CLARK RANCH
AFFORDABLE HOUSING FEASIBILITY STUDY

DECEMBER 19, 2023

PARK CITY 1884

HOFFMAN LAW

TALISMAN CIVIL CONSULTANTS

G.B:D

stereotomic

Contents

Introduction

Stereotomic Architecture + Design
1641 Pheasant Way
Park City, UT 84098
P: 435-640-6850
E: Jarrett@stereotomic.space

Mr. Browne Sebright
Housing Program Manager
Park City Municipal Corporation
445 Marsac Ave. / P.O. Box 1480
Park City, UT 84060
435-615-5153

Dear Browne,

We appreciate the opportunity to assist in the preliminary planning phases of this exciting new potential to service the community through affordable housing. In an effort to provide the requested data as a means for assisting city staff and elected officials to further define a path forward for the project, we initiated a (3) phase process in an effort to provide clarity.

For the course of the study, we executed an extensive site analysis phase, examining the natural and existing infrastructure statistics surrounding the city owned property identified for development. As well as analyzing two separate entitlements processes; the Master Plan development process and the Affordable Master Plan development process defined by the city's Land Management Code (LMC).

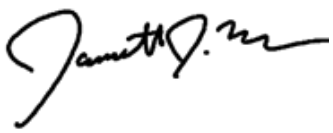
We then established baseline estimates per each of the scenario's outlined in the scope of services, by creating baseline numbers using the optimum unit balance as requested per our various conversations.

The final step included balancing the statistical goals with an architectural test fit, including basic massing studies using computer aided processes.'

The results of the steps outlined above are then included in the subsequent pages of this study. As the project is advanced forward, careful development of the site planning, as well as refinement of the visual logic should be carefully considered to provide the type of function and aesthetics which will compliment the existing adjacent open space.

We hope the information contained here will provide significant clarity to you and your team. As always, please feel free to reach out with any questions you may have as you implement the information.

Sincerely,



Principal-in-Charge,
AIA, NCARB, LEED AP, BD+C
Stereotomic Architecture + design

executive summary

The following information provided in the study is presented as a means to help guide city management and elected officials with a basic, high level analysis of the existing Clark Ranch - West Parcel (Clark Ranch West - CRW) and the potential of the site for affordable housing development. The approach utilized a 3 phase approach. Phase I, represented here in the site analysis section, looks to gather critical information on the current site and infrastructure to form a comprehensive understanding of the project constraints and attributes.

The Alta Survey and Title Report do not indicate any encumbrances to the sites development. The topographic survey illustrates the magnitude to which the sloping site will dictate the overall layout. With slopes between 11% to +70%, the land absolutely dictates many aspects to the design. Fortunately, the Topographic site survey and the visual impact analysis show the areas which are the most prime for development coincide with the lowest slopes and the least amount of visual impact. Based on the current Sensitive Lands Overlay defined in the Land Management Code, it would be most advantageous to include a minimum site area of 125 acres to include in any future entitlements procedure even though we've targeted a clustered approach on +/- 12 acres in the northeast corner of the west parcel.

Any pursuit of development entitlements would require a rezone of the property, as the current zoning (RO - Recreation Open Space) do not allow for the addition of residential units. Based on our review of the current zoning and Land Management code, several possible existing zones could be re designated for the site to allow for the options represented here. Of course, there is the possibility of creation of a new zone, but in most instances our team has looked into approaches which could be satisfied with existing zones and regulations already defined by the code.

The overall location and sloping topography of the site provide substantive challenges, both to the overall cost to develop the project as well as structural challenges to provide a simple, yet welcoming environments. With a substantial price tag for the horizontal infrastructure (installation of roads, utilities, storm-water controls, etc...) it challenges the design to develop a site sensitive project which can offset the increased infrastructure costs by maximizing the unit count. The initial carrying capacity of the existing infrastructure (water, sewer, traffic volume) would support upwards of 275 units.

Through our overall analysis, we propose a simplified road layout which balances cut/fill excavation operations. The density options presented range from 90 units of grouped Town-homes, to 230 units of multifamily stacked flat configurations. We purpose the units to be provided through multiple unit types, including a mix of duplexes, town-homes and small to medium scale stacked flats. The Higher unit count maximizes the efficiency of the current carrying capacity of the infrastructure, while provided the best offset on a per unit basis of the overall development costs. The grouping of units in this fashion provide a greater potential for sustainable development (net zero energy & carbon), while still achieving a very human centric built environment.

vision statement

The Clark Ranch study provide a unique opportunity to envision a new model for Park City in the 21st century. As our community continues to grows exponentially, it becomes increasing more important to provide an equitable, sustainable development to ensure a diverse population. At the forefront of this idea is to strike an equal balance between social, environmental and financial constraints. The social aspect looks to maximize accessibility, affordability and equity. The environmental leg must exalt the preservation of natural character, and look to provide a regenerative project which limits the carbon and energy usage as a means to protect the future. Last but not least, the project must strike a fiscal balance to guarantee the vision can become reality.

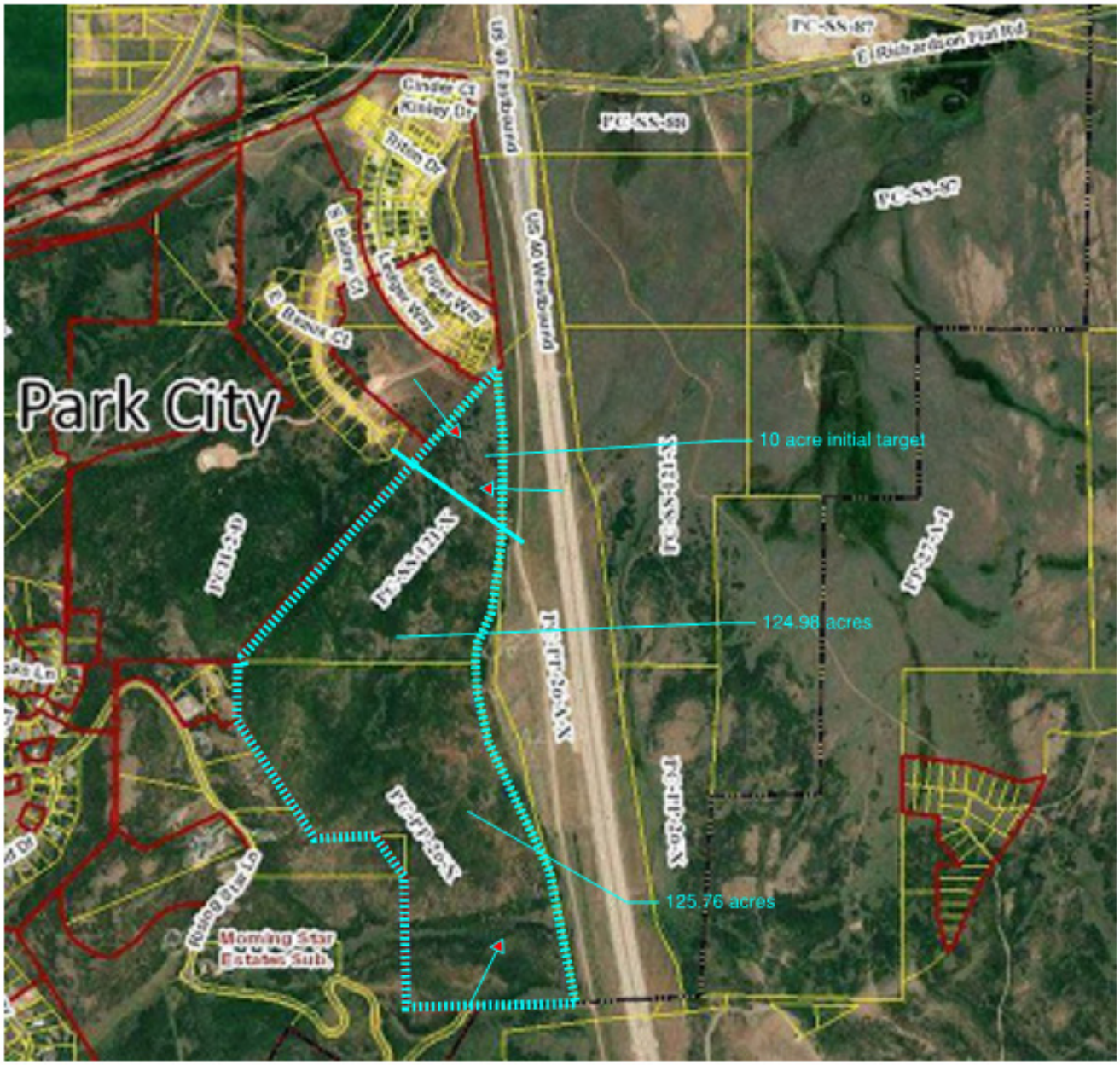
The feasibility study here proposes to aid in creating an increase in available housing targeting the "missing middle". As we've seen the evolution of our economy and the speculative investment in housing rapidly pushes beyond the level of affordable for many in our community, it becomes important to embrace the typologies which suit our current gap.

Our work here proposes to take a "critical regionalist" approach; in which modern ideas and solutions to more urban problems are adapted to our regional locale. This approach looks to define what may be summed up as "Mountain Urbanism".

Site analysis

The first phase for the design team began by making a comprehensive site analysis exercise to understand the physical constraints apparent or deduced for the CRW property. From this exercise, several factors are identified as major constraints and many others are categorized as major & minor considerations, based on the potential impact they hold for future development. The major constraints include: topography, access, infrastructure and visual impact. Major considerations include; potential pedestrian access & accessibility, potential traffic impact, Hazard potential and preservation of natural environment. Minor considerations include; soil characteristics, financial impacts, remediation of potential hazards. The major factors of note are included here as part of the site analysis phase.

Illustration 6.1



site characteristics

Alta Survey

City Staff provided the Title report for the entirety of the City Owned property at Clark Ranch. Talisman Civil Consultants and Hoffman Law provided a review, and noted no notable discrepancies or identified items which would need resolutions.
As part of this study, Talisman Civil Consultants conducted an ALTA/NSPS Land Title Survey dated July 21, 2023. Upon completion of the survey, no remarkable easements, or barriers to development on the northeast portion of the west side parcel were identified. A copy of the completed Survey is included in Appendix A.

Topography / Slope Analysis

Talisman Civil Consultants has developed a preliminary Topography Survey of the parcel utilizing state topography data system. This dataset, although accurate to within 2 feet, was determined this would be the most cost effective given the significant snow cover which persisted late into the spring season.
The results of the study indicate the topography will play a major role in the layout & design of any development targeting for the CRW parcel. The predominant slope descends East through North-East, with very minor discrepancies. Slope angles vary from 11%-15% at the lower and mid elevations on the Northeast, to over 70% on the west side. It should be noted that the average slope encountered in the develop-able target (10 acres in the Northeast tip) is 17%-25% (6:1 – 4:1 ratio). Shallow to moderately shallow drainage pathways exist across the slope.
The slope analysis is key to identifying the amount of available area that can be targeted for development based on the LMC Sensitive Lands Overlay (S.L.O.) guidelines. The SLO identifies the following slope categories and development restrictions on the following slope categories:

Steep Slopes (15% - 30%) – 75% of the area must remain as Open space.
Steep Slopes (30%- 40%) - 75% of the area must remain as Open space.
Very Steep Slopes (+40%) – No Development Allowed

Much of the area targeted for development lies within the Steep Slopes (15%-30%) which require 75% of the area to remain as Open space.

Considering the language of the SLO, section 15-2.21-4 (H) defines the density and outlines the amount of land development which can occur in the Steep Slopes (15%-30%). Section A defines the maximum Density as outlined by the underlying zoning, without significant adverse visual or environmental impacts. Section B recommends several organizational strategies for development, and as such it has

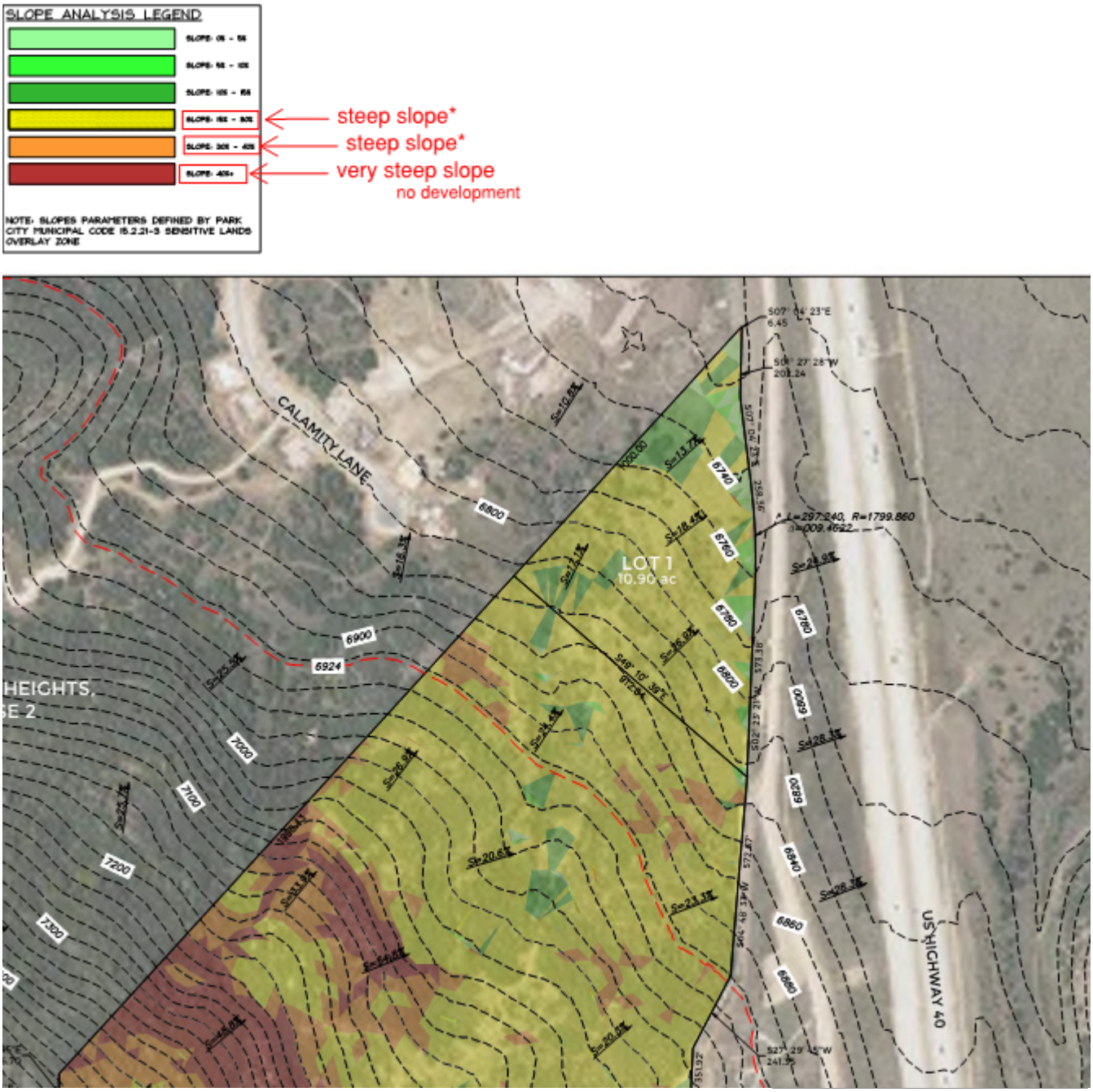


Illustration 8.1

been identified a "Clustered Development" would provide the least intrusive visual and environmental impact on the site. Section C allows for a transfer of density to the "least intrusive portion of the site". In this instance, the Northeast corner of the site provides the "least intrusive" portion of the site, both visually and through horizontal development (grading & cut/fill operations)

Therefore, it should be noted that the full 125 acres of the study parcel should be kept intact, with much of the west – southwest portion of the parcel (which contain the steepest slopes) to be designated as permanent Open space for the benefit of the community as outlined in the SLO

Illustration 9.1

Access Analysis

The evaluation process of the potential access options for the Clark Ranch West parcel identified the existing frontage road grade as the best primary access option. Discussions with the Park City Engineering team offered a solution to the access point from Richardson Flats road, given its close proximity to the Piper Way intersection. (Approx. 145') A direct access as it intersects Richardson Flats Road is deemed not sufficient in its proximity with Piper way. A 300' min. separation is suggested to provide the proper safe spacing, which is not possible. An alternate option of utilizing the existing piper way intersection, then adding a roundabout at the intersection of Kinley Way and Piper Way with a spur running to the east connecting to the frontage road grade. The logistics of which would need the endorsements from UDOT, Summit County as well as Park City Engineering.

Based on our discussions with City and county officials, it has been ascertained that Summit County currently is responsible for the existing frontage road grade within the UDOT easement for highway 40. If and when developed, the process would be in cooperation with UDOT, Summit County and Park City Municipal Corporation for design, whereas long term maintenance would fall to Park City as a city public right-of-way.

