SUNRISE
ENGINEERING

IVINS CITY
PARKS & TRAILS MASTER PLAN
IMPACT FEE FACILITIES PLAN & ANALYSIS

SUNRISE ENGINEERING, INC.
JULY 2016

PARKS & TRAILS MASTER PLAN

IMPACT FEE FACILITIES PLAN AND ANALYSIS

July 2016

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TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1
A. USER ANALYSIS 1
B. INVENTORY 1
C. LEVEL OF SERVICE ANALYSIS 1
D. IMPACT FEE FACILITIES PLAN 2
E. IMPACT FEE ANALYSIS 2
II. INTRODUCTION 3
A. PURPOSE AND SCOPE 3
B. BACKGROUND INFORMATION 3
C. ANALYSIS AREA 4
III. USER ANALYSIS 5
A. GROWTH RATE 5
B. LENGTH OF PLANNING HORIZON 5
C. POPULATION PROJECTION 5
D. HOUSING UNIT CAPACITY 6
E. NON-RESIDENTIAL UNITS 8
IV. INVENTORY 9
A. NRPA GUIDELINES 9
B. PARK & TRAIL CLASSIFICATION 9
C. EXISTING FACILITIES 16
V. LEVEL OF SERVICE ANALYSIS 18
A. EXISTING LEVEL OF SERVICE 18
B. TARGET LEVEL OF SERVICE 19
VI. IMPACT FEE FACILITIES PLAN 20
A. GROWTH DEMANDS 20
B. PARK FACILITIES PLAN 20
C. TRAIL FACILITIES PLAN 21
D. ADDITIONAL CONSIDERATIONS 22
VII. IMPACT FEE ANALYSIS 24
A. EXISTING IMPACT FEE 24
B. COST ANALYSIS 24
C. PROPOSED IMPACT FEE 25
D. IMPACT FEE RELATED ITEMS 27

LIST OF FIGURES

Figure I-1: UNITY Park 1
Figure II-1: Ivins City Park 3
Figure II-2 Area Map 4
Figure III-1: Population Projections 6
Figure III-2: Rocky Point Park 7
Figure III-3: Rocky Point Trail 7
Figure III-4: 200 East Trailhead 8
Figure IV-1: Abby Gale Shurtleff Park 9
Figure IV-2: Private Clubhouse Area 10
Figure IV-3: Red Rock Park 11
Figure IV-4: UNITY Park Field 13
Figure IV-5: Ivins Reservoir 13
Figure IV-6: Snow Canyon State Park 14
Figure IV-7: Rocky Point Trail 15
Figure VI-1: UNITY Park Field 23

LIST OF TABLES

Table III-1: Historic Growth Rates 5
Table III-2: Population Projections 6
Table IV-1: Ivins City Park & Trail Classifications 10
Table IV-2: Existing Parks 17
Table IV-3: Existing Paved Trails 17
Table V-1: Existing LOS Summary 19
Table VI-1: Proposed Parks 20
Table VI-2: Proposed Trails 22
Table VII-1: Unit Cost Summary 24
Table VII-2: Proposed Parks & Trails and Maximum Allowable Impact Fee 25

APPENDICES

Appendix A – Maps

Appendix B – Population and Growth Projections

Appendix C – NRPA Standards and Guidelines

Appendix D – Unit Cost Calculations

Appendix E – Cash Flow Spreadsheet

Appendix F – Impact Fee Certification

I. EXECUTIVE SUMMARY

The following section is for summary purposes only. Detailed information regarding the numbers and figures presented herein are provided in the body of this Ivins City Parks and Trails Master Plan (Impact Fee Facilities Plan and Analysis).

A. USER ANALYSIS

Ivins City has experienced tremendous growth, presenting both challenges and opportunities as the City strives to maintain a high quality of life in regards to parks and recreation for their citizens. A population and growth projection gives the City an idea of what future demands will be required and how the City should plan through that period. The following points have been calculated and presented in this study:

- Growth Rate of 2.5%-4.5% Per Year
- 6-Year Planning Horizon or Period
- Existing Estimated Projections for 2016:
  - Population = 8,347
  - Households = 3,792
- Future Estimated Projections for 2022:
  - Population = 10,422
  - Households = 4,734



