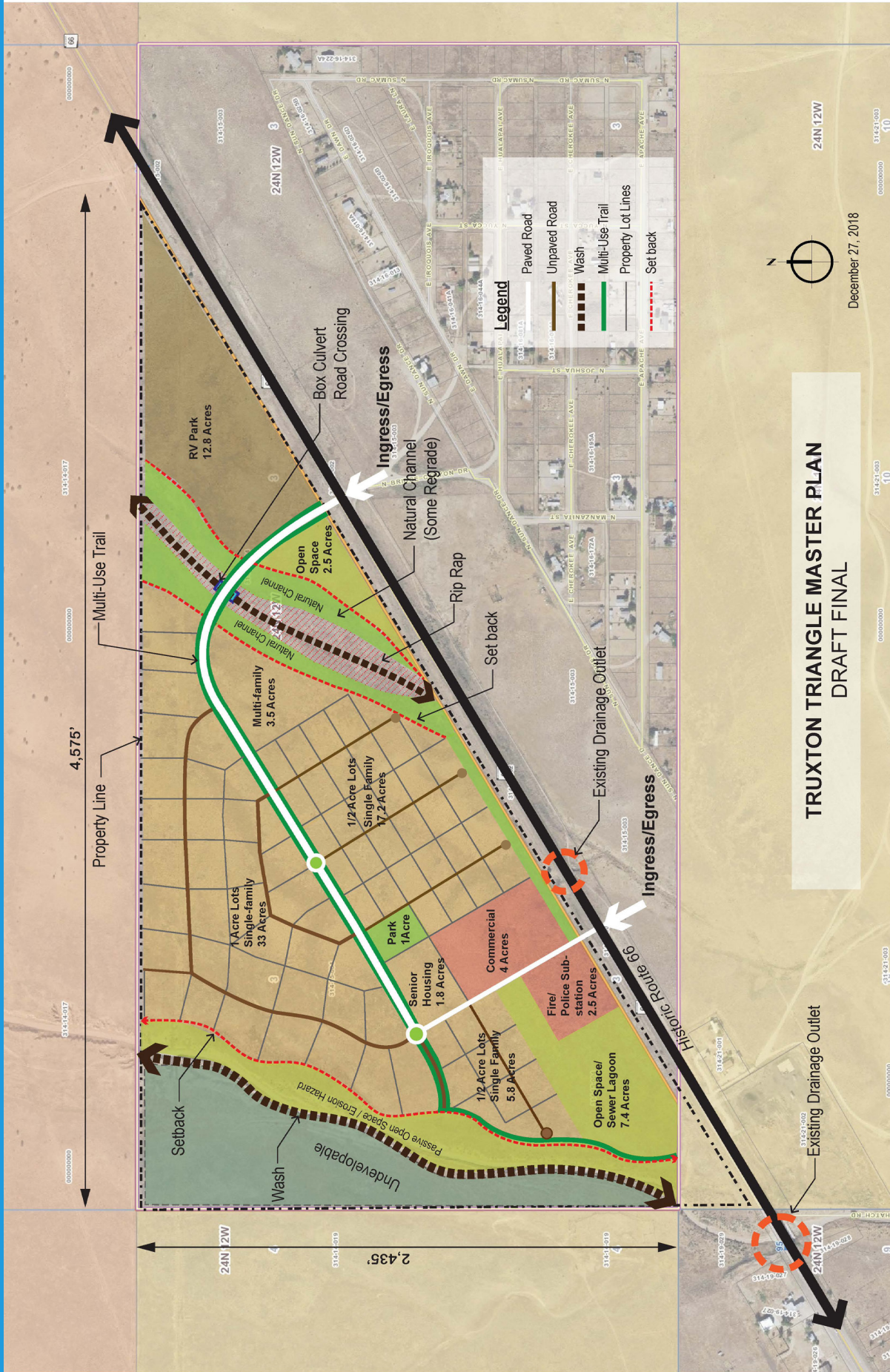
The following should be considered prior to any development of this site:

- With the exception of the MEC's 3-phase electric line, the Truxton Triangle site currently has no infrastructure or access. Any access to the site from Route 66 will need to be coordinated with the Arizona Department of Transportation (ADOT). Other access to the site will need to be coordinated with the Hualapai Tribe Public Works Department..
- The site has been approved for development by the Hualapai Natural Resources Department. A representative of the Natural Resources Department attended the site field review and vegetation observed on site was not found to be culturally significant.
- Drainage studies have not been conducted for this site and are recommended prior to any grading and development of the site.
- This Master Plan does not include coordination with Mohave Electric
- This Master Plan does not include coordination with the Valentine School District.
- Hualapai Public Works Department staff attend the on site inspection, and departmental meetings regarding the site. Public Works attended the site field review and will oversee the infrastructure development and also coordinate water and sewer design with Indian Health Services.
- No studies regarding soils were undertaken as a part of the development of this Conceptual Master Plan. Any final determinations regarding septic and wastewater should be made at the time of final platting.