Based on NFPA (National Fire Protection Assoc) section 1140 "Standard for Wild-land Fire Protection", the team recommends (2) distinct and separate vehicular access paths. Per section 11.1.4.1, these

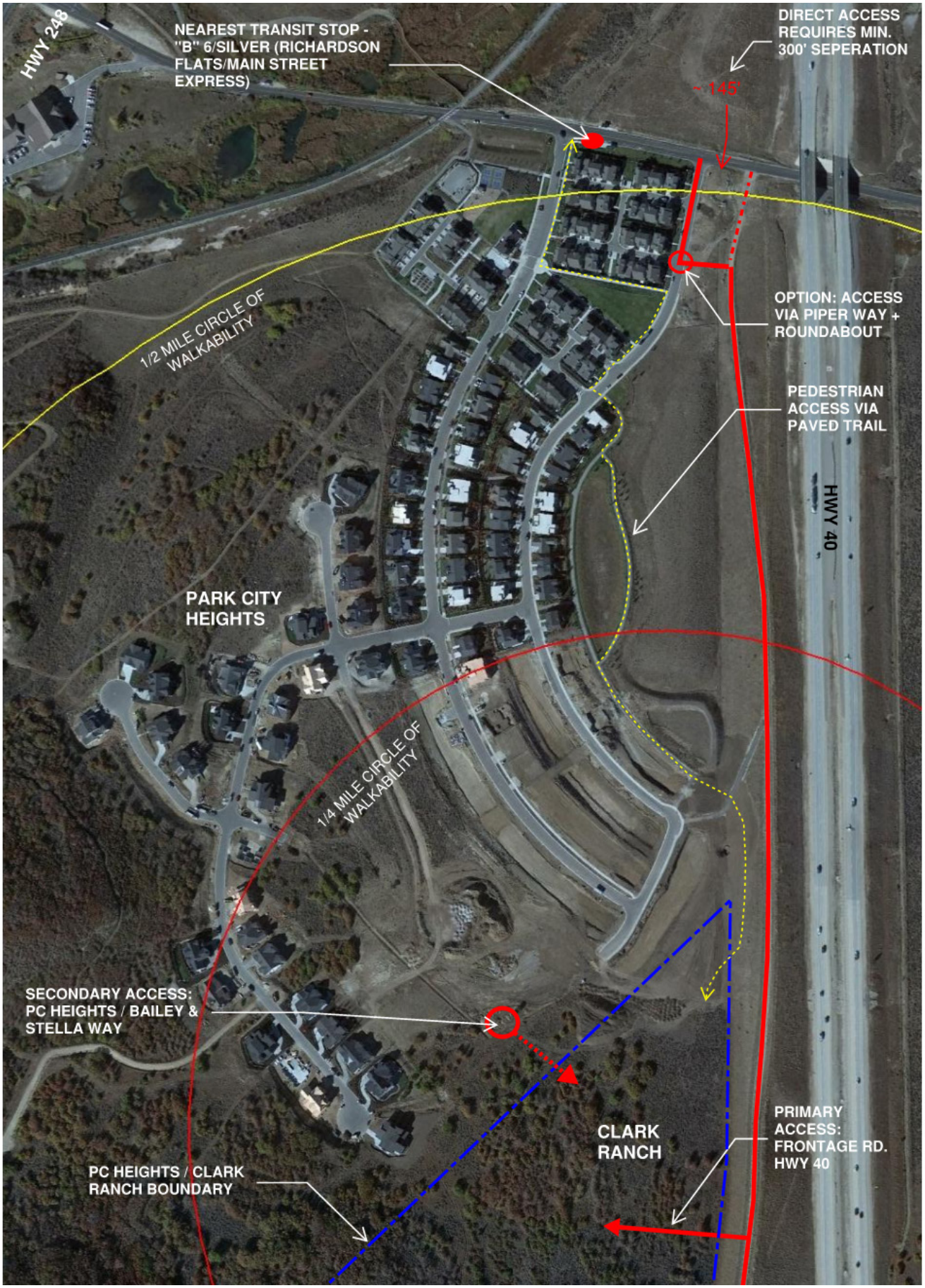


Illustration 10.1

access analysis

Table 11.1.4.1(a) Required Number of Access Routes for Residential Areas

Number of Households	Number of Access Routes
0–100	1
101–600	2
>600	3

Fig. 11.1 - source National Fire Protection Assoc. (2022) Sect 1140- "Standard for Wild-land Fire Protection"

11.1.4.3 Where multiple means of access are required, one of the means of access shall be permitted to be restricted for emergency use only, when approved by the AHJ.

11.1.4.4 Where multiple means of access are required, they shall be located as remotely from each other as practical and acceptable to the AHJ.

Fig. 11.2 - source National Fire Protection Assoc. (2022)Sect 1140- "Standard for Wild-land Fire

connections should be located "as remotely from each other as practical".

Secondary access for the development was considered for both safety and functionality, and it was determined that a connection to the existing Park City Heights neighborhood directly to the north would be the most advantageous. Several provisions in the LMC provide for neighborhood connectivity. Section PCMC 15-7.3-4 (A)(1)(d) reads " Proposed Streets shall be extended to the boundary lines of the tract to be subdivided, unless prevented by topography or other physical conditions, or unless in the opinion of the Planning Commission such an extension is not necessary for the coordination of the layout of the Subdivision with the existing layout or the most advantageous future Development of adjacent tracts." Additionally, PCMC 15-7.3-4 (A)(6) "CONSTRUCTION OF DEAD-END ROADS" provides guidelines for fire protection, convenience and efficient utilities by outlining the connections between adjacent developments.

Hoffman Law has conducted a background review and finds no evidence which would preclude development of a secondary connection to the existing planned streets in the Park City Heights neighborhood. There is a stub available for the Clark Ranch West property in the next phase of Park City Heights development, and the roads in the existing neighborhood are public.

illust. 11.3- source: Park City Planning Commission, Park City Heights Plat Map

Pedestrian / Bicycle Access

Pedestrian and bicycle access provide a slight challenge given the nature of the existing topography and distances to existing public transit infrastructure. The current north edge of the proposed CRW parcel lies approximately 1/2 mile from the transit stop for Park City heights. This is what is generally at the acceptable limit for walk-ability; especially considering the elevation gain / loss from the transit stop to CRW.

In discussions with Park City Staff, a combination of micro-transit, and paved walking/biking paths would be planned to connect the north end of the parcel with the existing trail, bus stop at PCH, and eventually the rail trail. A new transit stop for the development could be possible, and would need coordination with transit staff over the logistics.

The main pedestrian connection would be via a paved 8' wide trail exiting the Clark Ranch Parcel on the Northeast end, connecting to the existing trails developed as part of the Park City Heights neighborhood. This path would have one road crossing in the Park City Heights development (Piper Way) and it is recommended further study to understand the current traffic volumes at this location. Several upgrades my be advantageous given the current volume of cars passing this location.

Within the plan for the development is a series of single track gravel and multiple use paved trails to be used for distinct pedestrian and bicycle movement between buildings. This provides two advantages; the first by decoupling the automobile traffic from the pedestrian, and second by providing alternative means of ascending and descending the natural slopes of the terrain at lower angles from the road grade with sidewalks adjacent to road.

Initial Traffic volume estimates

As preparation for the validity of our density studies, a simulated trip generation report was completed with analysis from Fehr & Peers traffic engineers. Fehr & Peers collected turning movement counts for a separate project at the SR-248 / Richardson Flat Road Intersection in January 2020. The 2020 counts at the intersection showed two-way volumes on Richardson Flat Road (east of SR-248) of 214 vehicles and 172 vehicles in the AM peak hour and PM Peak Hour, respectively. A high level assessment was performed to ascertain the peak hour trip generation on the Richardson Flat Road. The Roadway Level of Service was estimated based on planning level generalized peak hour two way volumes for roadway capacities.

Level of Service	Peak Hour Traffic Capacity Estimates
	2 Lanes
LOS B or better	≤ 1,098
LOS C	1,099 – 1,215
LOS D	> 1,215

Source: Fehr & Peers, based on FDOT Generalized Peak Hour Two-Way Volumes for developed areas less than 5,000 population, adjusted for non-state signalized roadway.

Fig. 13.1

As a generalized assessment, to preserve the existing Level of Service (LOS) B (or better), the different between the current Peak Hour Two way traffic Thresholds and the observed use from January 2020 is approximately 884 Peak hour two way trips – AM and 926 Peak hour two way trips - PM.

View-shed Corridors / Visual Impact analysis

As outlined in accordance with the "Sensitive Lands Overlay" (SLO) outlined in the Park City Land Management Code (LMC), the visual impacts have been evaluated to understand the areas of the CRW parcel which could hold the least invasive impact to the entry corridor along highway 40 and highway 248. Often considered the "back entrance" to Park City, this corridor is quickly becoming the front door for the increasing number of workers who migrated into town from the Heber valley and eastern summit county.

Along the approach coming south on highway 40, it's obvious the west ridge of the parcel provides the most prominent visual landmark for the area. As one would expect, the closer you get to the subject parcel, the more prominent the lower slopes of the land area become. But, as vehicles become adjacent to the CRW study area, the lower grades on the Northeast tip become obscured by the elevated grade of the Highway 40 corridor. This reinforces the initial identification of the Northeast corner of the parcel to be the least invasive for development.

site characteristics

Illust. 14.1 - Clark Ranch West Parcel as viewed from Hwy 40 Southbound

Illust. 14.2 - Clark Ranch West Parcel as viewed from Hwy 40 Southbound; as you approach from the north

Illust. 14.3 - The Clark Ranch West Parcel s Northeast corner becomes obscured by the grading for HWY 40 in close proximity

As you approach traveling northbound on Highway 40 from the south, the topography makes a transition from a easterly slope to more northeast facing slope. This transition in terrain obscures the view of the lowest most elevations on the parcel, which correspond to the same area in the northeast quadrant as identified by traveling in the southern direction.
As illustrated by the following illustrations, the lower Northeast corner of the site is the location of least visual impact from a variety of different locations in the vicinity.

Illust. 15.1 - The North portion of Clark Ranch West Parcel as viewed from HWY 248 near the Par k City Film Studios

Illust. 15.2 - The North portion of Clark Ranch West Parcel as viewed from the roundabout at the Park City Hospital

Illust. 16.1 - The North portion of Clark Ranch West Parcel as viewed from the intersection of Piper Way and Richardson Flat Road

Illust. 16.1 - The North portion of Clark Ranch West Parcel as viewed from the intersection of the rail-trail and Richardson Flat Road

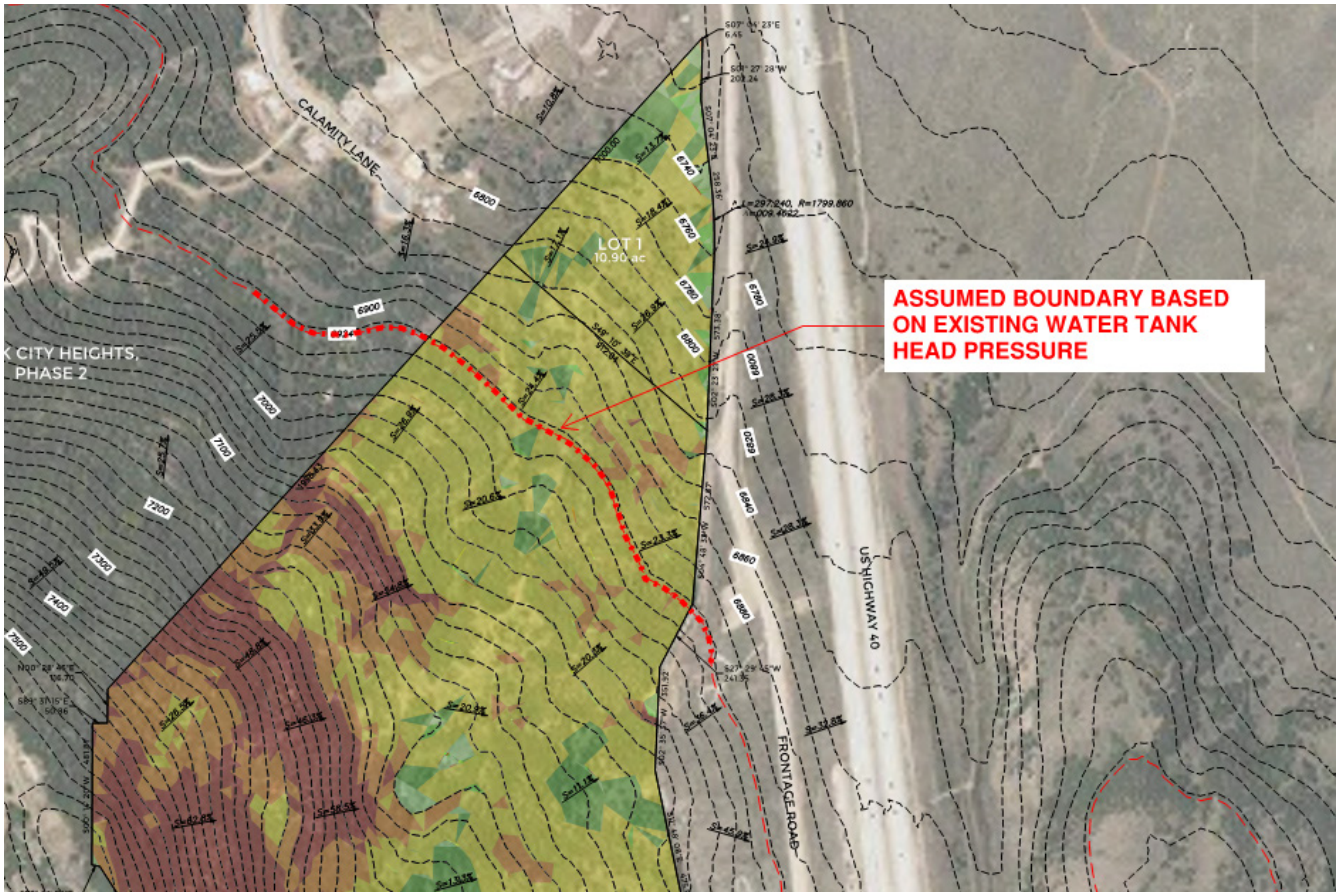
Utilities - Preliminary Assessment

Culinary water

The culinary water system is owned, operated, and maintained by Park City's Water Division. The Equivalent Residential Connection (ERC) is a unit of measurement that represents water demand per household. Utah Administrative Code: R309-510-7 defines peak day demand to be 800 gallons per day per ERC. Utah Administrative Code: R309-510-7 also provides guidance for outdoor irrigation demand. The proposed Clark Ranch Development is located in Map Zone 2 for "Low" Normal Annual Effective Precipitation. The corresponding irrigation demand per Table 510-3 is 2.8 gpm per irrigated acre Water access to the site is through the city's municipal water supply. The current holding tank located above and directly west of Park City Heights would be the supply branch to service any new development in the Clark Ranch Area. Currently, an existing 2,000,000-gallon storage tank services Park City Heights. The existing elevation of the storage tank is at elevation 7,017 feet. To maintain a minimum service pressure of 40 psi without booster pumps, the development of Clark Ranch may not exceed an elevation of 6917'. The proposed culinary water system for Clark Ranch will connect to an assumed 8"

Illust. 17.1 - Conceptual Water Connection layout

stub off the cul-de-sac of Calamity Lane in Phase 5 of Park City Heights. From the connection in the Calamity Lane, the proposed culinary water runs 2,331 linear feet of 10" C-900 PVC pipe the entire length of the new roadway, reconnecting at an intersection of the new road to provide a water loop. The development also requires a pressure reducing valve station to mitigate high water pressure due to elevation drop in the new water system.

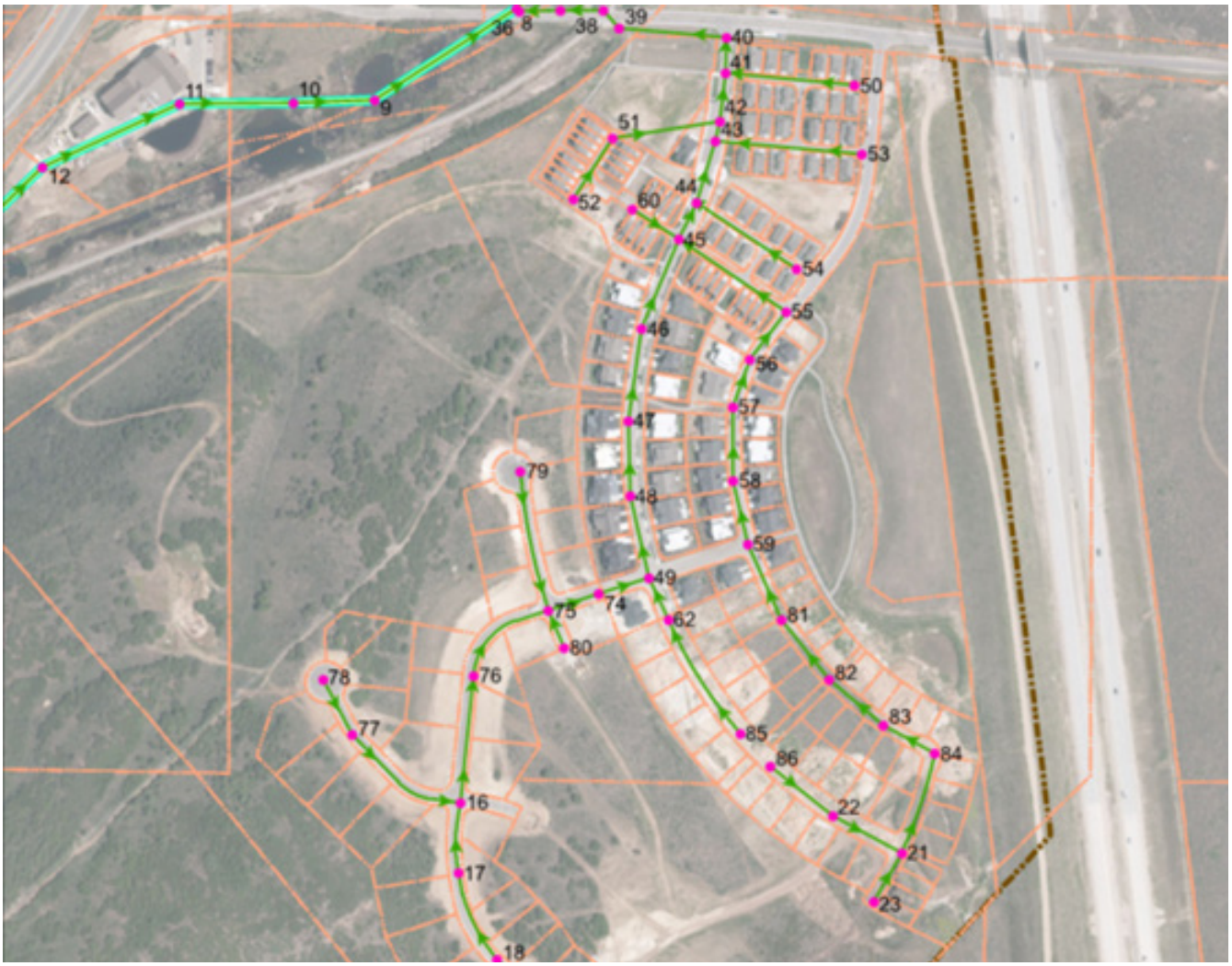


Illust. 18.1 - Assumed boundary based on existing water tank head pressure

Sanitary Sewer

Talisman Civil Consultants estimates that the Clark Ranch Development will require approximately 2,300 linear feet of 8" SDR-35 PVC pipe. See Exhibit 1 in the Appendix. The proposed sanitary sewer infrastructure will connect to existing manhole #23 and run the length of Piper Way in Park City Heights. See Figure 2 below. The conveyance system would ultimately direct wastewater flow to the Silver Creek Water Reclamation Facility where it is treated and returned to Silver Creek before eventually flowing to Echo Reservoir. According to discussions with SBWRD, the existing sewer line between manholes #58 and #59 limits the available capacity at 54.3 gpm. The existing sewer system has enough capacity to serve 229 units without requiring upgrades to the existing infrastructure. If the Clark Ranch Development were to build greater than the baseline of 229 units, the existing sewer line between manholes #8 to #58 to #59 must be upsized from an 8" pipe to a 12" pipe. Improvements to the sewer line between manhole #8 and #40 require special attention. The existing sewer line is shallow in slope

and also makes an aerial crossing over a natural waterway which will complicate design solutions.