Figure I-1: UNITY Park

B. INVENTORY

Providing an accurate inventory is essential to determining the existing Level of Service (LOS) for the community. In order to accomplish this a complete inventory was collected from City staff which includes quantitative information. The inventory compilation is a three step process: preliminary data collection, site visits, and data review and compilation. Once this is complete, an existing LOS can be calculated as presented in this plan:

- Existing Facilities:
  - 13 Parks = 25.0 *developed acres*
  - 15 Trail Systems = 9.79 *miles*
- Existing LOS:
  - Parks = 2.99 *acres/1,000 people*
  - Trails = 1.17 *miles/1,000 people*

C. LEVEL OF SERVICE ANALYSIS

The level of service analysis focuses on the desired or target LOS needed to achieve or exceed the current or existing LOS. Discussion on the target LOS, as well as the future demands due to growth, are outlined in the plan. The target LOS was determined by evaluating the Buildout Facilities Plan for Parks and Trails and back calculating the target LOS.

- Target LOS:
  - Parks = 3.72 *acres/1,000 people*
  - Trails = 1.82 *miles/1,000 people*
- Growth Demand for Planning Horizon:
  - Parks = 7.73 *acres*
  - Trails = 3.78 *miles*

D. IMPACT FEE FACILITIES PLAN

The facilities plan provides further analysis of the future LOS needed and then outlines an action plan and recommended capital improvements to guide the Parks & Recreation Department and the City for the next six years.

- Park Facilities Plan
  - 10 Parks Identified = 46.1 *acres*
  - 3 Parks for 6-Year = 7.1 *acres*
  - Minimum City Park Size = 2.0 *acres*
  - Construct on average about 1.3 *acres* of park a year
    - After paying for UNITY Park, impact fees will pay for about 0.4 *acres* of park a year
- Trail Facilities Plan
  - 26 Improved Trail Systems Identified = 25.57 *miles*
  - 2 Trail Systems for 6-Year = 4.0 *miles*
    - Two more trails that area included in the Park costs, but would count toward the trail LOS. Desert Rose Park Loop Trail and Ivins Reservoir Loop Trail are planned to be 0.15 *miles* and 1.12 *miles* respectively. Total trails planned for 6-year horizon is 5.27 *miles.*
  - Construct on average about 0.63 *miles* of trail a year
    - Impact fees will pay for about 0.4 *miles* of trail a year
  - Trail Material = Asphalt
  - Minimum Trail Width = 10.0 *feet*

E. IMPACT FEE ANALYSIS

Impact fees are a major current source of funding for capital projects. It is important to direct these funds toward parks and recreation improvements that will meet future needs of the community and be in compliance with the facilities plans detailed in this report. Collection and expenditure of impact fees shall be in accordance with Utah Code 11-36a-101.

- Existing Impact Fee = $4,723.84 *per ERU*
- Unit Costs for New Infrastructure
  - Parks = $379,000 *per acre*
  - Trails = $573,000 *per mile*
- Total Impact Fee Eligible Costs = $3,386,749
- Proposed Maximum Allowable Impact Fee = $3,594.15 *per household*

II. INTRODUCTION

This section reviews the purpose and scope of this master plan and analysis, provides background information, identifies the plan's area or limits, and considers connections with adjacent entities related to parks and trail facilities in Ivins City.

A. PURPOSE AND SCOPE

In March 2016, Ivins City commissioned Sunrise Engineering, Inc. to conduct a parks and trails impact fee facilities plan and analysis. The City understands the importance of an early planning process to ensure that a comprehensive community-wide park and trail system fulfills the current and future recreational needs of Ivins City residents.

Parks and trails facilities are an integral part of the community. The location and attributes of a park and trail can have a vast impact on the type and course of growth in the community. Likewise, these facilities can enhance the quality of life, and contribute positively to a neighborhood's aesthetics.



Figure II-1: Ivins City Park

As directed by the City, the specific objectives of this plan are to analyze population growth rates and projections, identify existing parks and trails facilities, establish a facilities plan and master plan to accommodate future growth, and perform a financial and impact fee analysis. Ultimately, the goal of this plan is to provide a general guide to the City for making decisions pertaining to future parks and trails development and to help avoid mistakes attributed to the lack of proper planning.

B. BACKGROUND INFORMATION

Ivins City is located in Southern Utah to the northwest of St. George and Santa Clara in the south-west portion of Washington County.