MASTER PLAN OVERVIEW

The Truxton Triangle Master Plan identifies locations for a variety of land uses which are identified in Figure 14: Conceptual Master Plan. Figure 15 Conceptual Master Plan Land use lists acres and potential residential development potential associated with single family residential land uses.

FIGURE 14 : CONCEPTUAL MASTER PLAN



**TRUXTON TRIANGLE MASTER PLAN
DRAFT FINAL**



FIGURE 15: CONCEPTUAL MASTER PLAN LAND USE (ALL ACREAGES APPROXIMATE)

LAND USE	UNITS	APPROXIMATE ACRES
One-acre Single Family Residential Lots	34	40
One-half Acre Residential Lots	35	17
Senior Housing	TBD depending on Density	2
Multi-family housing	TBD depending on density	3.5
Commercial		3.5
RV Park (estimated 10 spaces/acre)	130 spaces	13 Acres
Police/Fire Substation		2.5
Active Park		1
Undeveloped Open Space /Passive Linear park		28
Undevelopable Land		19
Open Space/Potential Sewer Lagoon		7
Roadways / Multi-use Trail		5
Total		142

HOUSING

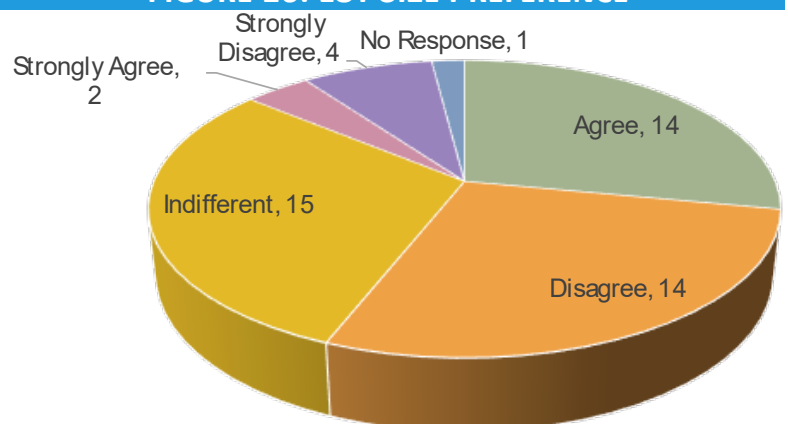
In response to community input obtained from the community survey, community meetings, and elders the Master Plan identifies areas for single family and attached multi-family housing and a senior living community.

SINGLE FAMILY HOUSING

Based on the survey conducted as part of the planning process, preferences regarding lot size were mixed, with approximately more than half of survey respondents stating they strongly agree, agree or are indifferent to buying a house on a smaller lot if the house was large enough. (Figure 16: Lot Size Preference: Fall 2018 Community Survey.)

One-acre lot and one-half (1/2) acre lot housing areas are identified on the Master Plan and can accommodate 70 single family homes. Both housing areas can easily accommodate large, single-story homes.

FIGURE 16: LOT SIZE PREFERENCE



Source: 2018 Community Survey

Access

Access and egress to all single family residences is envisioned via unpaved roads accessed from a paved loop road.

Design Considerations:

- Photo-voltaic System to generate electricity for the home owner's use and to sell back the excess electricity to the grid/power company
- Ground Source Heat Pump system for heating homes in cooler climates
- Evaporative Cooling using heat-exchanger technology and natural ventilation strategies for cooling homes in cooler climates.
- Natural Day-lighting strategies utilizing windows, clerestories and skylights
- Solar water heating system
- Low water use fixtures for sinks, showers and toilets
- Rainwater collection and gray-water filtration system for recycling of water to use for flushing toilets, washing clothes and landscape irrigation
- LED light fixtures for lower electricity consumption
- Very highly insulated building envelope with R26 minimum walls, R40 minimum roofs and low U-values and Low-E for the glazing. Provide shading features at glazing. Utilize thermal mass properties in the design of the envelope
- Landscaping designed to shade homes in summer and to create micro-climates
- Use of construction materials with recycled content, materials made from rapidly renewable products and regionally manufactured products
- Design the homes to achieve LEED Gold Certification



FIGURE 17: SINGLE FAMILY HOME EXAMPLE

Source: Dyron Murphy Architects

MULTI-FAMILY HOUSING

Seniors, participants at meetings held as part of the design process, and survey respondents all reported that multi-family housing could be appropriate for single people. Tribal police stated that they were concerned that there could be some security issues associated with people looking for temporary lodging, but acknowledged that this should not prevent the construction of multi-family housing. Tribal members currently owning and renting homes as well as living with others or homeless that responded to the survey conducted as part of this Master Plan process preferred attached houses with private yards over an apartment with amenities. This master plan envisions providing attached multi-family housing that could be provided as a rental or for-sale product.