Illust. 19.1 - Existing Sanitary Sewer map for the Park City Heights Development

Storm-water Management

The Park City Storm-water Management Program and the Park City Storm-water Drainage Design Manual dictates the parameters used to evaluate requirements for the Clark Ranch storm drain system. Important design parameters from these documents include but are not limited to:

- Pipe shall be designed to convey the 10-year storm recurrence interval
- Detention ponds shall be designed for the 100-year storm recurrence interval
- The allowable post-development discharge rate must be less than or equal to the pre-development discharge rate
- The minimum storm drain pipe diameter shall be 15"
- The source for precipitation data is NOAA Atlas 14

As of July 1st, 2020, the Utah Division of Water Quality has implemented a requirement to retain and infiltrate the 80th percentile storm event for new development projects that disturb greater than or equal to 1 acre. The 80th percentile storm depth for Park City is approximately 0.47".

Preliminary Soils Evaluation

A custom soil resource map for the CRW project area was included as part of a larger soils study on the adjacent Park City Heights project. As identified in the report, the majority of the soil consists of Loam/Clay/Cobbly Loam / Stony Loam – clay. The general depth to restrictive soils formation (Lithic Bedrock) was identified as 40"-60", with locally variable differences.
Although a complete Geotechnical report of the soils for this parcel has not been conducted, the data from the adjacent parcel for Park City Heights identified the following characteristics:

"The subsurface sequence generally consists of surficial clays underlain by clayey gravels with some sands and generally occasional cobbles. The clays generally extend to depths ranging from 2.5 – 9.5 feet....are moderately to highly plastic. These soils exhibit high expansive characteristics." Topsoil has been identified as 6"-12", containing major roots and organic materials.... Clays below the loose surface zone exhibit moderate strength and compressibility characteristics....Bedrock appears to consist of quartzite with relatively high strength and low compressibility characteristics."

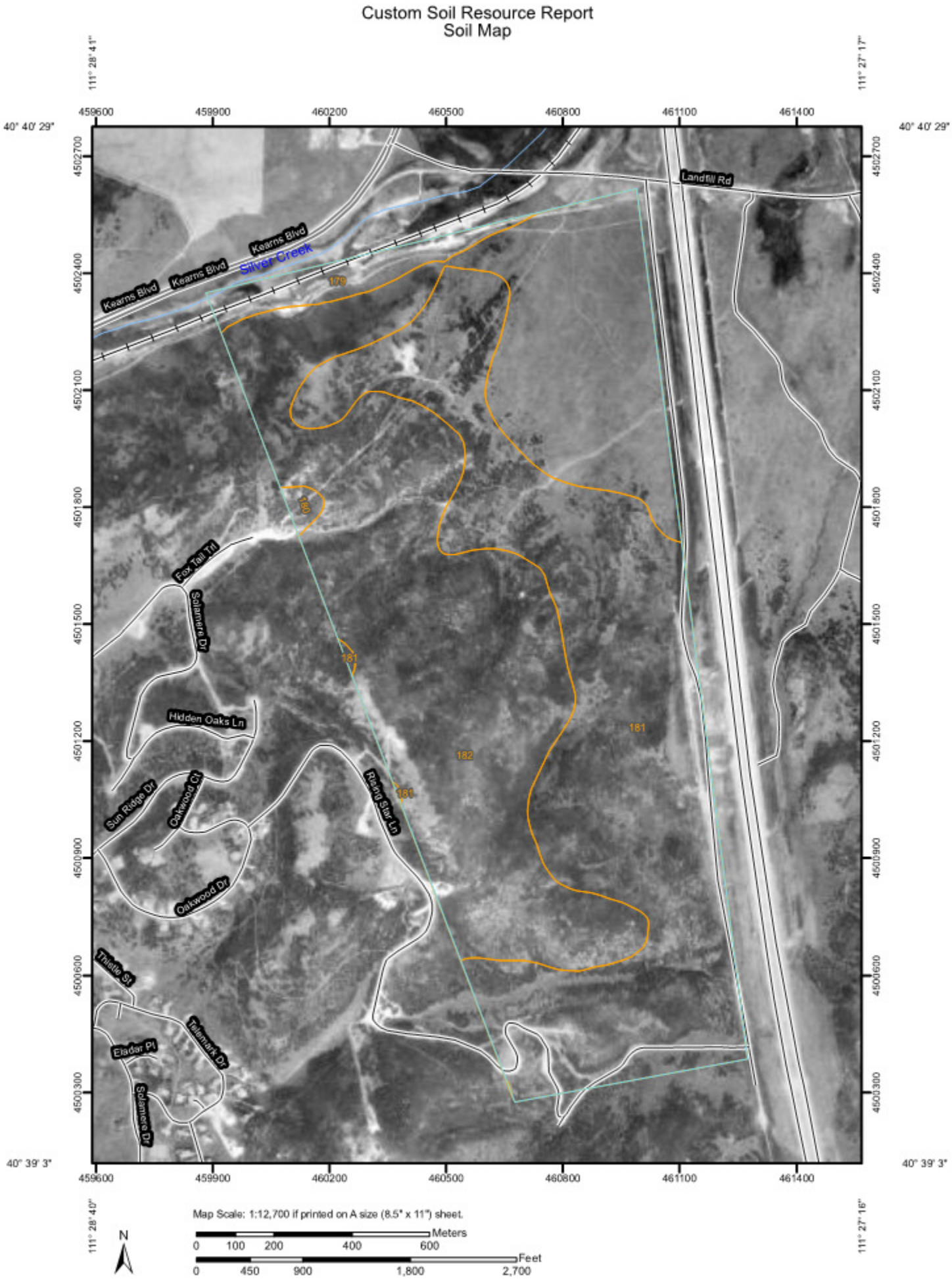
A full copy of the preliminary soils investigations are available in appendix H.

As of this study, no evidence has been found of significant soils contamination. The CLR parcel lies outside of the established Park City Soils Remediation boundary. It should be noted further exploration of development should include a soils management plan. The plan would need to be coordinated with the soils management team at Park City Municipal Corporation, and include, as a first step, a coordinated testing protocol which follows the established method outlined by the city.

Map Unit Legend

Summit Area, Utah, Parts of Summit, Salt Lake and Wasatch Counties (UT613)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
179	Wanship-Kovich loams, 0 to 3 percent slopes	14.8	3.1%
180	Yeates Hollow-Henefer complex, 3 to 15 percent slopes	2.1	0.4%
181	Yeates Hollow-Henefer complex, 15 to 30 percent slopes	205.3	42.9%
182	Yeates Hollow-Henefer complex, 30 to 60 percent slopes	256.9	53.6%
Totals for Area of Interest		**479.1**	**100.0%**

Fig. 20.1-Major soils composition for the Clark Ranch West Parcel Source: "Custom Soil Resource Report for ...Park City heights Soil Survey", 01/2011, USDA / Natural Resources Conservation Service



Illust. 21.1 - map illustrating the major soils composition for the Clark Ranch West Parcel; Source: "Custom Soil Resource Report for ...Park City heights Soil Survey", 01/2011, USDA / Natural Resources Conservation Service

Environmental Analysis / Hazardous assessment

The property consists of currently undeveloped lands adjacent to other residential developments and transportation infrastructure. Ground cover on the property consists mainly of grasses, sagebrush, gamble oak and small clusterings of pine near the ridge on the far west side. The existing use of the property is primarily open space, with a small collection of trails which traverse the upper portions (west side) of the study parcel.

The primary **historical use** of the property has been for livestock grazing for 3 to 4 generations. The property was originally owned by the Clark family, and subsequently purchased by the Gilmor family around the 1940's, who had previously leased the property for their livestock operations.

General indications and research suggest no direct contamination could be anticipated from the site (The Clark Ranch West Parcel). Although the Clark Ranch Conservation Resources Inventory mentions a EPA Phase 1 Environmental Assessment from 2015 (by Kleinfelder) for the Clark Ranch parcels, a GRAMA request to Park City Municipal produced no results. The Conservation Resources Inventory makes mention of reported higher than normal lead levels (pg 9), and mentions the proximity is "... located directly south of the Richardson Flats Tailings facility..." Therefore, it is assumed this is in reference to the east parcel of the Ranch. It should be of note, the western parcel, due to its proximity of the property to the Richardson Flat tailings site as well as to the Park City Heights (with historical slurry transfer ditch containing trace tailings as well as lead containing soil and cement debris), a site specific Phase I environmental site assessment should be conducted prior to any anticipated development.

Wildlife – Due to the encroaching infrastructure, the potential for wildlife habitat fragmentation is high. The Clark Ranch Conservation Resources inventory lists the parcels as a migratory area for Mule deer, Elk, and Moose. It is also listed as a potential habitat for Sage grouse, which is listed as a "Species of Concern" by the BLM and US Forest service. Although the last documented sighting of the Greater Sage Grouse is listed as 2008. It is recommended that any development be clustered to reduce habitat fragmentation, although encroachment of development to natural habitats is always a threat to the existing wildlife using the parcel. It is recommended the city "closely manage and regulate" the areas where domestic dogs may be off leash, and "actively develop" trail connectivity and discourage rouge trails from old trails and road cuts. (Wheeler, Morris and Coles-Ritchie, "Clark Ranch Conservation Resources inventory" 2015)

Vegetation – Similar threats to the native vegetation exist in parallel to those of the wildlife threats. A secondary consideration is the potential spread of noxious weeds, which can be exacerbated by grubbing, clearing and excavation activities.

Fire Hazard Assesment - Park City requires that all residential structures be fire sprinklered which will help mitigate some risk of wildfire. Pertianing to fire/life safety, the proposed Frontage Road access will need to be improved and maintained, as assumed.

The Park City Fire District adopted Appendix D of the International Fire Code. If access to the roof of

any of the buildings is more than 30 feet measured from grade, an Aerial Fire Apparatus Access Road is required. The road must be no less than 26 feet wide measured from inside edge of curb to inside edge of curb and must be between 15 and 30 feet from the structure in that case. It will be important to be careful consider the height and location of the proposed structures.

Water supply for fire suppression should be verified for the fire hydrants. The fire hydrants must be capable of 2000 GPM at 20 PSI.

One item of note is the distance from the closest fire station to the project. The distance from the nearest fire station to the cul-de-sac on Calamity Lane as 4.3 miles. Portions of the Clark Ranch development parcel may fall outside of the 5 mile limit that the Insurance Services Office (ISO) puts on projects. This may cause an insurance problem for the properties. PCFD owns a parcel of land on Round Valley Drive that will reduce that distance, but , incollaboration with PCFD during the information gathering process they have indicated there are no immediate plans to construct a station on this parcel. The call volume in that area does not warrant the cost of the station and the personnel required to staff it at the current time.

Historical Analysis

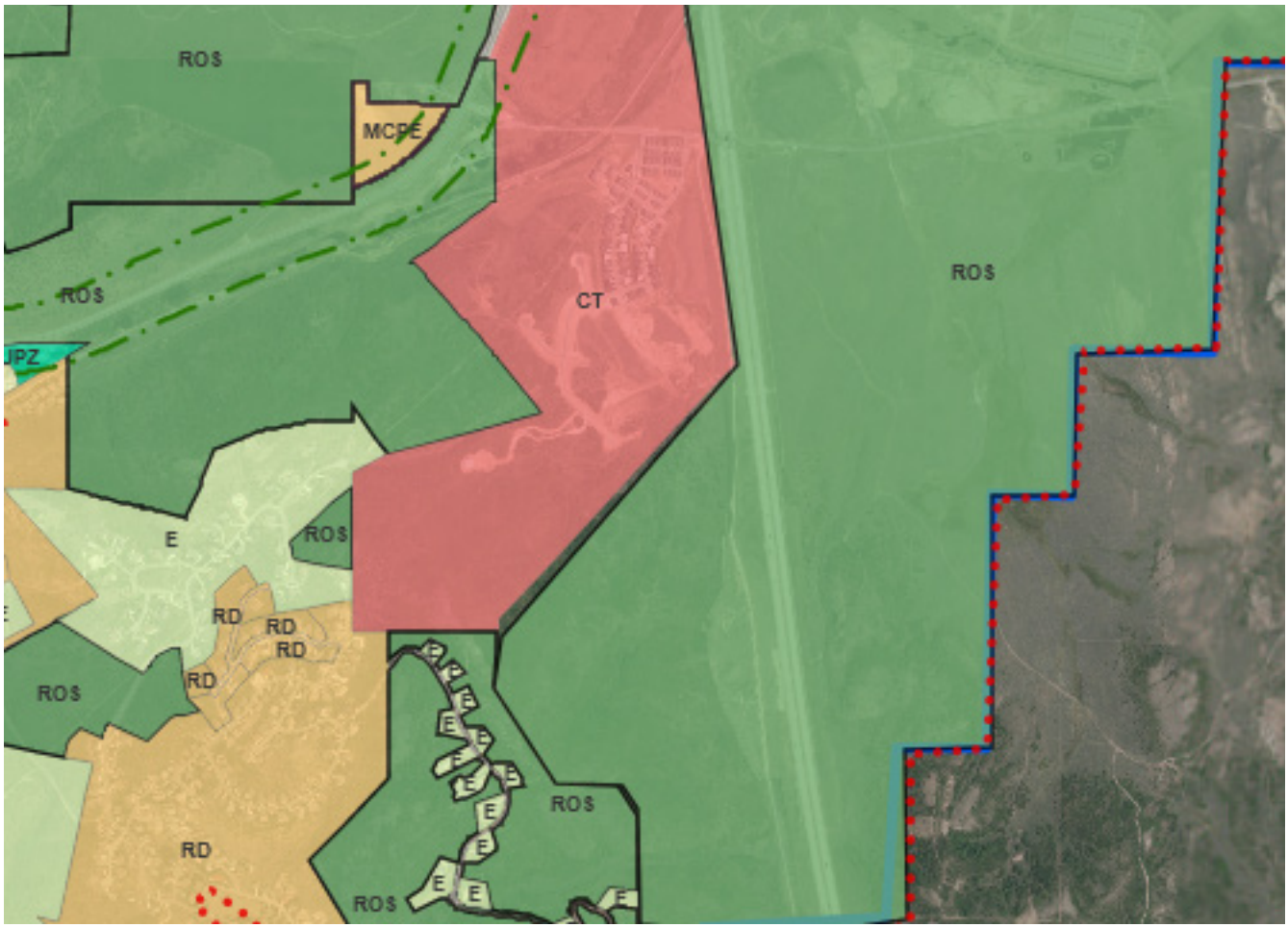
There are currently no historical structures or significant sites listed on the Clark Ranch open space parcels on file with the Park City Planning Department. The historical uses of the property include use as grazing grounds for livestock and a dairy farm operated by the Clark Family for 3 to 4 generations prior to the purchase of the property by the Gilmor Family in the early 1940's. There are mention of existing concrete slabs on the east parcel, remnants of the structures associated with the dairy barn and farm structures prior to the 1940's.

Current Zoning & LMC assessment

The Park City "Clark Ranch" property on the west side of Highway 40 is comprised of 2 parcels of roughly equal size, totaling over 250 acres, in the Recreation Open Space (ROS) zone (the "Clark Ranch West parcels"). The ROS zone does not allow for any residential uses and is not compatible with the Affordable Master Planned Development (AMPD) provisions in the Park City Code. Any affordable project on this property would need to be re-zoned to a zone that is compatible with the AMPD provisions or utilize an entirely new zone.

Our team has developed 3 different density and site plan layouts, all of which can be accommodated through the existing AMPD process, once the subject property is re-zoned to an underlying zone that allows for the AMPD process. Any specific issues or requested changes to the AMPD provisions can be effectuated via a text amendment to the AMPD requirements. For example, in the layouts provided by our team that utilize a more dense, multi-family concept, the "10-foot step back" requirements that then allow an applicant to "earn" a maximum height of 45 feet for a given building could be removed or amended through a text amendment for projects with at least 90-95% open space. Due to the unique

nature and sheer size of this property, the City could tailor the amendments to the AMPD process to impact only this project, or to incentive well-clustered, affordable housing projects on the perimeter of ROS zoned land within the City. The most accommodating zone for this project is the Residential Multiple (RM) zone. It provides the most regulatory flexibility for a clustered, affordable, development.



Illust. 24.1 - map illustrating the current zoning district for Clark Ranch West Parcel; Source: Park City Planning Department map gallery

The entitlements process we envision for development of the property into a viable affordable housing project would involve at least sixteen steps, in the following general sequence: (1) Council's decision to include of one or both of the Clark Ranch West parcels in the proposed project (a total project size of roughly 125 acres if one parcel is included, or 250+ acres, if both parcels are included); (2) Council's initial decision regarding proposed subsidies for the affordable components of the project; (3) the selection of a private development partner who would serve as the project applicant; (4) negotiation and memorialization of the terms of a public/private partnership (Public/Private Partnership Agreement); (5) further refinement of project parameters with input from the private partner; (6) staff review, input, and eventual endorsement; (7) negotiate and draft an initial Development Agreement

as a condition of rezoning to constrain the proposal to the negotiated configuration, design, cost, construction timing, and density, (8) Planning Commission review and recommendation to rezone and AMPD to correspond to the Development Agreement; (9) modification of the project based on Planning Commission input; (10) Council input and ultimate rezone, subject to the Development Agreement; (11) as the LMC currently reads, a likely a second AMPD Development Agreement within six (6) months of the Planning Commission's approval of the AMPD; (12) a Development Improvement Agreement, infrastructure assurance, and recordation of affordable housing deed restrictions; (13) horizontal infrastructure installation; (14) vertical construction; (15) selection of qualified tenants; and (16) occupancy. This sequencing analysis assumes no text amendments to streamline the process to assure maximum public participation and scrutiny.

Once the initial Development Agreement has been negotiated with the chosen private developer, and the parcel has been rezoned to an accommodating zone, the applicant would then pursue an AMPD process with the Planning Commission to effectuate the disturbance of, and development on, only +/- 12 acres in the northeastern most portion of the property, with the remainder of the property (110 - 238+ acres) fully deed restricted as open space. This process ensures that a portion of the property can be developed as affordable housing, with most (90-95%) of the Clark Ranch West parcels remaining as open space.

Illust. 25.1 - one option for access to the Clark Ranch West parcel. Source: Talisman Civil

The road layout developed as part of option A includes a balance of cut and fill operations, while selecting the most efficient and effective circulation option. This option allows the project to be phased, with the lower section of the road to be completed first, and the potential to be built out completely before the upper phase 2 is added. All of the slopes are compatible with the utility infrastructure, while maintaining lower slopes to the road sections providing slightly more linear road distances for the location of residential units.