The terrain surrounding Ivins City is characterized by mild slopes with some natural drainages passing through the City. Ivins is bordered to the north by large red rock cliffs of Snow Canyon State Park and the Red Cliffs Desert Reserve. The Santa Clara River flows to the south-west of the City.

Ivins City is characterized by it semi-arid climate which is typically hot and relatively dry in the summer months and mild in the winter months. The average annual rainfall is approximately 11.57 inches, with higher rainfall accumulation occurring primarily in the winter months (http://www.usclimatedata.com/climate/ivins/utah/united-states/usut0413).

Due to the area's temperate climate and location, Ivins City has experienced moderate to high growth rates over the past 30 years, but slowed recently after 2008. Decade growth rates in recent years have been cut in half since 2000. The City's most recent census population estimate was 7,665 as of 2014.

As with any other community, growth and development in the area have fostered the need for additional parks and trails to support the population increase.

C. ANALYSIS AREA

Generally speaking, the master plan area is contained within the existing Ivins City limits see Appendix A map titled, *"Location Map" (Map 1)*.

The north border of the City is almost entirely bounded by the Red Cliffs Desert Reserve and Snow Canyon State Park; no development is expected in the region, but it was necessary to coordinate connections as the Reserve provides additional recreation opportunities to the citizens of the City.

Ivins City abuts St. George City, the largest city in the county, to the east and Santa Clara City to the southeast. The Shivwits band of Paiute Indians Reservation also borders the City to the west. Considerations were made in this plan to connect to their facilities to the east, south, west, and wherever seemed appropriate.

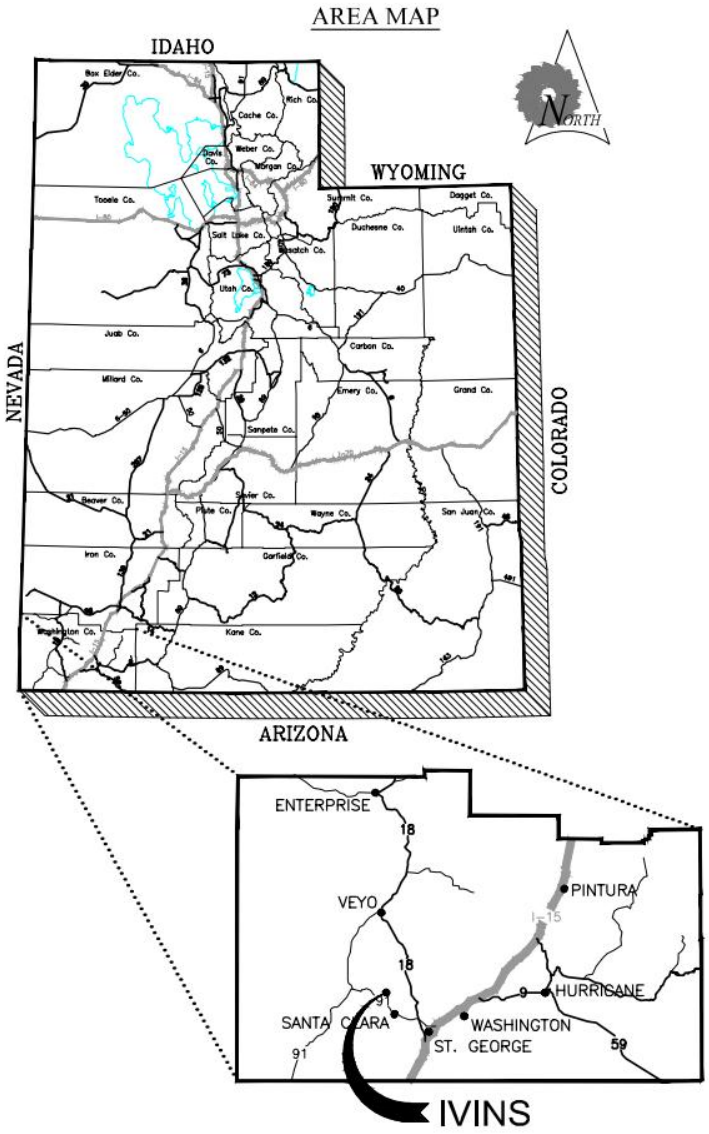


Figure II-2 Area Map

III. USER ANALYSIS

An important element in any community plan is a user analysis or a projection of the City's population growth rate. This projection gives the planner an idea of the future demands the City should plan for throughout the planning period. This section summarizes how the growth rate, planning period, population projections and capacity were calculated or obtained.