Access

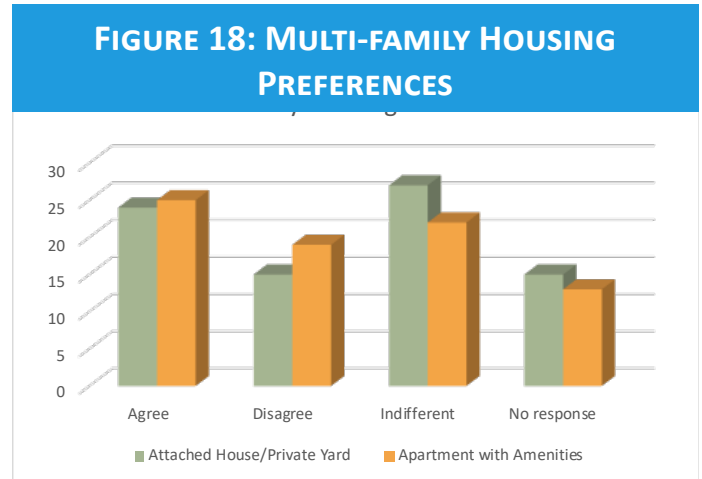
Access to the multifamily housing is via the paved loop road.

Design

The following guidelines should be considered in the design of multi-family housing. (Adopted from the Local Government Commission. <https://www.lgc.org/resource/multifamily-housing/>. Access date: 12/26/2-18)

Site Planning

- Relate buildings to the street and locate them on the site so that they reinforce street frontages.
- Relate buildings to existing and planned adjacent uses.
- Provide as many private, ground level entries to individual units as possible.
- Ensure that all building entries are prominent and visible.
- Provide each unit with its own visual identity and individual address whenever possible.
- Provide pedestrian accessibility to adjacent uses with paseos, gates, pedestrian walkways, crossings, etc.
- Locate common facilities – such as community rooms and laundries – centrally and link them to common outdoor space.
- Locate buildings and landscaping to maximize solar access during cooler months and to control it during warmer months. Maximize natural ventilation, sunlight and views for each unit.



Source: 2018 Community Survey



Parking

- Place parking at rear.
- Build multiple small parking areas in lieu of one large lot.
- Plant trees and shrubs to soften the overall impact of parking areas and to provide shade and noise reduction without reducing visibility from apartments or the street.
- Place parking lot in proximity to dwelling units to allow for casual surveillance.
- Provide energy efficient (solar-powered) ground level lighting of parking areas.
- Designate “vehicle free areas” in the front of buildings and throughout the site.

Public Open Space

- Provide open space which can be used by tenants for play, recreation, social or cultural activities.
- Locate open spaces so that they can be viewed from individual units, preferably from the kitchen, living room or dining room.
- Locate play area(s) centrally and to allow for adult supervision from dwelling units and/or from a central facility such as a laundry.
- Provide solar powered (or other energy efficient) lighting from a variety of sources at appropriate intensities and qualities for safety.

Private Open Space

- Provide each housing unit with a separate yard physically and visually – from individual units.
- Provide fencing to insure privacy and to help define boundaries between public and private open space.

Landscaping

- Design landscaping to be compatible with the surrounding area and to create and define useful public and private spaces.
- Use hardy, native plant species .
- Shade paved areas.
- Include paths to accommodate children, adults, bicycles, skate boards, shopping carts, walkers, pets, furniture moving, etc.
- Provide appropriate lighting to insure that paths are safe at night.

Architecture

- Design buildings for the site; don't use stock plans.
- Overall height of structure(s) should be no greater than 30' inclusive of roof equipment.
- Heating and air conditioning units shall be roof mounted and screened. Each unit shall have its own heating and air conditioning unit.



- Relate size and bulk of project so that it is consistent with buildings in the immediate neighborhood.
- Eliminate box-like forms with large, unvaried roofs by using a variety of building forms and roof shapes (This may be accomplished by creating clusters of units, variations in height, setback, and roof shape).
- Make the building visually and architecturally pleasing. (Vary the height, color, setback, materials, texture, landscaping, trim and roof shape.)
- Enhance views and make spaces feel larger by maximizing the number of windows.
- Break up the façade of horizontal buildings into smaller components by utilizing vertical adjacent structures.
- Use porches, stairs, railings, fascia boards, and trim to enhance buildings' character.
- Select building materials and color that are complementary to the surrounding area and have high levels of recycled content whenever possible.
- Make the placement and quality of front doors fit in with neighboring homes.

SENIOR SUPPORTIVE HOUSING

During meetings with tribal staff, there was discussion of a need for housing that meet the needs of tribal elders. While the Tribe currently operates a elderly living home, it is more along the model of congregate care, and it is not fully occupied. Tribal staff suggested that since many elders care for grandchildren, a housing option that provided a level of independence with areas for children to stay and play would be welcome.