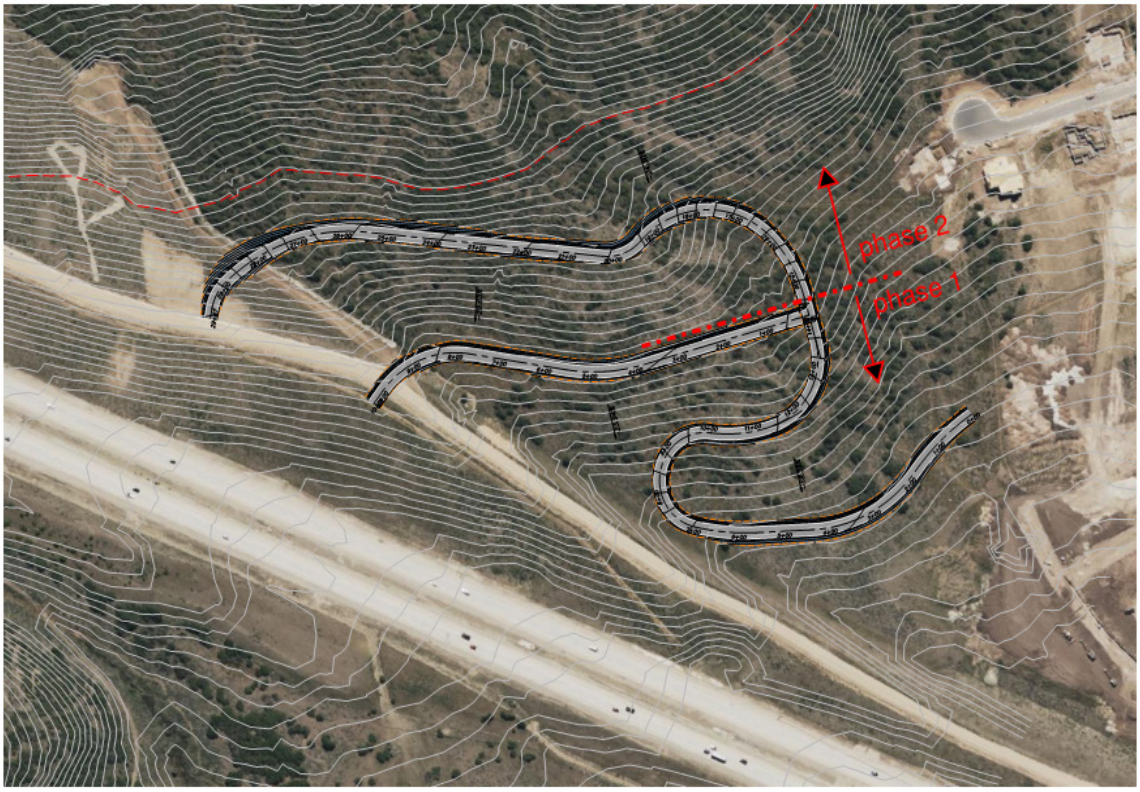
site circulation option A

Illust. 26.1 - second option for access to the Clark Ranch West parcel. Source: Talisman Civil

The road layout for option B looks to reduce the amount of overall site retain-age, while striking a balance between cut and fill operations. Due to the increased grading which happens at each road intersections, this option simplifies the connection and grading at the intersection of the middle access road. All of the slopes are compatible with the utility infrastructure. There is an increase in the linear distance to which this layout runs perpendicular with the topography, which slightly limits the street frontage available for the location of residential units.

site circulation option B

Illust. 27.1 - phasing illustration for the selected road layout Source: Talisman Civil



Illust. 27.2 - phasing illustration for the selected road layout Source: Talisman Civil

Part II - Conceptual Density Plan Proposals & Evaluation

Concept Density Plans

Illust. 30.1 - Illustration of the town-home unit typologies as part of the overall site design (stereotomic)

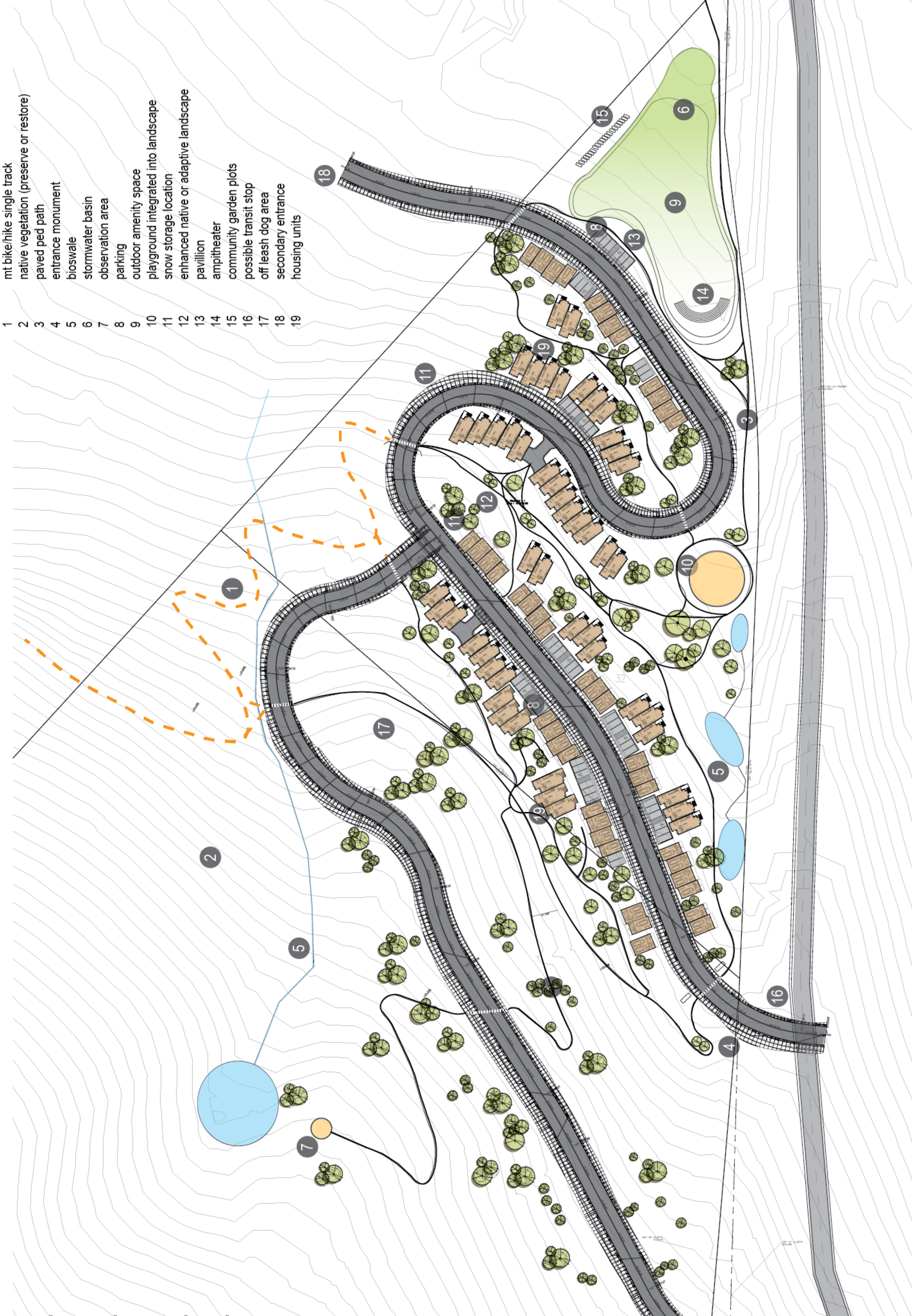
Density Option 1

The first density option plan proposes to provide a bridge between the single family & cottage typologies of the adjoining Park City Heights Development. The 90 Units proposed in this option represent the least dense option; which utilizes only a fraction of the capacity the existing infrastructure. The material and massing represent a unique approach which upholding the existing character of Park City. While providing a human centric focus to increased density, the row of town-homes is moderately spaced along the minimal road access being conscious and working in harmony with the steep topography. The overall character of the site and inherent characteristics of the parcels drive the

illust. 31.1 - conceptual visualization of the town-homes typology with shared entry access. The open areas between the units provide a unique approach to walk-ability by decoupling the pedestrian paths from the roadways. (Stereotomic)

Illust. 32.1 - Conceptual visualization of the smaller scale town homes with shared entry and shared parking as part of the overall plan. Shared open spaces allow generous access to the natural landscape and promote a sense of community (Stereotomic)

design to be sensitive to the existing open space by clustering the development to the lower north east corner of the site. The major constraints (topography, access, infrastructure and visual impact) drive the overall layout. Units are stretched along the existing topography, and provide much of the retaining necessary to install the roadways. This allows abundant green-space and pedestrian trails to weave in and out of the units, provide visual and audible access in close proximity to all units.



Density Option 1 - site plan

illust. 33.1 - (Stereotomic)

Illust. 34.1 - conceptual images to illustrate the option of public park / gathering spaces which double as retention pond areas - public art benches and / or amphitheater options

illust. 34.2

Simplified road layouts and amplifying infrastructure to double as outdoor amenity spaces work to nestle the development deep into the natural fabric of the lots. By utilizing the topography to define the characteristics of the development, a unique, park city centric design emerges to embrace what it means to live efficiently in the mountain west.

While this option is test fit across phase I of the development, phase 2 could be developed to provide additional units or used to reduce the developed area density by dispursing 90 units across both phase I and phase II.

The total density (90 units total, 0.72 units / acre) make the least efficient use of the carrying capacity of the site (culinary & wastewater capacities) with a trade-off of lower overall budget to construct, and the least overall scale of the massings.

illust. 35.1

illust. 35.2 - conceptual images to illustrate the option of public park / gathering spaces which double as retention pond areas - public art benches and / or amphitheater options Source: Stereotomic Arch & Design

illust. 36.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 36.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

illust. 37.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 37.2 - north birdseye view looking south along hwy 40 (Stereotomic)

Density Option 1 Statistics

Density	Unit size (SF)	# of units		Units per acre	0.72	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	6.9	
	5,455,377	124.98		**124.98**		
Units total					**90**	
Parking total (req'd)					**115**	
Total F/A/R					**0.05**	
Open Space						
Unit distribution					***PARKING PER MPD**	****PARKING PER AMPD**
Phase 1+2 - TH units			**SF subtotal**			
studio	400	10	5000	0%	10.0	0
1 bdr	600	50	36250	0%	50.0	0
2 bdr	900	50	55000	0%	50.0	0.5
3 bdr	1100	30	41250	0%	45.0	1
bldg units		**140**				
bldg park required					**155**	**2**
bldg park provided						
Phase 1 - TH units						
3+ bdr	1800	5	9000	6%	5	0
1 bdr	900	30	27000	33%	30	0
2 bdr	1300	30	39000	33%	30	0.5
3 bdr	1600	25	40000	28%	50	1
bldg units		**90**				
bldg park required					**115**	**2**
bldg park provided						
Total Residential	Phase 1	**90**	**115,000.00** SF		**115**	**3**
	Phase 2	140	**137,500.00**			
Commerical			**0** SF		**0**	**0**
Total SF			**115,000**			
Max F/A/R					**5,455,377**	**124,681**
					5,340,377	**9,681**
Total Parking, Req'd					**115**	**3**
Total Parking, Potential					**0**	**0**

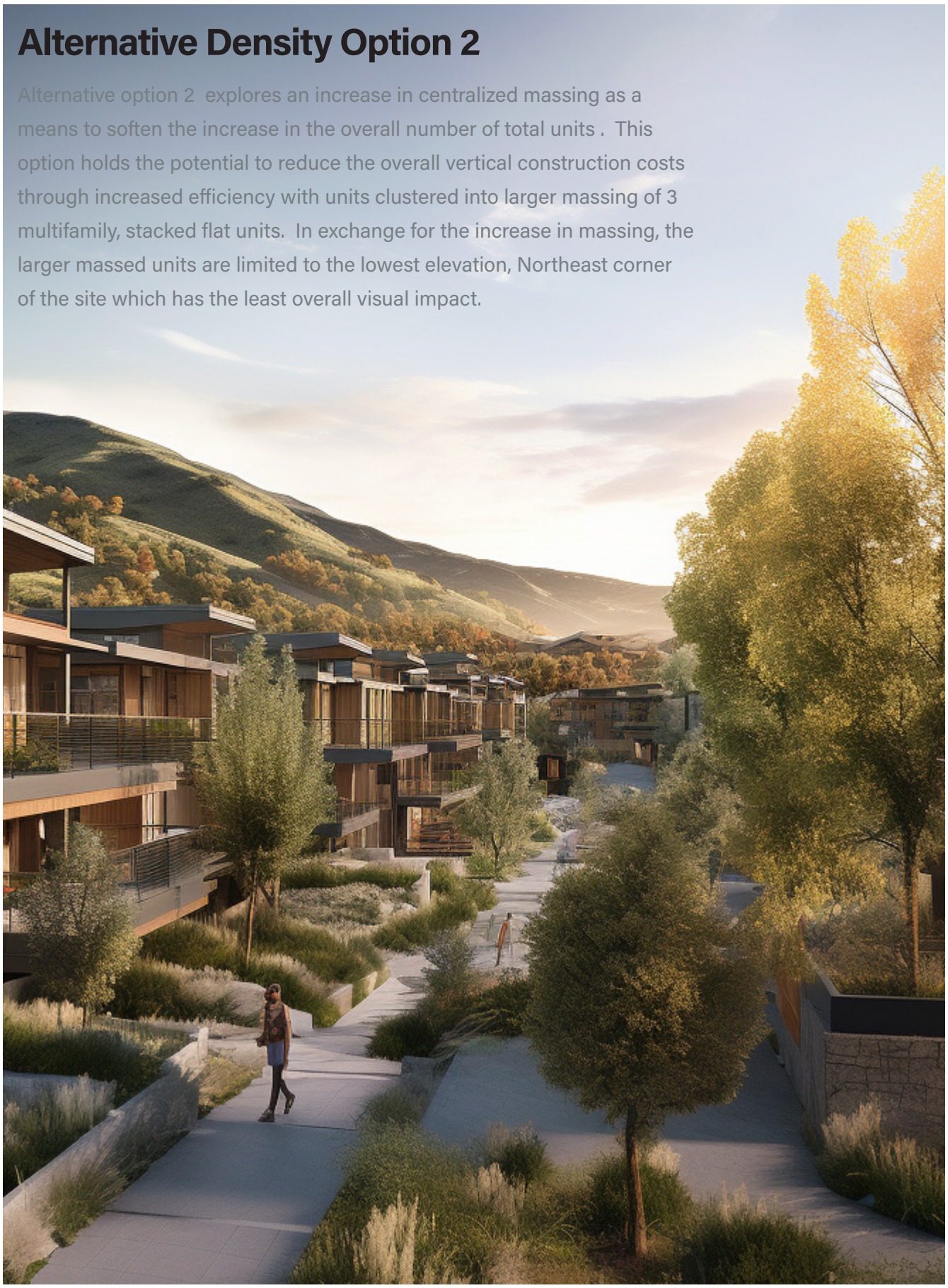
Total F/A/R **0.05**

Preliminary Budget		$ / sf		Per Unit Avg
	Phase 1	**450**	**$51,750,000.00**	**$575,000.00**
		350	**$40,250,000.00**	**$447,222.22**
	Phase 1+2	**450**	**$61,875,000.00**	**$441,964.29**
		350	**$48,125,000.00**	**$343,750.00**

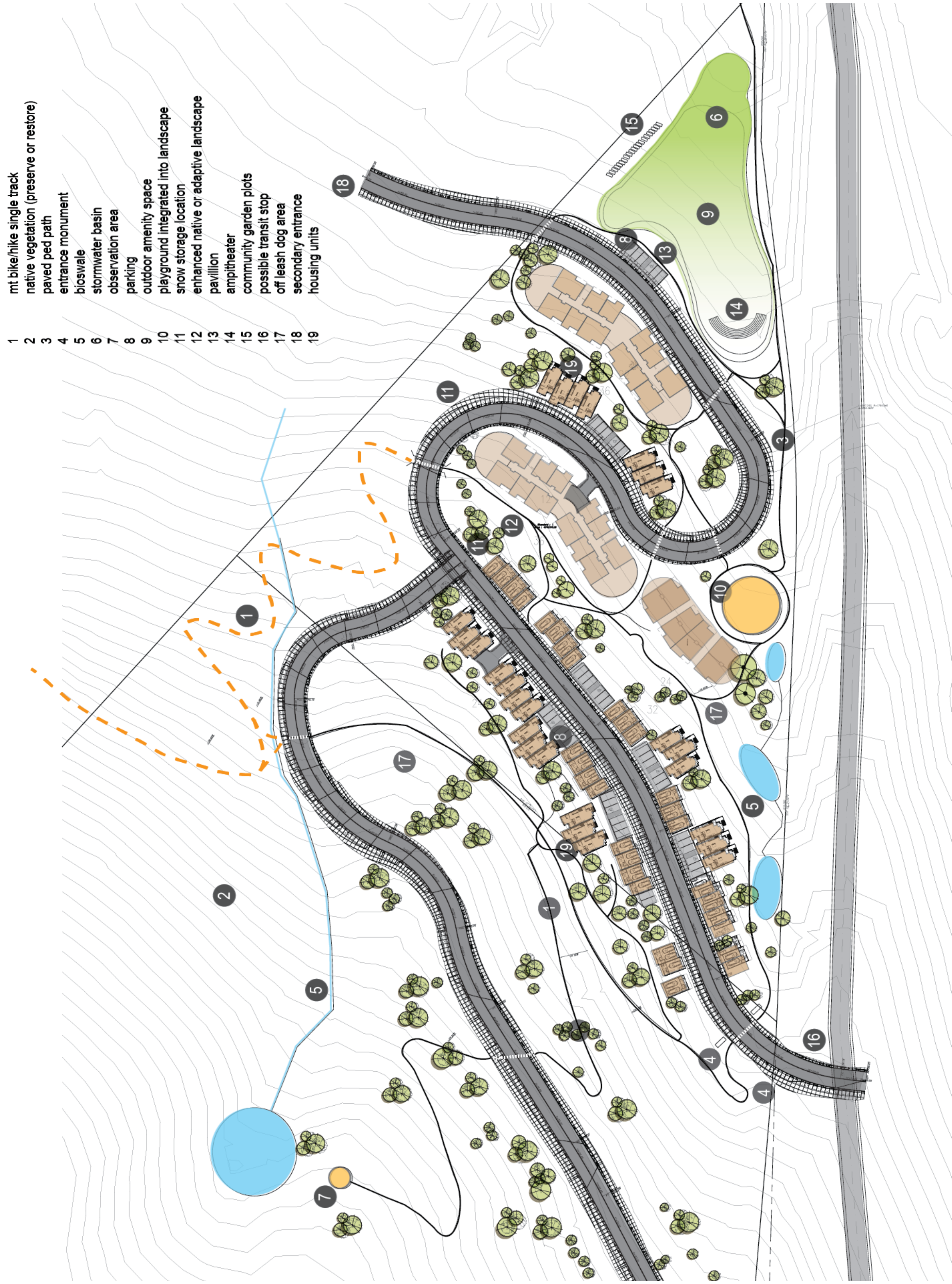
fig. 38.1 - (Stereotomic)

Alternative Density Option 2

Alternative option 2 explores an increase in centralized massing as a means to soften the increase in the overall number of total units . This option holds the potential to reduce the overall vertical construction costs through increased efficiency with units clustered into larger massing of 3 multifamily, stacked flat units. In exchange for the increase in massing, the larger massed units are limited to the lowest elevation, Northeast corner of the site which has the least overall visual impact.



illust. 39.1 (Stereotomic)



Alternative Density Option 2 - site plan

illust. 40.1 (Stereotomic)

The second option in this feasibility plan provides 150 units, consisting of both town-home units and stacked flat units. The stacked flats would be constructed of 3 stories or less above ground, with the potential for structured parking on the lowest level which could be contained fully subterranean. This unit yield is currently distributed across the first phase of the road layout, and a phase II could provide either an increase in units or spread the units out over a larger land area. The overall character of the site and inherent characteristics of the parcels drive the design to be sensitive to the existing open space by clustering the development to the lower north east corner of the site. The major constraints (topography, access, infrastructure and visual impact) drive the overall layout. Units are stretched along the existing topography, and provide much of the retaining necessary to install the roadways. This allows abundant green-space and pedestrian trails to weave in and out of the units, provide visual and audible access in close proximity to all units.