A. GROWTH RATE

To determine the level of service standard, projections for the population and growth rate must be calculated. Projecting the future population can be a subjective process, especially when historic growth trends are not anticipated to continue. With this in mind, Table III-1 below summarizes periods of historic growth rates from official census data obtained from 1970 to 2010.

Table III-1: Historic Growth Rates

Year	Population	Annual Growth rate (for previous decade)
1970	137	0.0%
1980	600	15.9%
1990	1630	10.5%
2000	4450	10.6%
2010	6753	4.3%

Ivins City has grown significantly since 1970, with annual growth rates of 10%-16% until 2000. In discussion with the City, and to keep consistency between the City's master plans, the same population and projected growth data will be used here as was used in the Ivins City Culinary Water Master Plan, 2013. In that report, Ivins City established growth rates for each decade after 2010.

B. LENGTH OF PLANNING HORIZON

It is typical for an Impact Fee Facilities Plan to use a 5 to 20-year planning horizon or period. For example, the first year of a 6-year planning horizon would be the year of 2016 with the last year being 2022; or fiscal years 2017-2022.

This plan will assume a 6-year planning horizon based upon the following points:

- The City must expend or encumber the impact fees for a permissible use within six years of their receipt.
- Assumptions, understandings, data, objectives, goals, etc. can change within a 6-year period. Population growth may not follow projected values and park and trail construction is to generally follow development in the City.

C. POPULATION PROJECTION

An essential element in development of this Plan is the projection of the City's assumed growth rate to an anticipated planning horizon. The future population for each year was then calculated using the compound interest formula and inserting the projected growth rate, the existing population, and the length of the planning horizon.

$$F = P(1 + i)^n$$

Where, F = Future Population
P = Present Population
i = Growth Rate
n = Years

For this plan we took official census data from 2010, census estimates for 2011-2014, and estimates from 2015 to 2022, using the compound interest formula, to calculate the current and projected populations as shown in Table III-2 and Figure III-1.

Table III-2: Population Projections

Year	Source	Population	Growth
2010	Census	6,753	4.3%
2011	Census Est.	6,931	2.6%
2012	Census Est.	7,161	3.3%
2013	Census Est.	7,379	3.0%
2014	Census Est.	7,665	3.9%
2015	Estimate	7,999	4.4%
2016	Estimate	8,347	4.4%
2017	Estimate	8,711	4.4%
2018	Estimate	9,091	4.4%
2019	Estimate	9,487	4.4%
2020	Estimate	9,900	4.4%
2021	Estimate	10,158	2.6%
2022	Estimate	10,422	2.6%

D. HOUSING UNIT CAPACITY

Ivins City has asked that population projections match the Ivins City Culinary Water Master Plan, 2013. While population data for this study has been taken from the Census, it is important to note the population figures presented in this plan may not fully reflect the population capacity of Ivins City as it relates to total housing units.