The senior housing area identified in this master plan is located close to the commercial area and park, providing easy access to services (such as a small grocery or video store), and areas for grandchildren to play. The housing envisioned for this area is small, casita-type housing with a family room/kitchen area, up to two bedrooms and a bathroom clustered around an open space that allows for supervision of small children.



Separate, paved, covered . and lit entrances from parking areas and paved streets into individual units.



Housing units clustered around a central courtyard visible from each unit.

Access

Access to Senior Supportive Housing is via the paved loop road.

Design:

- All units shall be designed to meet U.S. ADA standards and adhere to the principles of Universal Design.
- Cluster units around a central courtyard/open space that is visible from the interior of each unit.
- Connect open spaces within the development to the community park.
- Provide direct access/egress from individual units to the central courtyard/open space and to parking areas.
- Design walkways and pathways to be a minimum of 6' wide with a solid, consistent surface
- Provide paved walkways and pathways from the paved street to the door of all units
- Clearly sign each individual unit
- Provide roofs and lighting at all porches and over doorways that lead from inside to outside
- Design windows to easily open with sliders or cranks

What is Universal Design?

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Common universal design features include:

- No-step entry. No one needs to use stairs to get into a universal home or into the home's main rooms.
- One-story living. Places to eat, use the bathroom and sleep are all located on one level, which is barrier-free.
- Wide doorways. Doorways that are 32-36 inches wide let wheelchairs pass through. They also make it easy to move big things in and out of the house.
- Wide hallways. Hallways should be 36-42 inches wide. That way, everyone and everything moves more easily from room to room.
- Extra floor space. Everyone feel less cramped. And people in wheelchairs have more space to turn.
- Floors and bathtubs with non-slip surfaces help everyone stay on their feet. They're not just for people who are frail. The same goes for handrails on steps and grab bars in bathrooms.
- Thresholds that are flush with the floor make it easy for a wheelchair to get through a doorway. They also keep others from tripping.
- Good lighting helps people with poor vision.
- Lever door handles and rocker light switches are great for people with poor hand strength.



COMMERCIAL AREAS/PUBLIC SERVICES

A 4.5 acre commercial area is located on the southwest edge of the site on the main loop road adjacent to Route 66. This site is designed to be visible from Route 66, and provide services to people living in Truxton as well as the Tribal members. A police/fire substation is located directly across from the commercial area to provide a buffer between the community and the Stop and Go located in Truxton on Route 66 outside the Tribal boundaries.

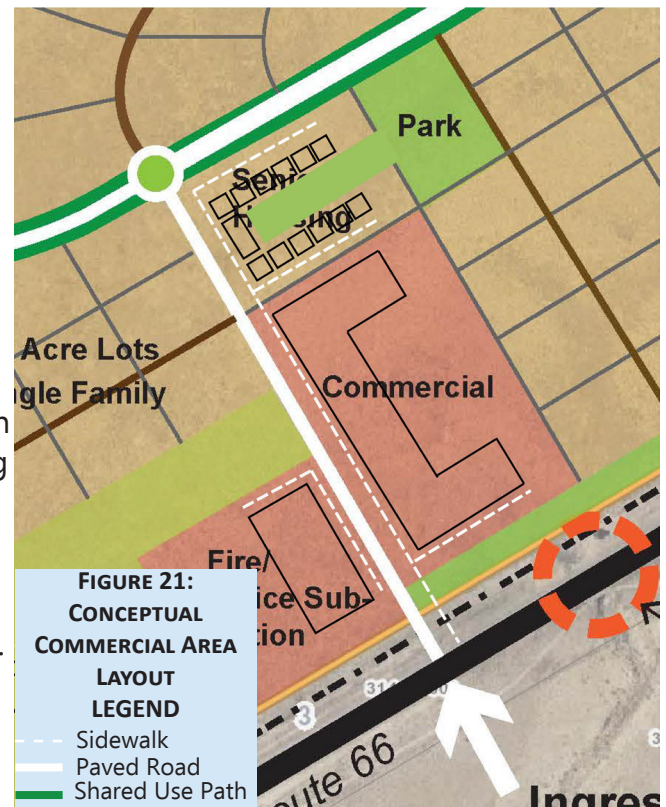
The commercial area, police fire substation, senior housing and park are planned as a focal point of the Truxton Triangle Master Plan. The plan envisions that parking for the commercial area and fire/police substation is designed with an "on street" appearance, creating an attractive pedestrian environment for people living within the Truxton Triangle or Truxton who may choose to walk to this area. Additionally, visibility from Route 66 may attract people traveling from Kingman, Peach Springs, or Seligman.

ACCESS

The primary access to the commercial areas shall be from the paved, loop road. Parking, deliveries, and service areas shall be accessed from the south side of the development (adjacent to Route 66).