While this option is test fit across phase I of the development, phase 2 could be developed to provide additional units or used to reduce the developed area density by dispursing the total (150) units across both phase I and phase II.

illust. 41.1 - conceptual visualization of the medium scale multifamily structures with shared entry and shared parking. (Stereotomic)

illust. 42.1 - The larger units of stacked flats occupy the lowest, North east corner of the sight with the least visual impact on the community. (Stereotomic)

illust. 43.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 43.2 - north birdseye view looking south along hwy 40 (Stereotomic)

illust. 44.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 44.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

Alternative Density Option 2 Statistics

Density	Unit size (SF)	# of units		Units per acre	1.20	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	11.6	
	5,455,377	124.98		**124.98**		
Units total					150	
Parking total (req'd)					163	
Total F/A/R					0.06	
Open Space						
Unit distribution					***PARKING PER MPD**	****PARKING PER AMPD**
MF / stacked flat Units			**SF subtotal**			
studio	400	9	3600	9%	9.0	0
1 bdr	600	35	21000	37%	35.0	0
2 bdr	900	35	31500	37%	35.0	0.5
3 bdr	1100	16	17600	17%	24.0	1
bldg units		**95**				
bldg park required					**103**	**2**
bldg park provided						
Townhome Units						
3+ bdr	1800	10	18000	18%	10	0
1 bdr	900	20	18000	36%	20	0
2 bdr	1300	20	26000	36%	20	0.5
3 bdr	1600	5	8000	9%	10	1
bldg units		**55**				
bldg park required					**60**	**2**
bldg park provided						
Total Residential	Phase 1	**150**	**143,700.00** SF		**163**	**3**
	Phase 1+2	**200**	**181,200.00**			
Commerical			**0** SF		**0**	**0**
Total SF			**143,700**			
Max F/A/R					**5,455,377**	**124,681**
					5,311,677	**-19,019**
Total Parking, Req'd					**163**	**3**
Total Parking, Potential					**0**	**0**

Total F/A/R **0.06**

Preliminary Budget		$ / sf		Per Unit Avg
	Phase 1	**450**	**$64,665,000.00**	**$431,100.00**
		350	**$50,295,000.00**	**$335,300.00**
	Phase 1+2	**450**	**$81,540,000.00**	**$407,700.00**
		350	**$63,420,000.00**	**$317,100.00**

fig. 45.1 - (Stereotomic)

Alternative Density Option 3

Density Option 3 provides a smaller scale alternative to increased unit counts. Spreading and staggering the units across the land, while stepping the massing complimentary with the landscape, allows a reduction in the overall massing while occupying a higher percentage of the overall developable area. The unit typology is a morphed version of the standard stacked flats typology. While the overall number of units is increased to 230 total units, the majority of the units are smaller in scale and area. The overall massing of the units and the amount of relief in the massing is increased to minimize the scale of the visual impact. This option may have the highest upfront cost to develop, it would be more financially effective, as it is assumed this unit type will generally be more cost effective to build.

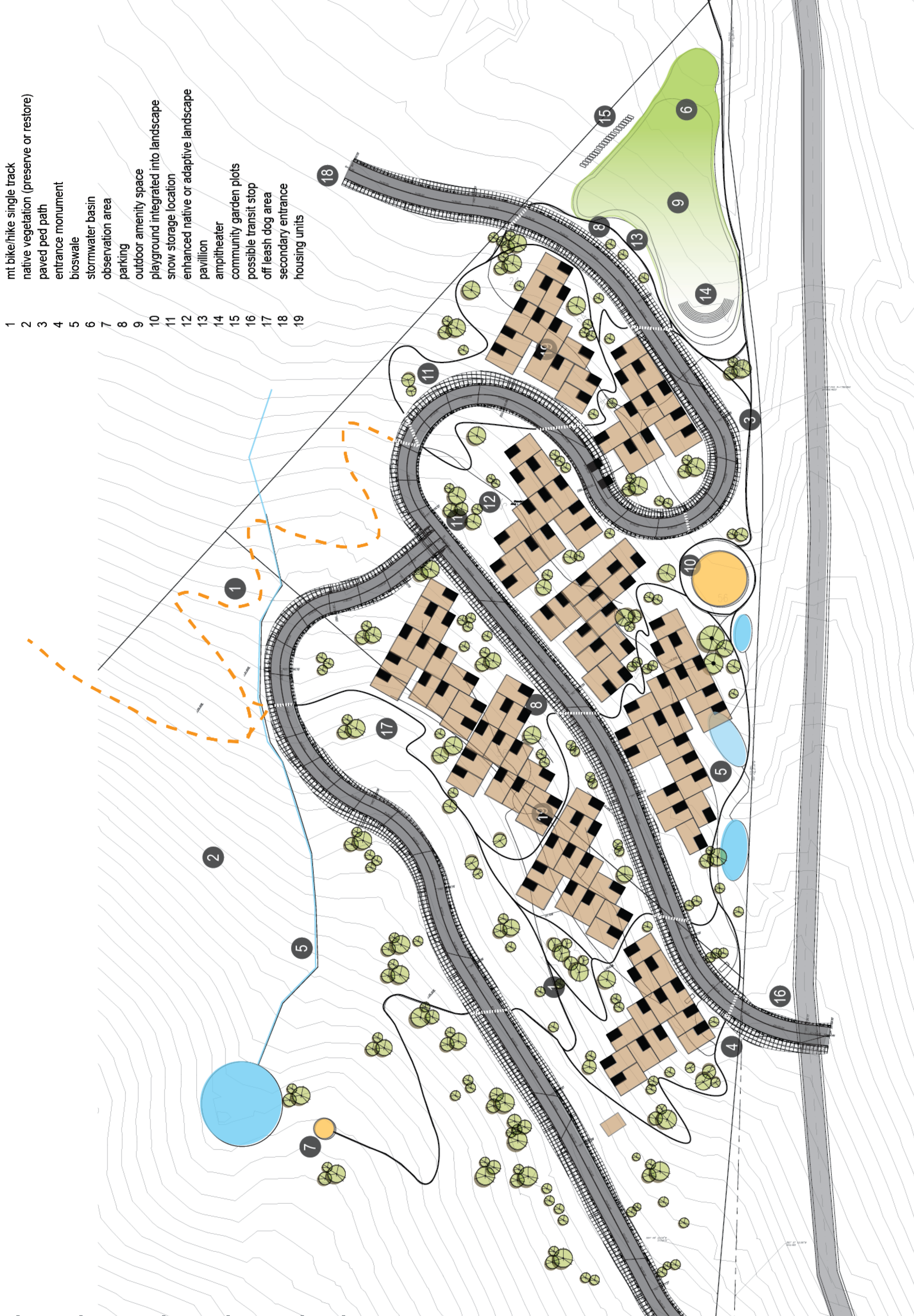
illust. 46.1 - (Stereotomic)

Several optimization strategies could be used within this scheme to not only increase the overall energy efficiency, but significantly offset the carbon footprint. Shared, or chained, heating/cooling systems utilizing a ground source heat exchange system hold the potential to decrease the overall energy use by up to 50%. Prefabricated elements could be used to lower the overall cost to produce, as well as minimize the time to erect on site. The massings for this option would be limited to generally 2 stories or less, and offset with the topography to lower the overall footprint.

This option incorporates both Phase I & Phase II of road development. Access to the upper portions of the residential units would be required for adequate fire protection access.

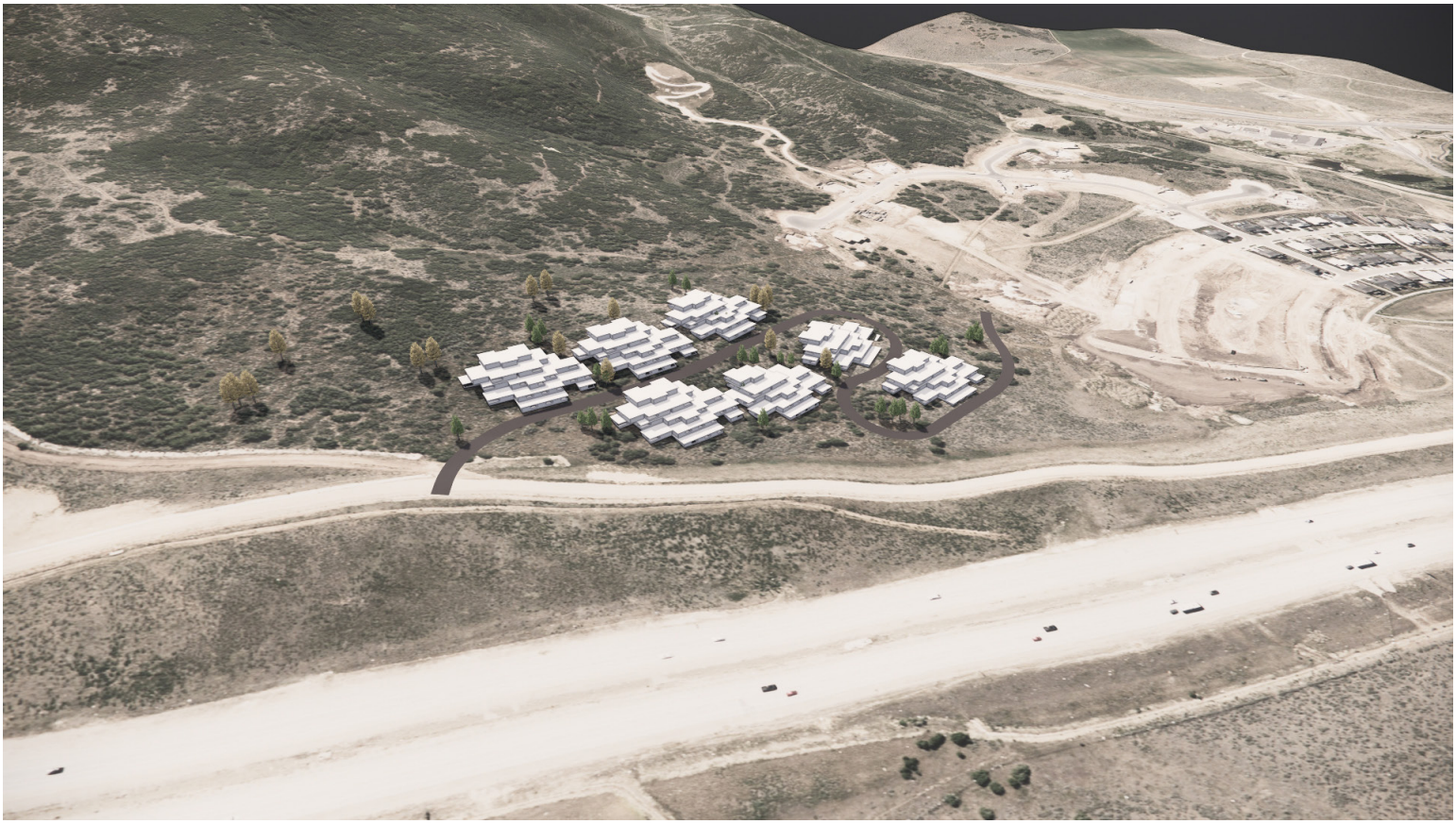
illust. 47.1 - conceptual visualization of the scale of the multifamily structures with shared entry and shared parking. The low profile structures with shared open areas between the units provide a unique approach to walk-ability and close access to nature. (stereotomic)

illust. 48.1 - Conceptual visualization of the smaller scale express of the increased density, 230 units total. (stereotomic)



Alternative Density Option 3 - site plan

illust. 49.1 - (Stereotomic)



illust. 50.1 - east view of the massing as it relates to the lower hillside (Stereotomic)

illust. 50.2 - south birdseye view looking north east towards the junction of hwy 248 & hwy 40 (Stereotomic)

illust. 51.1 - West view of the massing as it relates to the lower hillside (Stereotomic)

illust. 51.2- north birdseye view looking south along hwy 40 (Stereotomic)

Alternative Density Option 3 Statistics

Density	Unit size (SF)	# of units		Units per acre	1.84	
Parcels		acre				
PC-SS-121-X	5455377	124.98				
	0					
Open Space		112		89.6%		
Developed area		12.98		10.4%	17.7	
	5,455,377	124.98		**124.98**		
Units total					**230**	
Parking total (req'd)					**265**	
Total F/A/R					**0.08**	
Open Space						

Unit distribution					*PARKING PER MPD	**PARKING PER AMPD
BLDG - Stacked Flats			**SF subtotal**			
studio	400	20	8000	11%	20.0	0
1 bdr	600	65	39000	35%	65.0	0
2 bdr	900	60	54000	32%	60.0	0.5
3 bdr	1100	40	44000	22%	60.0	1
bldg units		**185**				
bldg park required					**205**	**2**
bldg park provided						
BLDG - Townhomes						
MF Units	1800	0	0	0%	0	0
1 bdr	900	15	13500	33%	15	0
2 bdr	1300	15	19500	33%	15	0.5
3 bdr	1600	15	24000	33%	30	1
bldg units		**45**				
bldg park required					**60**	**2**
bldg park provided						
Total Residential		**230**	**202,000.00** SF		**265**	**3**
		275	**235,750.00**			
Commerical			**0** SF		**0**	**0**
Total SF			**202,000**			
Max F/A/R					**5,455,377**	**124,681**
					5,253,377	**-77,319**
Total Parking, Req'd					**265**	**3**
Total Parking, Potential					**0**	**0**
Total F/A/R			**0.08**			

Preliminary Budget	$ / sf		Per Unit Avg
phase 1	**450**	**$90,900,000.00**	**$395,217.39**
	350	**$70,700,000.00**	**$307,391.30**
Phase 1+2	**450**	**$106,087,500.00**	**$385,772.73**
	350	**$82,512,500.00**	**$300,045.45**

fig. 52.1 - (Stereotomic)

Density Option Comparisons

To frame the scale of each density option presented as part of the study, two distinct precedents have been analyzed, to provide a context to the proposed density relative scale. The Kings Crown development adjacent to Park City Mountain Resort was selected based on the similarity to the sloped topography to Clark Ranch West as well as the moderate density. Park City Heights was selected

KINGS CROWN - 2019

illust. 53.1 - (https://www.parkcitykingscrown.com/

PARK CITY HEIGHTS - 2013

illust. 53.2- (https://ivoryhomes.com/community-details/)

because of its relative proximity to the project, and its context, which includes a significant open space contained on 2 sides of the development.

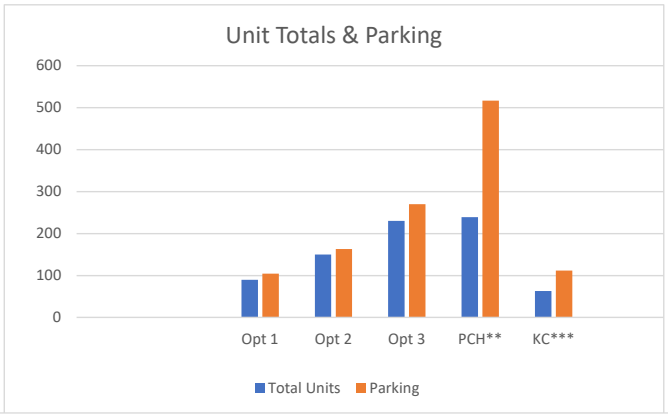
As figure 53.3 illustrates, both Kings Crown and Park City Heights include a significant portion of the overall land included as dedicated open space. All three options for Clark Ranch included as part of this study increase the dedicated open space to more than 89% (given the 125 unit parcel PC-SS-121-X is included as a minimum). This increase of open space comes with a trade-off; the units used for comparison for Clark Ranch are significantly smaller in overall scale. A second strategy to maximize the open space is the density of units within the developed area. This measurement is a means to understand the compactness of the density proposed. All but density option 3 are lower in the number of units per developable area when compared to Kings Crown. All of the density options are higher in the number of units per developable area when balanced against Park City Heights.