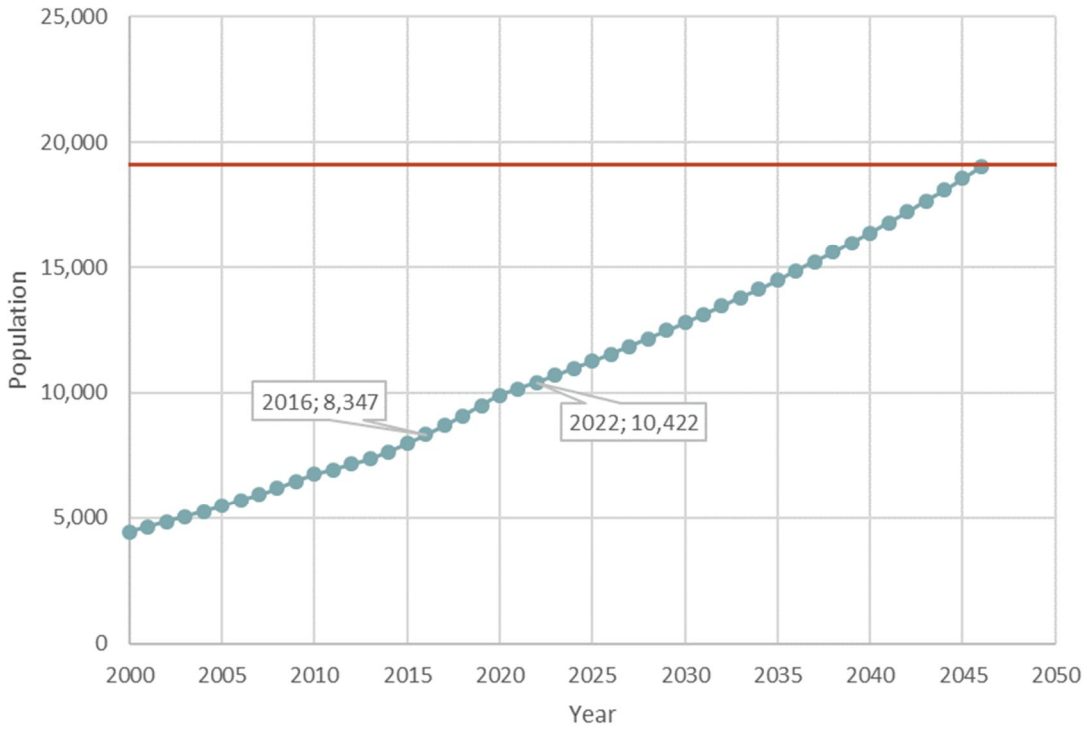


Figure III-1: Population Projections

A note from the Ivins City Culinary Water Master Plan, 2013 states that "resident households are considered to be 85% of the total housing units." The other 15% is to be considered nonresident homes.



Figure III-2: Rocky Point Park

As this plan will calculate an impact fee based on residential units, total number of residential units or households will be calculated for the years in the planning horizon.

For example, the total number of households for 2016 was calculated with the 2016 population estimate, average number of people per household, and taking into account nonresident units. The 2016 population estimate is shown in Table III-2 as 8,347. The census QuickFacts for Ivins, Utah states the five-year average (2010-2014) for people per household as 2.59. By dividing the population by people per household resulting in households and dividing households by 85% results in the total number of households or housing units in Ivins assuming that 15% of homes are nonresident units. This calculation is shown in the following equation.

Current Housing Unit Total (2016):

$$\left(\frac{8{,}347\ people}{2.59\ persons\ per\ household}\right) \div 85\% = \mathbf{3{,}792\ households}$$

The ratio of total housing units to occupied housing units will be assumed to remain constant. This ratio will be multiplied by the projected population to determine the population capacity for that year. Calculations for the current and projected population capacity are illustrated in the following equations.



Figure III-3: Rocky Point Trail

6-year Housing Unit Total (2022):

$$\left(\frac{10{,}422\ people}{2.59\ persons\ per\ household}\right) \div 85\% = \mathbf{4{,}734\ households}$$

The number of total housing units for a given year can be determined using the compound interest formula and the 2016 Census total housing units of 3,792. Alternatively, the number of total housing units can be calculated by taking the population estimate and dividing it

by the average household size of 2.59 and then dividing that by 85%. More details of the user analysis are found in Appendix B.

E. NON-RESIDENTIAL UNITS

Consistent with previous parks and trails plans, the number of commercial, industrial, business, and non-residential units were not considered a part of this plan or analysis because their impact on the recreation within the City, at this time, is negligible.

At such time as it becomes apparent that these non-residential type units have impact on the parks and trails facilities of Ivins City, the City may seek to perform additional analysis or impose an impact fee, but at this time no fee will be assessed.



Figure III-4: 200 East Trailhead

IV. INVENTORY

This section seeks to inventory the existing parks and trails facilities within Ivins City, establish guidelines, standards, classifications and existing LOS to be used throughout the facilities plan and in future parks and trails planning. Information was gathered from the City's Parks & Recreation and Public Works departments along with various site investigations and with information provided by City personnel.

A. NRPA GUIDELINES

The National Recreation and Park Association (NRPA) has identified and established standards for the development of park facilities to help communities set guidelines for the types, sizes, proximity, and number of recreational facilities that should be provided for the community (see Appendix C). The NRPA cautions communities that these standards are only guidelines, and that each community can adjust these standards to meet their individual requirements.