DESIGN

- This site shall contain a commercial development with a continuous, attached facade.
- A continuous minimum 8' paved sidewalk shall abut the frontage and north edge of the commercial building.
- Parallel or "front in" parking may be provided between the sidewalk and the paved roadway.
- Storage, delivery, and retail service areas shall be located at the back (east side) of the development. Access to this area shall be located at the south side of the development (adjacent to Route 66). These areas shall lit with solar powered or other energy efficient lighting at night.
- Prior to development of the site, the east edge of the property abutting the residential property lines shall be fenced with a block wall.
- The front of all commercial buildings shall be a minimum of 80% glazed (excluding signed areas).
- All customer entry shall be from the sidewalk adjacent to the paved road, or from a sidewalk on the north side of the development.



INFRASTRUCTURE

Conceptual Planning for circulation and a conceptual approach to water and sewage disposal are identified in this Master Plan.

CIRCULATION

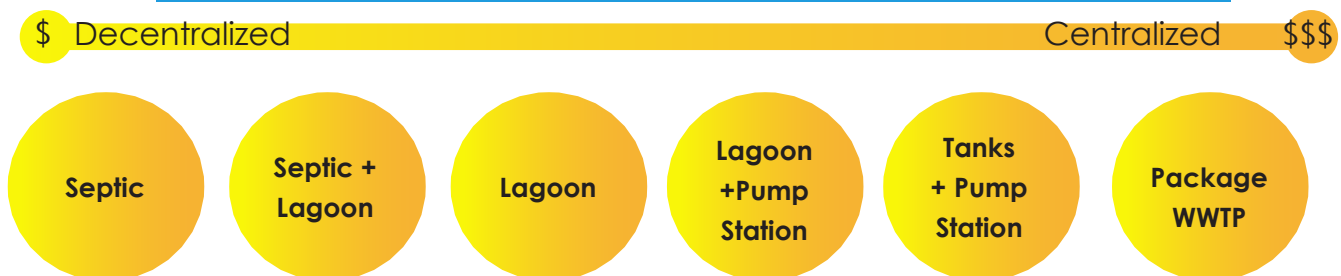
Access from Route 66 is provided by a single, paved, loop road, aligned with Bridge Canyon Drive provides access and egress to the site on the north and approximately 1/2 mile south of Bridge Canyon Drive on the South. The loop road passes over a natural channel that can be easily and inexpensively bridged with a culvert to maintain access during storm events. Commercial, public service, senior housing, multifamily and park sites are directly accessible from the paved, loop road. All single family lots are accessible from graded dirt roads connected to the paved loop road. A shared use path is located along both sides of the loop road between the passive open space and the northern entrance to the site. A sidewalk, connected to route 66, is envisioned along the paved road between Route 66 and adjacent to the commercial and senior housing areas. A separate sidewalk, which may not be connected to Route 66

WATER/WASTEWATER

No water or wastewater services currently exist on-site. With development the Tribe will need to extend water services to the site, or contract with the Truxton Canyon Water Company which provides water to this area. There are centralized and decentralized options for wastewater service:

- **Septic:** Single family lots could have individual septic systems. This would be the most cost efficient option. Public Works stated that soil studies have not been conducted, but should be before this option is executed.
- **Sewer Lagoon:** The site drains to the southwest. A sewage lagoon could be located here, but would need to be buffered from adjacent uses. This option could be used to serve the senior housing, multifamily, commercial, and public uses in combination with septic systems for single family homes. Properly designed, the lagoon could be visually appealing and have little to no odor or other impacts on the site. In combination with a lift station (72" manhole with two submersible pumps and a force main; approximate 2018 cost; \$200,000), a sewer lagoon (or holding tanks or a package plant) could be located anywhere on the site.
- **Holding Tanks:** The tribe uses holding tanks in other locations. Use of these tanks requires regular pumping and disposal at a sewage waste facility. Unless they are located at the southwest edge of the site a lift station would be required for this option.
- **Lift Station and Package Plant.** This centralized approach to wastewater treatment is the most expensive to install and maintain. Unless the plant is located at the southwest portion of the site, a lift station is necessary.

FIGURE 22: TRUXTON TRIANGLE WASTEWATER TREATMENT OPTIONS



ENTERPRISE AREAS

Approximately 13 acres located at the northeast corner of the site is identified for a Tribal Enterprise. At community meetings, many felt that an RV Park would be appropriate given the role of Route 66 as a tourist destination. The RV Park is located east of the natural channel located on the site.

ACCESS

Access to the RV Park is envisioned to be directly from Route 66, ensuring that tourists do not enter the Truxton Community.

SEPTIC

The RV Park is planned to have a separate wastewater treatment system. This system can be determined at time of development.