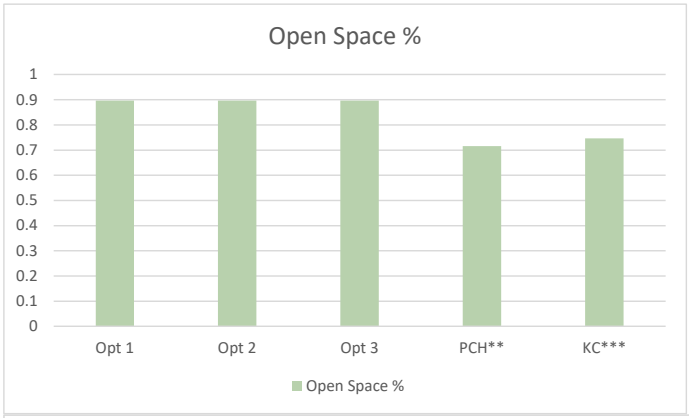
There are 2 decisive factors which must be considered when using this stat as a comparison. The first is the average unit size; even option 1 of this feasibility study, which has the highest average square foot per unit, is less than half (56%) of the Kings Crown Development. The second consideration is the steep topography of the site, and the SLO considerations. Both the moderate slopes and the Sensitive

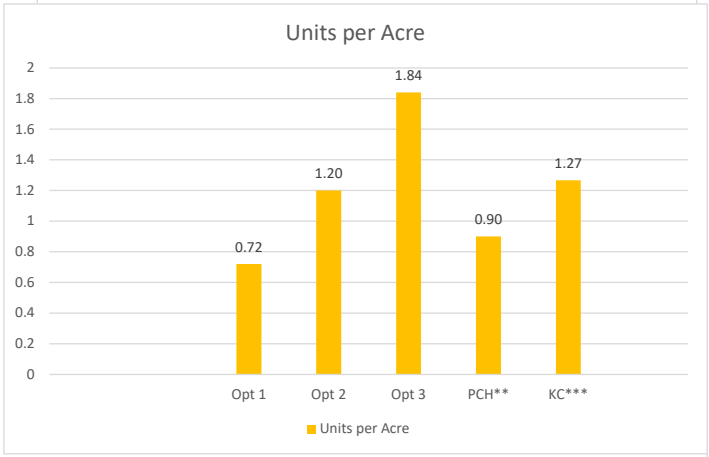
Comps	Total Units	Parking	Residential unit yield	Units per Acre	Avg SF per Unit	Calculated Occpancy*	Open Space %	Units per Developed Area
Opt 1	90.00	115	115,000	0.72	1,277.78	198.00	89.61%	6.93
Opt 2	150.00	163	143,700	1.20	958.00	332.40	89.61%	11.56
Opt 3	230.00	265	202,000	1.84	878.26	498.00	89.61%	17.72
PCH**	239.00	517	707,000	0.90	2,958.16	745.20	71.55%	3.51
KC***	63.00	112	142,129	1.27	2,256.02	174.00	74.67%	16.58

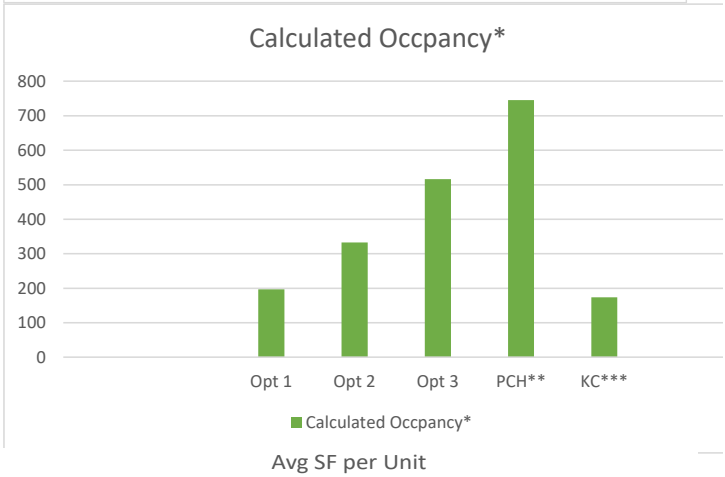
fig. 53.3 (Stereotomic)

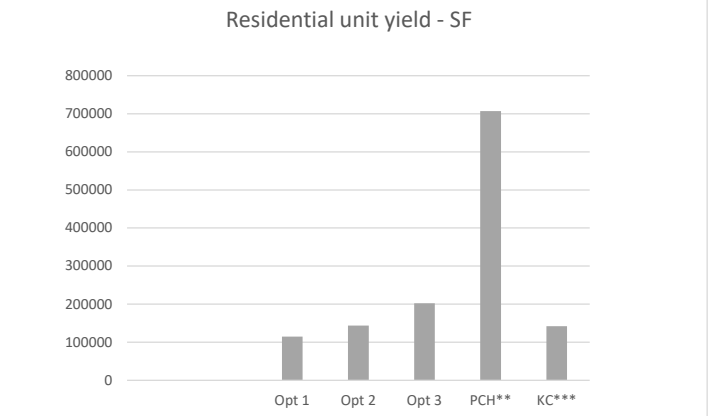
* based on Mountainlands Community housing occupancy survey for Western Summit county,

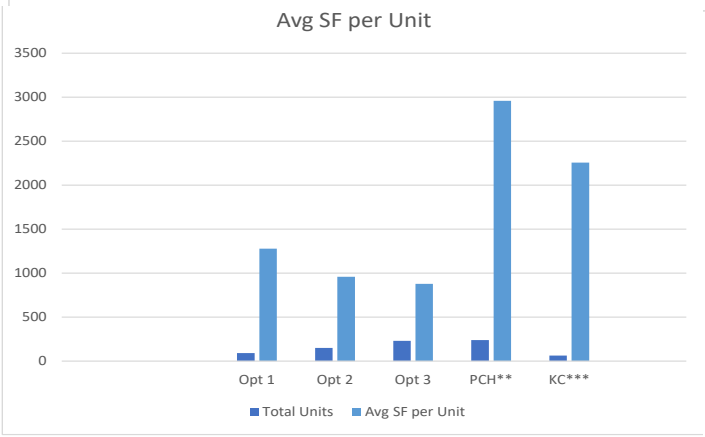


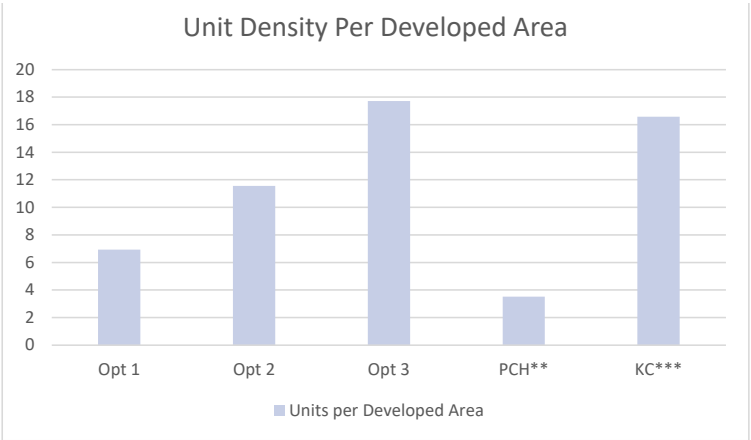












Lands Overlay Zone constrain the amount of area which should be developed. This compliments the current idea to preserve as much of the Clark Ranch Acreage as dedicated open space. We are suggesting a concentration of small units into a smaller area, as opposed to spreading larger units over a significant area.

fig. 54.1 the Graphs Above illustrate the comparisons of Each Density Option with the Existing Kings Crown and Park City Heights developments (Stereotomic)

** based on Park City Municipal Corporation planning commission documents, 03/2011

*** based on Park City Municipal Corporation planning commission documents & information from https://www.parkcitykingscrown.com/ accessed 08/2023

Feasibility Infrastructure Assessment

The following sections describe proposed utility infrastructures for the Clark Ranch Development including culinary water, sanitary sewer, storm-water, electrical, and communications. Natural gas is not included in this infrastructure assessment as the project stakeholders do not intend to use gas as part of this project.

Culinary Water Infrastructure

The Equivalent Residential Connection (ERC) is a unit of measurement that represents water demand per household. Utah Administrative Code: R309-510-7 defines peak day demand to be 800 gallons per day per ERC. For this analysis, it is conservatively estimated that 1 unit is equal to 1 ERC.
Utah Administrative Code: R309-510-7 also provides guidance for outdoor irrigation demand. The proposed Clark Ranch Development is located in Map Zone 2 for "Low" Normal Annual Effective Precipitation. The corresponding irrigation demand per Table 510-3 is 2.8 gpm per irrigated acre.
The densest Clark Ranch Development concept comprises 230 units (or ERCs) and an estimated 5 acres of irrigable outdoor space. At 800 gpd per ERC, the indoor demand for the proposed units is 184,000 gpd, or 127.78 gpm. The outdoor water demand for 5 irrigable acres is estimated to be 24,408 gpd, or 16.95 gpm.

The total peak water demand for the Clark Ranch Development is conservatively estimated to be 208,408 gpd, or 144.73 gpm.

Additionally, Utah Administrative Code R309-510-8 requires 400 gallons of storage per ERC (indoor demand), and 1,873 gallons of storage per irrigated acre (outdoor demand) per Table 510-5 of Map Zone 2. For 230 ERC's, the indoor storage requirement is 92,000 gallons. The outdoor storage requirement for 5 acres is 9,365 gallons.

The total indoor and outdoor storage requirement is 101,365 gallons.
The culinary water system is owned, operated, and maintained by Park City's Water Division. Currently, an existing 2,000,000-gallon storage tank services Park City Heights. Park City Water Division determined that the existing storage tank has adequate source and storage capacity to provide additional service to the Clark Ranch Development's 230 units and 5 acres of irrigable outdoor space. It is assumed that the existing tank has enough fire flow storage to allow for 2 hours of flow at 2,000 gpm.

The existing elevation of the storage tank is at elevation 7,017 feet. To maintain a minimum service pressure of 40 psi without booster pumps, the development of Clark Ranch may not exceed an elevation of 6917.'

table 56.1 - Clark Ranch Culinary Water Demand & Storage Estimates (Talisman Civil)

Indoor Demand					
ERC's	Peak Day Demand per ERC	Peak Day Demand (GPD)	Peak Day Demand (GPM)	Storage per ERC (Gal)	Required Storage (Gal)
230	800	184,000	127.78	400	92,000
Outdoor Demand					
Acres	Demand Per Acre (GPM)	Peak Day Demand (GPD)	Peak Day Demand (GPM)	Storage Per Acre (Gal)	Required Storage (Gal)
5.00	3.39	24,408	16.95	1,873	9,365

	GPD	GPM
Indoor Demand	184,000	127.78
Outdoor Demand	24,408.00	16.95
Total Demand	**208,408**	**144.73**

Indoor Storage	92,000
Outdoor Storage	9,365
Total Required Storage (Gal)	**101,365**

The proposed culinary water system for Clark Ranch will connect to an assumed 8" stub off the cul-de-sac of Calamity Lane in Phase 5 of Park City Heights.

Sanitary Sewer Infrastructure

The sanitary sewer infrastructure in this area is and will be owned, operated, and maintained by Snyderville Basin Water Reclamation District (SBWRD). Per Utah Administrative Code R317-3, Residential Equivalent (RE) is a unit of measurement that represents the volume of wastewater per residential connection. SBWRD considers an RE to be 100 gpd per person, with an average of 3.2 people per household such that 1 RE is equal to 320 gpd demand of wastewater.

Wastewater demand is based off the estimated occupancy rates for each unit. Local occupancy ratios were provided by Park City and Mountainlands. For this analysis, we have utilized an occupancy ratio of 1.2 occupants per bedroom, which while being more conservative, is also consistent with observed occupancy levels in affordable housing projects across Utah. See Table below.

table 56.2 - Clark Ranch Sanitary Sewer Demand per occupancy equivalent (Talisman Civil)

Unit Type	# of Occupants per Unit (Local)	# of Occupants per Unit (Clark Ranch Analysis)
Studio	1.2	1.2
1 Bedroom	1.1	1.2
2 Bedroom	1.9	2.4
3 Bedroom	N/A	3.6
Multi Family (4BR)	3.7	4.8

The densest Clark Ranch Development concept comprises 230 units total. Of these, there are 10 studios, 80 one-bedroom units, 80 two-bedroom units, and 60 three-bedroom units. There are an estimated 516 occupants. At 100gpd/person, the wastewater demand is conservatively estimated at 516,000 gpd or 161.25 REs or. See Table 57.1

table 57.1 - Clark Ranch Sanitary Sewer Demand Calculation, for highest proposed density (230 units) (Talisman Civil)

Unit Type	Unit Count	Occupants per Unit	# of Occupants	Demand (GPD) (100gpd/occupant)	Demand (GPM)	Demand (RE)
Studio	10	1.2	12	1,200	0.83	3.75
1 Bedroom	80	1.2	96	9,600	6.67	30
2 Bedroom	80	2.4	192	19,200	13.33	60
3 Bedroom	60	3.6	216	21,600	15.00	67.5
Multi Family (4BF)	0	4.8	0	0	0.00	0
Total			**516**	**51,600**	**36**	**161.25**

It is intended to connect the Clark Ranch wastewater system into the existing system in Park City Heights. according to discussions with SBWRD, after the full build out of Park City Heights, the limiting factor in the existing wastewater system lies between manholes #58 and #59 with an available capacity at 229 REs or 50.89 gpm.

The wastewater demand for 230 units from the densest Clark Ranch concept is conservatively estimated at 36 gpm, far less than the 50.89 gpm of available capacity. Therefore, it is estimated that the existing sewer system has enough capacity to accommodate the Clark Ranch Development without requiring upgrades to the existing infrastructure.

If the Clark Ranch wastewater demand were to exceed 51gpm or 229 REs, the existing sewer line between manholes #59 & Manhole #8 must be upsized from an 8" pipe to a 12" pipe. Improvements to the sewer line between manholes #40 and #8 require special attention. The existing sewer line is shallow in slope and makes an aerial crossing over a natural waterway which will complicate design solutions.

It is also worth discussing reducing wastewater demand requirements from 100gpd per person to 75gpd per person, or 320 gpd per RE to 240 gpd per RE. This number is based off analogous developments in Park City which have received such a reduction. If SBWRD accepts a reduction in demand, the existing sewer system capacity of 50.89 gpm could support 305 RE's, which is nearly double the densest Clark Ranch development concept.

TCC estimates that the Clark Ranch Development will require approximately 2,300 linear feet of 8" SDR35 PVC pipe. See Exhibit X101 in the Appendix. The proposed sanitary sewer infrastructure will connect to existing manhole #23 and run the length of Piper Way in Park City Heights. The conveyance system would ultimately direct wastewater flow to the Silver Creek Water Reclamation Facility where it is treated and returned to Silver Creek before eventually flowing to Echo Reservoir.

Storm-water Infrastructure

The Park City Storm-water Management Program and the Park City Storm-water Drainage Design Manual dictates the parameters used to evaluate requirements for the Clark Ranch storm drain system.

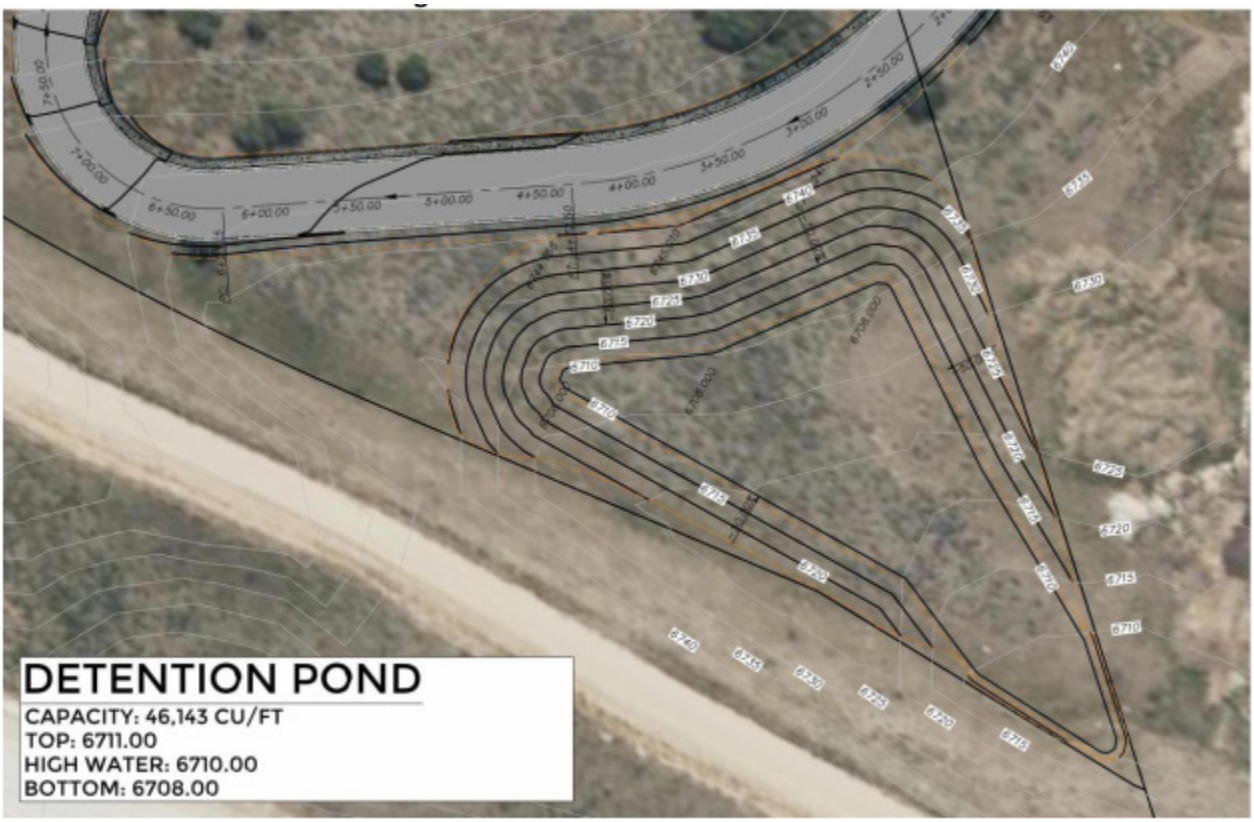
Important design parameters from these documents include but are not limited to:

- Pipe shall be designed to convey the 10-year storm recurrence interval.
- Detention ponds shall be designed for the 100-year storm recurrence interval.
- The allowable post-development discharge rate must be less than or equal to the predevelopment discharge rate.
- The minimum storm drain pipe diameter shall be 15".
- The source for precipitation data is NOAA Atlas 14.

As of July 1st 2020, the Utah Division of Water Quality has implemented a requirement to retain and infiltrate the 80th percentile storm event for new development projects that disturb greater than or equal to 1 acre. The 80th percentile storm depth for Park City is approximately 0.47".

Using the above criteria along with a hydraulic model based on SCS curve number methodology, TCC calculates that the densest Clark Ranch Development concept disturbs approximately 400,000 square feet and must be able to retain 15,666 cubic feet and detain approximately 45,000 cubic feet of storm drain runoff. The open space in the northern corner of the Clark Ranch Development is relatively flat and sufficient in area for a basin with the capacity to detain and retain runoff for the entire site.

illust. 58.1 - Clark Ranch Detention Basin (Talisman Civil)



The detention pond will maintain water quality and control discharge to the greater storm-water system in Highway 40. It may also serve as a secondary recreational purpose for the surrounding community when not detaining storm-water.