Ivins City is located in a region known for a variety of outdoor recreational opportunities. Its close proximity to golf courses, state parks, national parks, national forests, etc. add to the recreational needs of the community. Therefore, it may not be necessary for the City to strictly adhere to these guidelines, however, these standards and guidelines are beneficial in planning and developing a recreational facilities plan.

Considering the unique features Ivins City has, combined with the NRPA's standard guidelines, recommendations for the planning, development, and facility guidelines have been set forth in this plan.



Figure IV-1: Abby Gale Shurtleff Park

B. PARK & TRAIL CLASSIFICATION

Ivins City has various recreational demands and several types of facilities to meet these demands. Using the NRPA's standards as a basis, the following park and trail classifications have been identified as types of recreational facilities that help meet the recreational demand of the community. The following is a description of each type of classification, general parameters that apply to the classification, specific

examples of the classification, and if the classification is applicable to the overall LOS used in the impact fee analysis. A list of amenities in each existing park is shown in Appendix C.

Table IV-1: Ivins City Park & Trail Classifications

CLASSIFICATION	DESCRIPTION	TYPICAL SIZE	AREA SERVED	APPLICATION OF LOS
Private Park/Facility	Used to address limited or isolated recreational needs for private communities.	0.25 - 1 acre	0.15 mile radius	No
Special Use	Covers a broad range of parks and recreation facilities oriented toward single-purpose use.	0.1 - 1 acre	Variable	Yes
Neighborhood Park	Remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood.	3 - 10 acres	0.4 mile radius	Yes
School Park	Often complement open space and could possibly serve in number of capacities such as a neighborhood park or youth athletic field.	Dependent upon school district	1 mile radius or boundary of school	No
Community Park	Serves broader purpose than neighborhood park. Focus is on meeting a wide range of recreational activities (passive, active, programmed sports, league play, tournaments, etc.) for the several neighborhoods or the entire community.	10 - 40+ acres	1.5 mile radius	Yes
Natural Resource Areas	Lands set aside for preservation of significant natural resources, remnant landscapes, open space and visual aesthetics or buffering.	Resource availability and Opportunity	Variable (usu. 0.4 mile radius)	No
Regional Park	Large recreation area that serves an entire city or region. Often includes multiple special use facilities and accommodates large numbers of people for a variety of day use activities.	Variable, large scale	Ivins City, Washington County, Southern Utah	No
Trail	Serves as paved transportation corridors for non-motorized modes of transportation. Used to interconnect parks, neighborhoods, downtown, and bordering cities and sites.	10 width, length varies	Ivins City and surrounding region	Yes
Unimproved Trail	Nature trails for pedestrians, which may use either hard or soft surfaces.	Width varies, length varies	Ivins City and surrounding region	No
Bike Route	Designated portions of the roadway for the preferential or exclusive use of bicyclists.	Width varies, length varies	Ivins City and surrounding region	No

i. Private Park/Facility



Figure IV-2: Private Clubhouse Area

Description: The private park/facility is the smallest park classification and is used to address limited or isolated recreational needs for private communities. They are generally developed within a residential area for the exclusive use of residents and are maintained through a neighborhood association. Even though all parks within this classification are private they still serve the recreational needs of the local neighborhoods, however, they are not a complete substitute for public recreation space.

Location: Central to a neighborhood or servicing a specific recreational need or taking advantage of a unique opportunity. Often times location of these private parks/facilities will be determined by the developer with the City often times negotiating final location.

Access: By way of interconnecting trails, sidewalks, or low-volume residential streets.

Desirable Size: 0.25 – 1 acre

Area Served: 0.15 mile radius

Examples: Private parks, private clubhouses

Application of LOS: No

ii. Special Use

Description: The Special Use classification cover a broad range of parks and recreation facilities oriented toward single-purpose use. These may be historical sites like historic buildings, gardens, amphitheaters, and cultural sites or specialized recreation facilities like age specific parks or activity specific facilities.

Location: Centrally located within its service area but this varies for each facility.

Access: By way of interconnecting trails, sidewalks, or low volume residential streets.

Area Served: Variable

Examples: Megan Park, Mohave Estates Park, Rocky Point Park

Application of LOS: Yes

iii. Neighborhood Park

Description: The neighborhood park remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood. This type of park provides activities for all age groups and addresses the specific recreational needs of the nearby neighborhood it serves. Facilities may include play structures, picnic areas, shaded seating, soft and hard surface courts, restrooms, trails, and large informal open areas for unorganized play activities. Typically, parks in this classification have no lighted athletic fields for team competition, and no schedule for organized programs.