OPEN SPACE / SHARED USE PATH / UNDEVELOP-ABLE

A variety of active and passive open spaces, totaling approximately 43 acres are located throughout the Truxton Triangle Master Plan site. In addition to provide spaces for active recreation, these areas provide an opportunity for grazing, and maintain natural drainage ways, washes, and ponding areas and provide erosion hazard setbacks.

The westernmost portion of the site (approximately 18 acres) is defined by a deep wash that is cost-prohibitive to cross. This portion of the site is identified on the Master Plan as undevelopable. During the community input process, some tribal members identified additional grazing lands as a good use for this site. Because the wash provides a good natural barrier, this area could be used by District 2 for grazing.

An approximately 9-acre linear park on the east side of the wash functions as a passive open space and erosion hazard setback.

Open space located at the far southwest of the site is reserved as the future location for a sewage lagoon to serve multi-family, senior, public services, and commercial development. This open space provides ample area to buffer the lagoon from residential and other development.

A natural channel on the northwest portion of the site provides passive open space and buffers residential areas from the enterprise area and Route 66. This area includes areas of ponding that are associated with the existing Route 66 drainage outlet.

A one-acre active park is located along the paved loop road. The park is adjacent to the elder housing area, so elders caring for children can have an easily accessible place for them to play while provide surveillance.

A shared use path is planned along both sides of the paved loop road. The path provides access to all passive and active open spaces (with the exception of the Sewer Lagoon area) in the Master Plan.

ELECTRIC

Electric service can be provided by the Mohave Electric Cooperative or the Tribe. The Tribe formed the Hualapai Tribal Utility Authority (HTUA) in 2014. The TUA is authorized "to acquire, construct, operate, maintain, promote, and expand electric power service, water service, and sewage service at GCW and on such other locations within the Hualapai Reservation and on other Tribal lands under the jurisdiction of the Hualapai Tribe as the Tribal Council may deem appropriate." Source: Hualapai Tribe website. Access date: 12/28/2018).). This would allow the HTUA to provide service to the Truxton Triangle provided it purchase all or part of MEC's facilities within the service area.



APPENDIX A: COMMUNITY ENGAGEMENT

The Truxton Triangle Master Plan was developed with input from the community and included the following:

FIELD TRIP/SITE VISIT

The first trip to Peach Springs was to conduct a site tour by walking and photo-documenting the site with the Planning, Public Works and Natural Resources Department staff. During the site visit, the planning team also toured the existing housing stock within the reservation. (Figure A-1: Site Visit Photos.)

COMMUNITY SURVEY

The planning team prepared and with the assistance of the Tribal Planning Department distributed a community survey at the Employee Picnic, to the Tribal Youth Commission, in the GAMYU and at Tribal offices. This survey asked about the types of housing and other services tribal members would like to see at the Truxton Triangle. (Figure A-2: Community Survey)

LISTENING SESSIONS:

The planning team:

- Listening Sessions Round 1 (September 7, 2018): Presented the tribal survey findings and draft master plan alternatives to elders and at a meeting of Tribal departments. This information provided the people information about site constraints and considerations as they shared their opinions and ideas on the master plan alternatives. (Figure A-4: Master Plan Alternative A and Figure A-5: Master Plan Alternative B)
- Listening Session Round 2 (November 13, 2018): Presented the refined draft plan to the elders (Figure A-3 Elders Meeting), tribal departments, and the community. (Figure A-4 Master Plan Alternative A and Figure A-5: Master Plan Alternative B) Based on feedback from Listening Session 2, the planning team created the draft Master Plan and submitted it to the Tribal Planning Department for review and refinement.
- Met with the planning department staff to develop the master plan alternatives and refined, final draft plan. Based on Tribal Planning Department review of the final draft plan, the planning team created the final plan and for review and consideration by the Tribal Council.

FIGURE A-1: SITE VISIT PHOTOS



FIGURE A-2: COMMUNITY SURVEY

TRUXTON TRIANGLE PLANNING
COMMUNITY HOUSING PREFERENCE SURVEY


1. Where do you live?


Beach Springs
 Kingman
 Other (where?) _____


2. Do you own or rent your home?


Own
 Rent
 Live with friends/family
 Homeless

3. What type of home do you live in?


Townhouse/
Attached


Apartment


Manufactured Home


Single Family

Single Family
 Townhouse/Attached
 Apartment/Condominium
 Manufactured
 Other (Please specify) _____


4. What is most important to you when considering the purchase of a home or renting a home? (Please rank from 1-10 with 1 being the most important)

Affordability
 Large lot/property
 Other (Please specify) _____

5. What are the features that are most important to include in the Truxton Triangle? (Please rank from 1-6 with 1 being the most important)