TCC also anticipates incorporating bio swales throughout the project which will capture a portion of runoff and reduce the required capacity of the detention basin.

There are limited areas where the proposed road profile slopes toward Frontage Road, storm-water will be unable to drain to the detention basin. UDOT may grant permission for runoff to flow downhill to the UDOT storm drain system in US-40, in which case discharge will be limited to 0.2 cfs/acre.

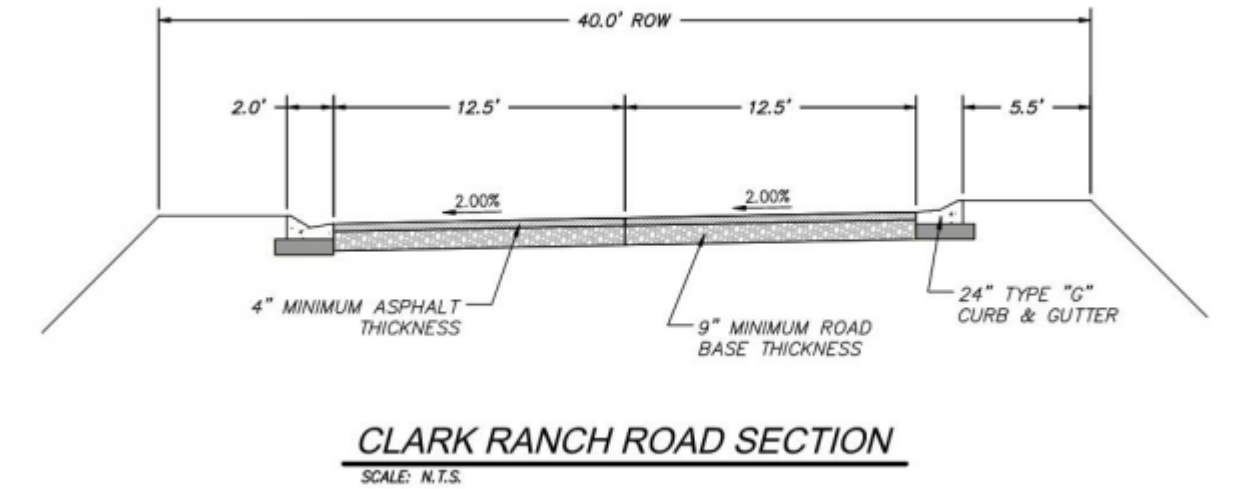
ROADWAY INFRASTRUCTURE

The following sections describe roadway infrastructure for the Clark Ranch Development.

Roadway Design Parameters

TCC proposes the design of two new roads in the Clark Ranch Development – Phase 1, which consists of "Road 1" the lower road that connects to Park City Heights and the frontage road, and Phase 2 which consists of "Road 2" which sits above Road 1. The design for both roadways adhere to Park City Engineering standards and AASHTO guidelines for a 25 mph design speed. Park City's Engineering Department has also specified the cross-section widths as follows:

- 40' Right-of-Way Width
- 25' of Asphalt Surface
- 24" Type "G" Curb and Gutter on Either Side
- 5.5' of Landscaped Shoulder
- No Sidewalk
- Able to Support an 80,000 lb Fire Truck



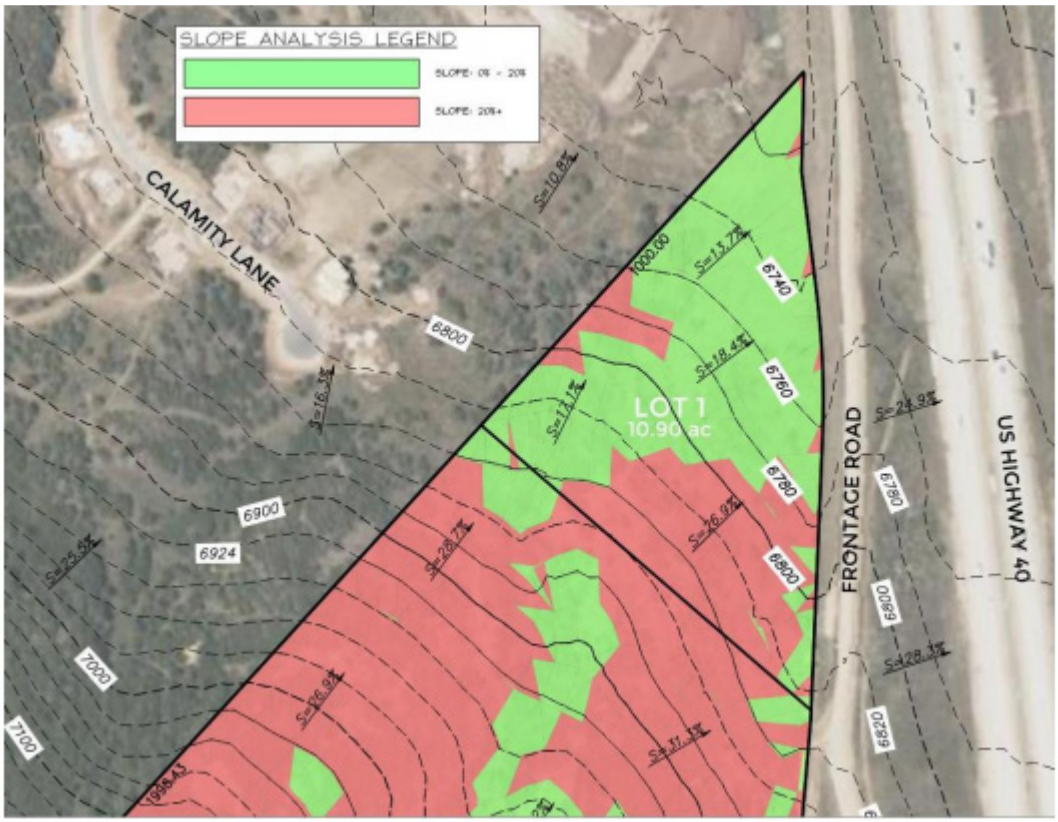
illust. 59.1 - Clark Ranch Road Section (Park City Municipal Corp.)

The road will feature a minimum of 4" thick asphalt on a minimum of 9" thick commercial road base.

Regarding life safety, Road 2 which provides the second connection to Frontage Road could be designed as a dead-end, however Park City Municipal Code 15-7.3-4 stipulates that,
For greater convenience to traffic and more effective police and fire protection, permanent dead-end Streets shall, in general, be limited in length to six hundred and fifty feet (650').

Appendix D of the International Fire Code would also require a 70' hammer head or other acceptable turnaround for fire apparatus access for any dead end greater than 150' in length. Furthermore, the Park City Fire District will have the final say and may require at least two roadway entrances/exits to both Phase 1 and Phase 2 of the Clark Ranch development.
The primary road alignment and associated right-of-way is the main conduit for the primary utilities listed in Section 2.0 that service the Clark Ranch Development.

A slope analysis exhibit shows that the existing topography is steep in areas with slopes that exceed 25%.



illust. 60.1 - Clark Ranch Slope Analysis (Talisman Civil)

The horizontal road design intends to mitigate steep slopes by utilizing oblique approaches to the topography where possible, small radius curves, and a 2.0% cross-slope over the roadway width. The maximum centerline profile grade of the roads does not exceed the 10% prescribed by Park City Engineers. Due to the steep nature of the topography and the profile design limits, TCC anticipates areas where significant retaining walls greater than 10' will be necessary. For this analysis, TCC assumes using concrete retaining walls, however a variety of slope treatments may be considered at varying costs.

The frontage road providing access to Clark Ranch will also need to be developed. Assuming a 36' paved section (2x12' lanes with 6' shoulders & curb and gutter) it is estimated improvements to the frontage road will cost around $1.32M (see table 67.1 below.)

Pedestrian Circulation

The Park City Engineering Department has specified that, due to the steep slopes of the vertical road alignments, sidewalks would not be practical and therefore are not to be included in the road cross section. Instead, as the design for the entire project continues to develop, TCC anticipates incorporating pedestrian walkways throughout the Clark Ranch Development between proposed units, to access existing trailheads, and community recreation spaces.

Preliminary Traffic Assessment

The proposed development will be composed of affordable multifamily housing units, and is in the process of determining land use numbers. Currently the following three options are in consideration:

- Option 1: 90 - 160 total dwelling units
- Option 2: 150 - 225 total dwelling units
- Option 3: 230 - 290 total dwelling units

To assess the greatest impact, option 3 with up to a maximum of 290 dwelling units was analyzed for this study (site plan attached in Appendix). Fehr & Peers used trip generation rates published in the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, 2021, to estimate trip generation rates for this study. The following ITE land use code was assumed for the proposed Clark Ranch development.

- Multifamily Housing (Mid-Rise) (ITE Land Use 221) – 290 dwelling units

The ITE Trip Generation includes a land use code for affordable housing. However, it is a new land use code with a low sample size and limited data. Therefore, the affordable housing land use code was not used for this study.

The calculated trip generation for the proposed Clark Ranch development is shown below in Table 62.1

Land Use[1]	Number of Units	Unit Type	Daily Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	**New Daily Trips**
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	1,338	50%	50%	669	669	**1,338**
Net Weekday Trips						**669**	**669**	**1,338**
Land Use[1]	Number of Units	Unit Type	AM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	**New AM Peak Hour Trips**
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	116	23%	77%	27	89	**116**
Net Weekday AM Peak Hour Trips						**27**	**89**	**116**
Land Use[1]	Number of Units	Unit Type	PM Peak Hour Trip Generation[2]	% Entering[3]	% Exiting[3]	Trips Entering	Trips Exiting	**New AM Peak Hour Trips**
Multifamily Housing (Mid-Rise) (221)	290	Dwelling Units	113	61%	39%	69	44	**113**
Net Weekday PM Peak Hour Trips						**69**	**44**	**113**

1. (XXX) Indicates ITE Land Use Code. Land Use Code from the Institute of Transportation Engineers - 11th Edition Trip Generation Manual (ITE Manual)
2. Traffic Generated by the development according to trip generation rates provided in the ITE Manual
3. Percentage of trips Entering and Exiting the development according to the ITE Manual.

SOURCE: Fehr & Peers

Table 62.1 - Clark Ranch trip generation

As shown in Table 62.1, the proposed Clark Ranch development is estimated to generate 1,338 daily trips, 116 AM peak hour trips, and 113 PM peak hour trips.

PROJECT IMPACTS

Fehr & Peers collected turning movement counts for another project at the SR-248 / Richardson Flat Road intersection in January 2020 (attached in Appendix). The 2020 counts at the intersection showed two-way volumes on Richardson Flat Road (east of SR-248) of 214 vehicles and 172 vehicles in the AM peak hour and PM peak hour, respectively.

Fehr & Peers performed a high-level assessment of the project impacts of the peak hour trip generation on the roadway capacity of Richardson Flat Road. The roadway Level of Service (LOS) was

estimated based on planning level generalized peak hour two-way volumes for roadway capacities. These volumes are published by the Florida Department of Transportation (FDOT) based on planning applications of the Highway Capacity Manual (HCM) and are widely used for planning level evaluation of roadway capacity. Table 2 below shows the peak hour two-way capacity estimates for a 2-lane undivided roadway in developed areas less than 5,000 population.

Table 61.1 - Roadway Level of Service Peak Hour Two-Way Traffic Thresholds

Level of Service	Peak Hour Traffic Capacity Estimates
	2 Lanes
LOS B or better	≤ 1,098
LOS C	1,099 – 1,215
LOS D	> 1,215

Source: Fehr & Peers, based on FDOT Generalized Peak Hour Two-Way Volumes for developed areas less than 5,000 population, adjusted for non-state signalized roadway.

Table 3 below shows the projected peak hour two-way volumes on Richardson Flat Road with the proposed Clark Ranch development.

Table 61.2 - Peak Hour Two-Way Volumes on Richardson Flat Road

Peak Hour	Background[1]	Project[2]	Plus Project
AM	214	116	**330**
PM	172	113	**285**

1. From turning movement counts at the SR-248 / Richardson Flat Road intersection counted in 2020.
2. Estimated for proposed Clark Ranch development, as shown in Table 1.

Source: Fehr & Peers

As shown in Table 3, the AM and PM peak hour estimated trips on Richardson Flat Road are 330 vehicles and 285 vehicles, respectively, with the proposed Clark Ranch development. This is well below the LOS B threshold as shown in Table 2.

CONCLUSION

Fehr & Peers evaluated the total trips generated by the proposed Clark Ranch development. The estimated trips generated by the development are 1,338 daily trips, 116 AM peak hour trips, and 113 PM peak hour trips. Fehr & Peers also estimated the projected peak hour two-way volumes on Richardson Flat Road with the proposed development. The estimated trips are 330 vehicles and 285 vehicles in the AM peak hour and PM peak hour, respectively. This is well below the LOS B threshold, indicating that Richardson Flat Road has the capacity to receive the additional trips from the proposed Clark Ranch development.

Preliminary Cost Analysis

HORIZONTAL INFRASTRUCTURE

Based on the roadway alignment and assumption that utilities generally run parallel to the roadway centerline, TCC calculated the following quantities and associated cost estimates for the proposed Clark Ranch Development. The Phase 1 costs consisting of Road 1 and associated utilities is found below.

Table 64.1 - Clark Ranch Phase I Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch, Phase 1 Estimate					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	110,645	$221,290
				Subtotal	**$221,290**
Site Improvements					
2	Cut	C.Y.	$20	3,737	$74,740
3	Fill	C.Y.	$10	8,653	$86,530
4	4" Asphalt Paving	S.Y.	$27	6,264	$169,128
5	9" Road Base Material	C.Y.	$52	1,566	$81,432
6	Type "G" Curb and Gutter - Catch	L.F.	$28	2,286	$64,008
7	Type "G" Curb and Gutter - Spill	L.F.	$28	2,155	$60,340
8	Retaining Walls (Concrete)	S.F.	$50	21,194	$1,059,700
9	Shoulder Landscape	S.F.	$2	24,298	$48,596
				Subtotal	**$1,644,474**
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	1	$2,000
11	10" C-900 PVC Pipe	L.F.	$125	2,221	$277,625
12	PRV Station	Each	$100,000	1	$100,000
13	Connect to Existing Sewer Stub	Each	$2,000	1	$2,000
14	8" SDR-35 PVC Pipe	L.F.	$100	2,218	$221,800
15	Sewer Manhole	Each	$5,000	5	$25,000
16	15" Class III RCP Pipe	L.F.	$150	2,215	$332,250
17	Detention/Retention Volume	C.Y.	$20	2,250	$45,000
18	Storm Drain Inlet	Each	$5,000	9	$45,000
19	4" PVC Electrical Conduit	L.F.	$10	2,214	$22,140
20	4" PVC Communications Conduit	L.F.	$10	2,215	$22,150
21	Additional Electrical Appurtenances	L.S.	$250,000	1	$250,000
				Subtotal	**$1,344,965**
	Sub Total		$3,210,729		
	20% Contingency		$642,146		
	Total		**$3,852,875**		

The second phase comprises the development of remaining Road 2 and associated utilities.

Table 64.1 - Clark Ranch Phase II Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch, Phase 2 Estimate					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	99,980	$199,960
				Subtotal	**$199,960**
Site Improvements					
2	Cut	C.Y.	$20	32,275	$645,500
3	Fill	C.Y.	$10	1,228	$12,280
4	4" Asphalt Paving	S.Y.	$27	4,375	$118,125
5	9" Road Base Material	C.Y.	$52	1,094	$56,888
6	Type "G" Curb and Gutter - Catch	L.F.	$28	1,533	$42,924
7	Type "G" Curb and Gutter - Spill	L.F.	$28	1,619	$45,332
8	Retaining Walls (Concrete)	S.F.	$50	37,226	$1,861,300
9	Shoulder Landscape	S.F.	$2	17,239	$34,478
				Subtotal	**$2,816,827**
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	1	$2,000
11	10" C-900 PVC Pipe	L.F.	$125	1,615	$201,875
12	Connect to Existing Sewer Stub	Each	$2,000	1	$2,000
13	8" SDR-35 PVC Pipe	L.F.	$100	1,598	$159,800
14	Sewer Manhole	Each	$5,000	4	$20,000
15	15" Class III RCP Pipe	L.F.	$150	1,583	$237,450
16	Storm Drain Inlet	Each	$5,000	9	$45,000
17	4" PVC Electrical Conduit	L.F.	$10	1,574	$15,740
18	4" PVC Communications Conduit	L.F.	$10	1,578	$15,780
19	Additional Electrical Appurtenances	L.S.	$250,000	1	$250,000
				Subtotal	**$949,645**
	Sub Total	$3,966,432			
	20% Contingency	$793,286			
	Total	**$4,759,718**			

The following table shows the combined total of Phase 1 and Phase 2.

Table 66.1 - Clark Ranch Total combined Estimate / Horizontal Infrastructure (Talisman Civil)

Clark Ranch Total Estimate					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$2	210,625	$421,250
				Subtotal	**$421,250**
Site Improvements					
2	Cut	C.Y.	$20	36,012	$720,240
3	Fill	C.Y.	$10	9,881	$98,810
4	4" Asphalt Paving	S.Y.	$27	10,639	$287,253
5	9" Road Base Material	C.Y.	$52	2,660	$138,320
6	Type "G" Curb and Gutter - Catch	L.F.	$28	3,819	$106,932
7	Type "G" Curb and Gutter - Spill	L.F.	$28	3,774	$105,672
8	Retaining Walls (Concrete)	S.F.	$50	58,420	$2,921,000
9	Shoulder Landscape	S.F.	$2	41,537	$83,074
				Subtotal	**$4,461,301**
Utility Improvements					
10	Connect to Existing Water Stub	Each	$2,000	2	$4,000
11	10" C-900 PVC Pipe	L.F.	$125	3,836	$479,500
12	PRV Station	Each	$100,000	1	$100,000
13	Connect to Existing Sewer Stub	Each	$2,000	2	$4,000
14	8" SDR-35 PVC Pipe	L.F.	$100	3,816	$381,600
15	Sewer Manhole	Each	$5,000	9	$45,000
16	15" Class III RCP Pipe	L.F.	$150	3,798	$569,700
17	Detention/Retention Volume	C.Y.	$20	2,250	$45,000
18	Storm Drain Inlet	Each	$5,000	18	$90,000
19	4" PVC Electrical Conduit	L.F.	$10	3,788	$37,880
20	4" PVC Communications Conduit	L.F.	$10	3,793	$37,930
21	Additional Electrical Appurtenances	L.S.	$500,000	1	$500,000
				Subtotal	**$2,294,610**
	Sub Total	$7,177,161			
	20% Contingency	$1,435,432			
	Total	**$8,612,593**			

The electrical costs in Section 4.0 include proposed electrical conduit for a total of $37,880. This excludes costs for conductors, transformers, or other electrical equipment. For the purpose of this report, TCC estimates remaining electrical infrastructure improvements to be roughly $250,000 for each phase, or $500,000 total. This assumes existing Rocky Mountain infrastructure in the area such as substations, etc., will not require a significant upgrade to service the Clark Ranch Development. TCC

recommends further coordination with Rocky Mountain Power and performing an Electric Service Study (ESSA), and System Impact Study, to determine any necessary upgrades.