RECREATION FACILITIES (Please rank from 1-8 with 1 being the most important)	COMMUNITY FACILITIES (Please rank from 1-8 with 1 being the most important)
<input type="checkbox"/> Bicycling paths (paved)	<input type="checkbox"/> Parks (with seating and play area)
<input checked="" type="checkbox"/> Children's playground	<input checked="" type="checkbox"/> Lighted streets
<input type="checkbox"/> Walking trails (paved)	<input type="checkbox"/> Firehouse
<input type="checkbox"/> Softball/soccer field	<input type="checkbox"/> Assisted Living Space/Apartments
<input type="checkbox"/> Library/community center	<input type="checkbox"/> Convenience Shopping
<input type="checkbox"/> Open space	<input type="checkbox"/> Gas Station
<input type="checkbox"/> Seating Areas	<input type="checkbox"/> Mini Storage
<input type="checkbox"/> Community Garden	<input type="checkbox"/> Business Park for Hualapai E

Strongly Agree Agree Indifferent Disagree Strongly Disagree

- 6. I would consider buying a house on a 6,000 square foot lot (60'x100')
- 7. I would rather buy a larger lot than a larger house
- 8. I would buy a house on a smaller lot if the house was large enough
- 9. I would consider buying an attached house with a private yard

- 10. I would consider living in an apartment with amenities such as a gym or community room.
- 11. I would trade a large lot for a neighborhood with a park, shopping, and walking and bicycling paths and trails.
- 12. I would not consider living on a small lot
- 13. I would not consider living in an apartment

14. Do you prefer to rent or own your residence?

- Rent
- Own

15. How long have you lived at your current residence?

_____ Years

do you have a mortgage on it?

Monthly mortgage amount is: \$ _____
 No

16. If you own a home, c

Yes. My mor

do you plan on moving from your current residence within the next two years?

- Yes
- No

17. Do yo

Maybe (please state reason if considering a move)



18. Do you think there is an adequate choice of housing in the community?

Yes
 No
 Comments _____

19. Would you consider living in Truxton?

Yes
 No (Why?) _____
 Maybe (Why?) _____

20. How do you commute to work?

Walk
 Drive (What Route do you take?) _____
 Bus
 Combination _____

21. What is your household income?

less than \$15,000
 \$15,000 - \$20,000
 \$20,000 - \$25,000
 \$25,000 - \$30,000
 \$30,000 - \$35,000
 \$35,000 - \$40,000
 \$40,000 - \$50,000
 \$50,000 - \$70,000
 \$70,000 - \$100,000
 more than \$100,000

24. Do you or family members work in Kingman?

Yes
 No

25. Do you think your house is overcrowded?

Why: _____

22. What is your age?

Under 25 years old
 25-40 years old
 40-60 years old
 Older than 60 years old

23. Do you or family members work at Grand Canyon West?

Yes
 No

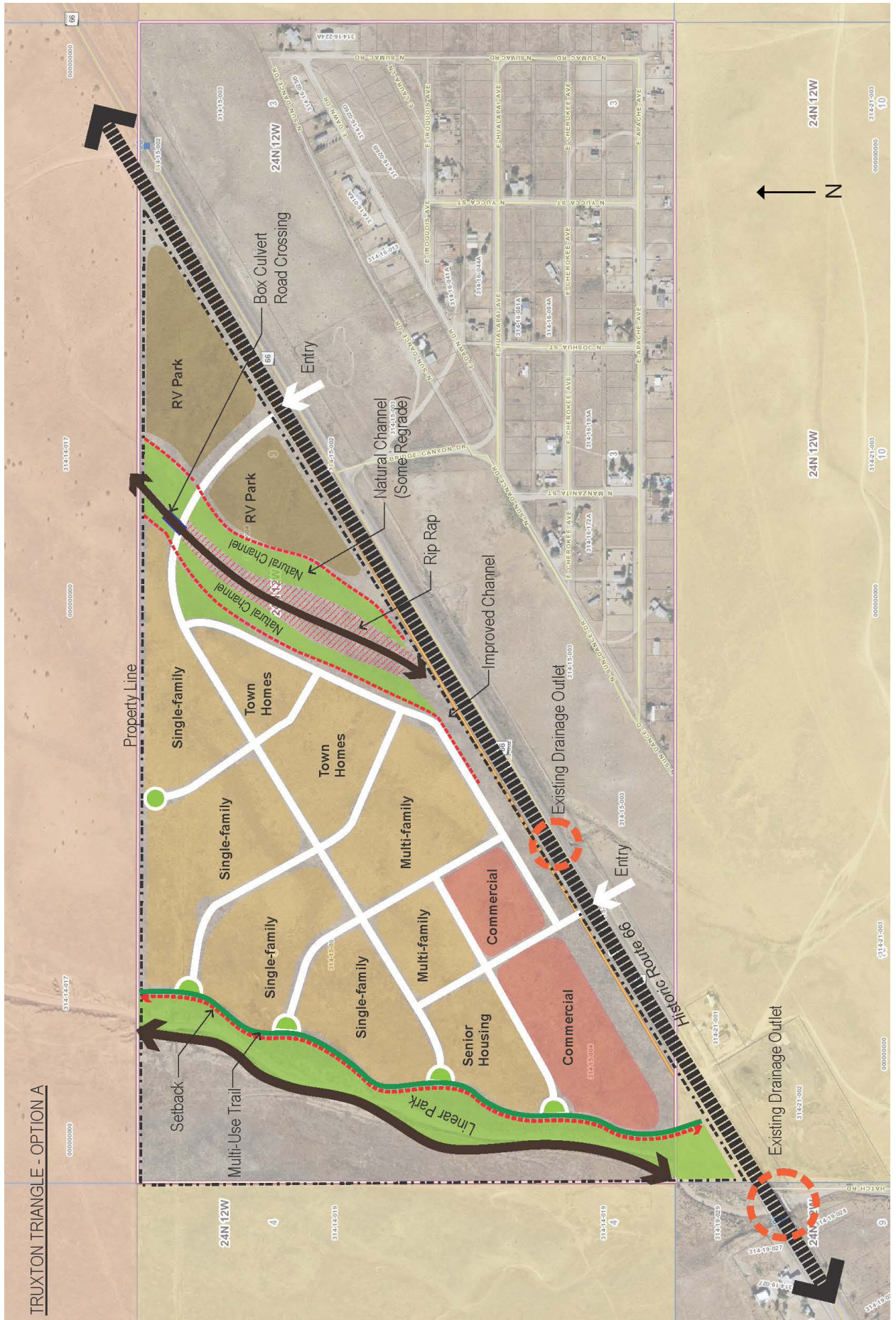
FOR MORE INFORMATION CONTACT: _____
Office or _____
to: _____

THANK YOU FOR YOUR PARTICIPATION!
Please return this survey to any Tribal Office or the Senior Center OR by email to KDavidson@hualapai-nsn.com
FOR MORE INFORMATION ON THE TRUXTON HOUSING STUDY PLEASE CONTACT:
Kevin Davidson:
email: KDavidson@hualapai-nsn.com
tel: 928.769.1310

FIGURE A-3: NOVEMBER 13, 2018-ELDERS MEETINGS PHOTOS



FIGURE A-4: ALTERNATIVE A



**HUALAPAI TRIBAL COUNCIL
RESOLUTION NO. 08-2019
OF THE GOVERNING BODY OF THE
HUALAPAI TRIBE OF THE HUALAPAI RESERVATION**

(Truxton Triangle Master Plan)

WHEREAS, the Hualapai Tribe is a federally recognized Indian Tribe located on the Hualapai Indian Reservation in northwestern Arizona with authority vested in the Hualapai Tribal Council by the Constitution approved March 31, 1991; and

WHEREAS, the Hualapai Tribal Council, stemming from its August 28, 2017, retreat, directed the Planning Department on September 9, 2017, to draft an RFP to secure a consultant to develop a master plan for the Truxton Triangle to help the tribe designate additional land for housing and economic development; and

WHEREAS, the Truxton Triangle is a parcel of land containing some 142.64 acres adjoining the southern edge of the Hualapai Reservation and the northerly right-of-way of State Route 66 between mile posts 95 and 96 which was conveyed to the United States of America in trust for the Hualapai Tribe by the recording deed of No. 2017010550 on March 6, 2017, with Mohave County; and

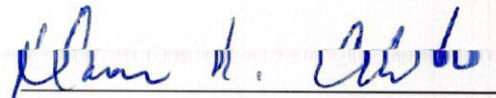
WHEREAS, the Hualapai Tribal Council selected Bahozhoni Development, LLC, on June 9, 2018, to develop the master plan for the Truxton Triangle; and

WHEREAS, the consultant met with multiple tribal departments and community members from September 7, 2018, to December 8, 2018, and analyzed some 50 community surveys to define what types housing and other forms of development are desired for this site; and

NOW, THEREFORE BE IT RESOLVED that the Hualapai Tribe adopts the Truxton Triangle Master Plan as amended.

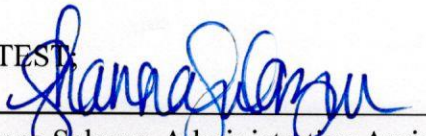
C E R T I F I C A T I O N

I, the undersigned as Chairwoman of the Hualapai Tribal Council hereby certify that the Hualapai Tribal Council of the Hualapai Tribe is composed of nine (9) members of whom 7 Constituting a quorum were present at a **Regular Council Meeting** thereof held on this 5th day of January, 2019; and that the forging resolution was duly adopted by the affirmative vote of 7 - in favor, 0 - opposed, 2 - excused, pursuant to the authority of Article V, Section (a) of the Constitution of the Hualapai Tribe approved March 13, 1991.



Dr. Damon Clarke, Chairman
HUALAPAI TRIBAL COUNCIL

ATTEST



Shanna Salazar, Administrative Assistant
HUALAPAI TRIBAL COUNCIL