The frontage road providing access to Clark Ranch will also need to be developed. Assuming a 36' paved section (2x12' lanes with 6' shoulders & curb and gutter) it is estimated improvements to the frontage road will cost around $1.32M per table 67.1 included here).

Table 67.1 - Clark Ranch Frontage Road Improvements Cost Estimate (Talisman Civil)

Frontage Road					
	Item	Unit	Unit Price	Quantity	Cost
Site Preparation and Demolition					
1	Clear and Grub	S.F.	$1	211,640	$211,640
				Subtotal	**$211,640**
Site Improvements					
2	4" Asphalt Paving	S.Y.	$27	16,600	$448,200
3	9" Road Base Material	C.Y.	$52	4,150	$215,800
4	Type "G" Curb and Gutter	L.F.	$28	7,645	$232,400
				Subtotal	**$896,400**

Sub Total	$1,108,040
20% Contingency	$221,608
Total	**$1,329,648**

SUMMARY & CONCLUSION

In summary, the total estimated costs of utility and road infrastructure for the Clark Ranch Development is conservatively estimated at $8,612,593. Improvements to the frontage road will cost an additional $1,330,000. It is important to note that the retaining walls contribute a large portion of the overall cost. Due to the steepness of the overall project topography, maintaining a maximum road grade of 10% will have a significant impact on the height and quantity of retaining walls.

At a conceptual level, even for the densest Clark Ranch Development Option, there is adequate source and storage capacity for water infrastructure, and adequate capacity within the existing sewer infrastructure in Park City Heights. Storm drain infrastructure will be addressed by an 45,000 cubic feet detention and 15,666 cubic feet retention ponds built on-site, and ultimately discharging to the UDOT drainage system in US-40.

VERTICAL INFRASTRUCTURE

Given the very preliminary nature of the density studies included here, and the volatile nature of the construction environment in the last 2 years, the following estimates are for comparisons only. The process for deriving the following estimates included proposing a basic unit type breakdown, and

assigning a rough estimate of typical square footages for each unit size.

By using a total rough estimate in each density summary, the total square footage estimates then allows us to assign a basic cost per square foot number. For general comparison, we have assumed the high end costs to be $450 per square foot cost. To generate a range, and to help understand the shifting nature of the current economy and potential economies of scale, a $350 per square foot cost has been assigned for the low end. The result of the totals generates a range of anticipated costs for this type of project.

In the summary, the total estimated costs and the breakdown for comparisons assumes the high end of the range.

Based on the Low and High cost ranges, we have estimated the following basic cost parameters for each of the density options illustrated previously.

Infrastructure Costs						
	Initial Land Cost*	Frontage road	Roads	Utilities	Misc**	Total
phase 1+2	$216,000	$1,241,287	$4,882,551	$2,294,610	$1,435,432	$10,069,880
phase 1	$216,000	$1,241,287	$1,865,764	$1,344,965	$642,146	$5,310,162

* assumes $18,000 per acre x 12.0 acres

** Misc costs includes contingency

Building Costs - Phase 1					
	Low Range $350	High Range $450	BLDG Cost Per Unit	Infrastructure Cost Per Unit	**Total Avg Per Unit**
Opt 1	$40,250,000	$51,750,000	$575,000	$59,002	**$634,002**
Opt 2	$50,295,000	$64,665,000	$431,100	$35,401	**$466,501**
Opt 3	$70,700,000	$90,900,000	$395,217	$23,088	**$418,305**

Building Costs - Phase 1+2					
	Low Range $350	High Range $450	BLDG Cost Per Unit	Infrastructure Cost Per Unit	**Total Avg Per Unit**
Opt 1	$48,125,000	$61,875,000	$441,964	$71,928	$513,892
Opt 2	$50,295,000	$64,665,000	$323,325	$50,349.40	$373,674
Opt 3	$70,700,000	$90,900,000	330545.4545	$36,617.75	$367,163

Table 68.1 - Clark Ranch Vertical & Horizontal Construction Cost Estimate (Talisman Civil & Stereotomic)

The projected lowest cost option would be option 1, (90 units of town-homes) which could range from $40.2 mil to $51.7 mil. The Highest cost option 3, ranges from $70.7 mil to $90.9, consists of Multifamily units of stacked flat apartments.

Total Development - Phase 1								
	bldg cost		infrastructure cost			totals		
	Low Range ($350 sf)	High Range ($450)	Intial Land Cost	utilities	roads	misc.	low	high
Opt 1	$40,250,000	$51,750,000	$216,000	$1,344,965	$1,865,764	$642,146	$44,318,875	$55,818,875
Opt 2	$50,295,000	$64,665,000	$216,000	$1,344,965	$1,865,764	$642,146	$54,363,875	$68,733,875
Opt 3	$70,700,000	$90,900,000	$216,000	$1,344,965	$1,865,764	$642,146	$74,768,875	$94,968,875

Total Development - Phase 1 + 2								
	bldg cost		infrastructure cost			totals		
	Low Range ($350 sf)	High Range ($450)	Initial Land Cost	utilities	roads	misc.	low	high
Opt 1	$40,250,000	$51,750,000	$216,000	$431,100	$4,882,551	$1,435,432	$47,215,083	$58,715,083
Opt 2	$50,295,000	$64,665,000	$216,000	$431,100	$4,882,551	$1,435,432	$57,260,083	$71,630,083
Opt 3	$70,700,000	$90,900,000	$216,000	$431,100	$4,882,551	$1,435,432	$77,665,083	$97,865,083

Table 68.2 - Clark Ranch Total Construction Cost Estimates (Talisman Civil & Stereotomic)

When factoring in the associated horizontal costs, we arrive at the general projected "total development" costs. These costs do not include soft costs associated with the pre-development (testing, further analysis, and entitlements process) as well as the design and engineering costs, utility infrastructure fees, and other associated soft costs.

As anticipated, Option 1 is the lowest cost option for total development while Option 3 is the largest. Although Option 3 has the largest total cost of development, it also has the greatest value when considering the average cost per unit. The average cost per unit does not account for different sizes and unit types, but is a simple calculation of total development costs divided by the units provided in the scenario.

Further analysis gives a clear picture on the nature of our tight affordable housing situation. The following table illustrates three (3) distinct affordable housing ranges, (30%-50% AMI, 50%-80% AMI, & 80%-100% AMI) and compares the cost to develop the project (on a per unit basis), with the maximum mortgage loan amount calculated for each affordable category.

	Affordable Unit Cost Limit+					
	30%-50% AMI		50%-80% AMI		80%-100% AMI	
	Max. Mortgage Loan Amt.	Deficit	Max. Mortgage Loan Amt.	Deficit	Max. Mortgage Loan Amt.	Deficit
Opt 1	278,650	-$355,352	$445,780	-$188,222	557,270	-$76,732
Opt 2	278,650	-$187,851	$445,780	-$20,721	557,270	$90,769
Opt 3	278,650	-$139,655	$445,780	$27,475	557,270	$138,965

Table 69.1 - Clark Ranch Affordable Unit Cost Comparison table, "for sale" model. This table assumes all the units developed as part of each of the density options would be affordable units. The "Maximum Mortgage Loan Amount" is referenced from Afford-ability Calculator from the Utah Afford-ability Housing Forecast tool, 2021 - Table 6, "Park City's Housing Needs Assessment 2021" prepared by Wood, James. pg 24 (Talisman Civil & Stereotomic)

Based on the assumptions outlined previously, all the options would need significant subsidies to be financially viable. Only Option 2 and Option 3 become financially viable without subsidies when targeting the 80%-100% AMI income level.

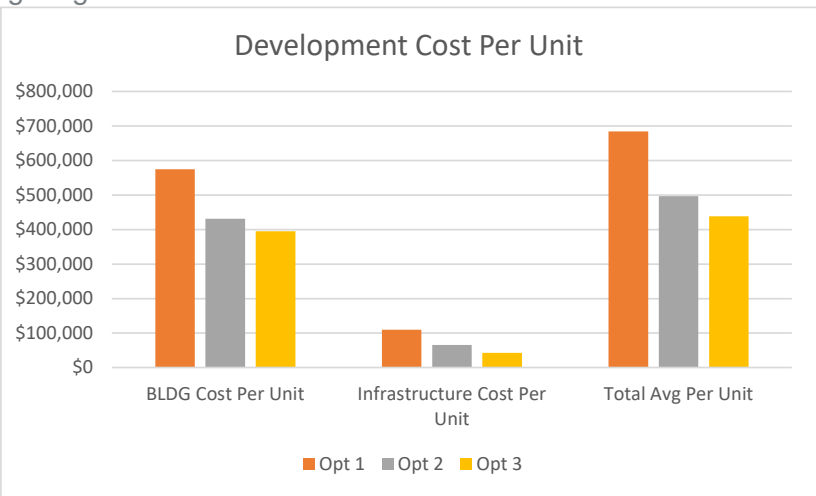


Table 69.2 - Project Development Cost Analysis - Factoring in Building (vertical) Costs as well as Infrastructure (horizontal) costs divided between the total number of units per option. (Stereotomic)

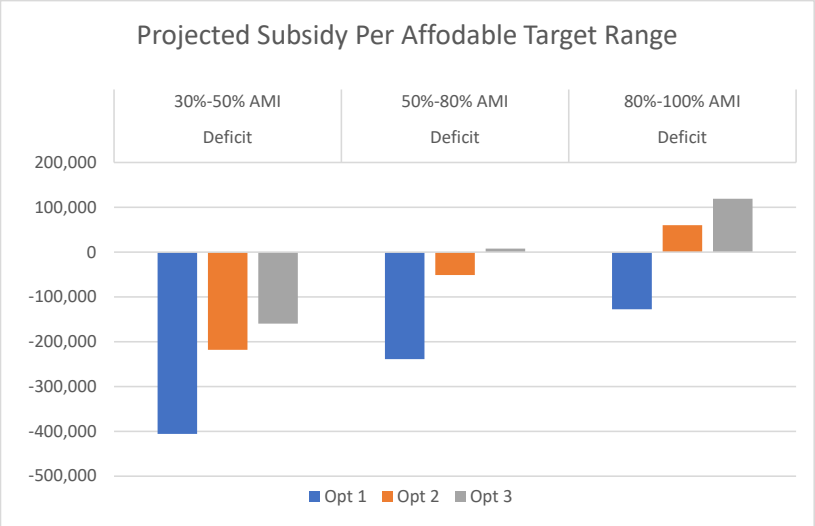


Table 69.3 - Project Development Cost Analysis - Negative numbers denote a financial shortage which would be needed to subsidize the project(Stereotomic)

following table illustrates three (3) distinct affordable housing ranges, (30%-50% AMI, 50%-80% AMI, & 80%-100% AMI) and compares the cost to develop the project (on a per unit basis), with the maximum mortgage loan amount calculated for each affordable category.

Based on the assumptions outlined previously, all the options would need significant subsidies to be financially viable. Only Option 2 and Option 3 become financially viable without subsidies when targeting the 80%-100% AMI income level.

Affordable Unit Cost Limit+ (phase 1 only)						
	30%-50% AMI		50%-80% AMI		80%-100% AMI	
	Max. Monthly housing cost	Payback (yrs)	Max. Monthly housing Cost	Payback (yrs)	Max. Monthly Housing Cost	Payback (yrs)
Opt 1	$1,472	36	$2,355	22	2,944	18
Opt 2	$1,472	26	$2,355	17	2,944	13
Opt 3	$1,472	24	$2,355	15	2,944	12

Table 70.1 - Clark Ranch Affordable Unit Cost Comparison table, "for rent" model. This table assumes all the units developed as part of each of the density options would be affordable units. The "Maximum Monthly Housing Cost" is referenced from Afford-ability Calculator from the Utah Afford-ability Housing Forecast tool, 2021 - Table 6, "Park City's Housing Needs Assessment 2021" prepared by Wood, James. pg 24 (Talisman Civil & Stereotomic)

A second mode of comparision was used to understand the potential for return on the project; this model specifically looked at units as rental option. The maximum monthly mortgage amount was figured into each of the three affordability ranges (30%-50%AMI / 50%-80% AMI / 80%-100% AMI) and projected out the years to return the initial capital invested, forgoing any interest rates. The results of these payback timeschedule are illustrated in Table 70.1. The comparisions show the length of time it would take to recoperate the original investment to develop, without factoring in the cost to borrow money.

Using this model as comparision, one can see from Table 70.1 and 70.2 the payback for the 30%-50% AMI ranges from 24 to 36 years. In contrast, the 80%-100% AMI, assumed accross the development as a whole, ranges from 12-18 years. This model also does not include ancitipcated upkeep, maintainence and annual expeditures commonly associated with rental properties.

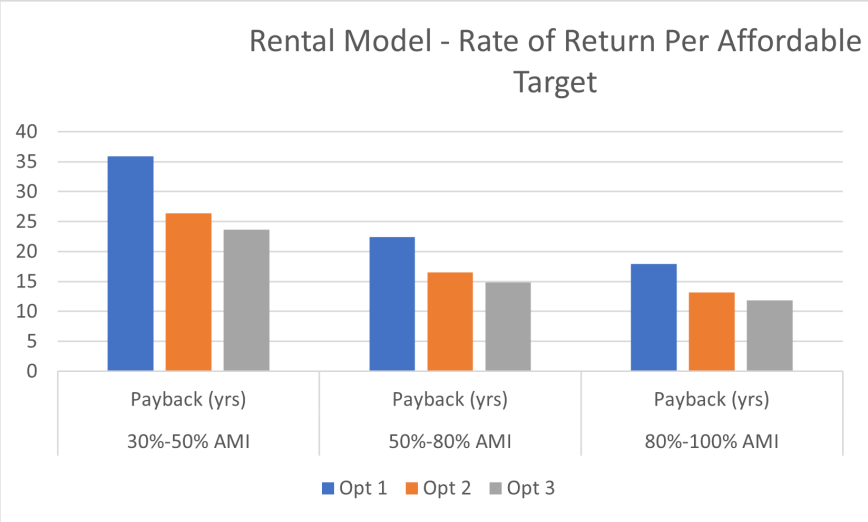


Table 70.2- Project Development Cost Analysis for potential hold and rent scenario - payback projected out in years and doesnt not assume interest or cost to finance debt. (Stereotomic)

Financing Options

Through a public-private partnership between the City and a private developer, there are several financing strategies that could promote development of an affordable project on this site.

Public Options

First, the City could dedicate the land necessary to the affordable project, through a Development Agreement (a Development Agreement is a requirement in the AMPD process). Second, the City can dedicate and/or construct all, or a portion, of the infrastructure required for the project. Third, the City can apply for Federal infrastructure grants, like grants available through the Inflation Reduction Act or through remaining opportunities in the COVID-19 relief funds and dedicate the revenues from such grants to the affordable portions of the project. Fourth, if the City retains ownership of certain units, the City can use general fund monies to subsidize the project. Fifth, the City can waive fees such as building permit fees, plan check fees, and impact fees for the affordable project. And finally, the City can encourage other service providers, such as the Snyderville Basin Water Reclamation District, to waive impact fees.

Private Options

The City's private developer partner can further take advantage of Low-Income Housing Tax Credits (LIHTCs) from the federal government and either use the tax credits internally, to offset ordinary income or capital gains generated by that business or sell such credits to interested parties. The proceeds of such tax credits sale or utilization would then be applied to offset a portion of the affordable development.

There are two types of LIHTCs, a 4% tax credit, which typically offsets 30% of the gross construction cost of the affordable units, and a 9% tax credit, which offsets roughly 70% of the gross construction cost of the affordable units. The 4% LIHTC is not competitive, meaning: if applied for, a qualifying project will receive the 4% LIHTC.

The 9% LIHTC is competitive annually among a variety of LIHTC applicants across the state. Not all applicants receive requested tax credits. The 9% LIHTC is prioritized for "higher needs" or "very low-income" populations. Projects that utilize LIHTCs are required to include at least: (1) 20% of units rented to families or individuals who earn less than 50% AMI; or (2) 40% of units rented to families who earn less than 60% AMI. (Units up to 80% AMI are allowed in option 2 if the average income of all subsidized units is not more than 60%). LIHTCs can be applied for on a building-by-building basis, so that an entire project would not be required to meet the LIHTC occupancy requirements, only the portion subsidized by the LIHTC.

On larger affordable housing projects, a private developer can pair a LIHTC with a tax-exempt bond to further subsidize the project. Tax exempt bonds for low-income housing have the same AMI occupancy requirements as LIHTCs. Typically, tax exempt bonds for low-income housing cost at least 5-6% in fees for offerings in excess of $5 Million.

Additionally, Council should be aware that all federally assisted new construction of five (5) or more residential units must construct at least 5% of units as Americans with Disabilities Act accessible.

Density Scenario - Pros and Cons Comparison		
	Con's	**Pro's**
Opt 1	Highest cost per unit Least efficient use of existing infrastructure Highest level of finanacial subsidies required for affordable prices	Lowest density per developable acres lowest footprint on the land Lowest Calculated Occupancy
Opt 2	MF stacked flat units have a larger massing & visual impact Requires financial subsidies to provide affordable prices groups unit types together (townhomes vs stacked flats)	Balance between Density and infrastructure cost Stacked flat massing in the least intrusive portion of lot Mix of Unit Typologies (MF stacked flats + Town homes)
Opt 3	Greatest Footprint on the land Highest density per developable area Stepped massing is complex to build	Lowest cost per unit Makes the most of the existing site / infrastructure Greatest Potential for positive cash flow (no subsidies)

Table 72.1 - Project option Pro vs. Con for each scenario (Stereotomic)

Appendices

Appendix A - ALTA / NSPS Land Title Survey

Appendix B - Topographic Slope Analysis

Appendix C- Clark Ranch Conservation Resources Inventory, 2015

Appendix D- Clark Ranch Management Plan, 2015

Appendix E - Traffic - Trip Generation Memorandum

Appendix F - Access Road Layouts and Profiles

Appendix G - Storm-water Retention Pond Exhibit

Appendix H - Soils Survey - Park City Heights / Clark Ranch

Appendix I - Environmental Assessment / Phase 1 - Park City Heights

Appendix J - Clark Ranch Infrastructure Assessment, Talisman Civil

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