Figure IV-3: Red Rock Park

Location: Centrally located within its service area and uninterrupted by non-residential roads and other physical barriers.

Access: By way of interconnecting trails, sidewalks, or low volume residential streets.

Desirable Size: 2 – 10 acres

Area Served: 0.4 mile radius

Examples: Del Coronado Park, Red Rock Park

Application of LOS: No

iv. School Park

Description: The school-park combines the resources of two public agencies and provides a range of recreational services and facilities to several neighborhoods that are served by a school. Depending on circumstances, school-park sites often complement open space and could possibly serve in a number of capacities, such as a neighborhood park or youth athletic field. Even though all parks within this classification are determined by the school district and location of schools, it is important to understand these schools serve the recreational needs of surrounding neighborhoods.

Location: Adjacent to a school facility.

Access: By way of interconnecting trails, sidewalks, and streets. Should have direct access from a collector level (larger) street.

Desirable Size: Dependent upon school district

Area Served: 1 mile or boundary of school

Examples: Red Mountain Elementary School, Vista School, Tuacahn High School

Application of LOS: No

v. Community Park

Description: The community park may be larger in size and serves a broader purpose than the neighborhood parks. Their focus is on meeting a wide range of recreational activities for several neighborhoods or sections of the community. They allow for group activities and offer other recreational opportunities not feasible – nor perhaps desirable – at the neighborhood level. Community parks can accommodate special events and gatherings, and can provide for a broad variety of activities and recreation opportunities. Community parks may be highly developed with amenities such as playgrounds, lighted athletic fields, programmed sports which accommodate specific needs of user groups and athletic associations based on demand and program offering, or they may include large open

spaces with sensitive environments such as wildlife habitat, river corridors, and flood plains, greenways, and other protected open space and sensitive lands.

Location: Community parks should be viewed as a strategically located community-wide facility rather than serving a defined neighborhood or area. They should not be adjacent to residential areas unless buffering (topographic breaks, vegetation, walls, etc.) is used, but more importantly the quality of the natural resource base should play a significant role in site selection. Identifying location of these facilities is critical to avoid long term conflicts.



Figure IV-4: UNITY Park Field

Access: The site should be serviced by a collector level street and not through a residential road. Given that a community park will be likely used for types of league play and tournaments, access routes from outside the community should also be considered. The site should be easily accessible by way of interconnecting trails, as well.

Desirable Size: 10 – 40+ acres

Area Served: 1.5 mile radius

Examples: UNITY Park, Ivins City Park, Fire Lake at Ivins Reservoir

Application of LOS: Yes



Figure IV-5: Ivins Reservoir

vi. Natural Resource Areas

Description: Natural resource areas are lands set aside for preservation of significant natural resources, remnant landscapes, open space, and visual aesthetics. These lands consist of individual sites exhibiting natural resources, are unsuitable for development but offer natural resource potential, or are protected lands. These areas may double as drainage ways, ponding areas, and utility easements.

Location: Resource availability and opportunity determine location.

Access: By way of interconnecting trails, sidewalks, or low-volume residential streets.

Desirable Size: Variable

Area Served: 0.4 mile radius

Examples: Kayenta Rock Park, Evening Star Park, Winlock Hill Open Space

Application of LOS: Yes



Figure IV-6: Snow Canyon State Park

vii. Regional Park

Description: The regional park classification is a large recreation area that serves an entire city or region. The regional park often includes multiple special use facilities including golf courses, lakes, nature centers, campgrounds, state parks, national parks and a broad expanse of natural scenery or open space. Regional parks are designed to accommodate large numbers of people for a variety of day use activities.

Location: Often developed around a unique or significant resource or to emphasize a regional recreational interest. They also serve as a buffer and separation between communities or other areas.

Access: Typically, regional parks are serviced by a main arterial

Desirable Size: Variable, large scale

Area Served: Ivins City, Washington County, Southern Utah

Examples: Snow Canyon State Park, Red Cliffs Desert Reserve, Santa Clara River Preserve, other Nearby State and National Parks

Application of LOS: No

viii. Trail

Description: Trails or trail systems are generally transportation corridors for non-motorized modes of transportation such as walking, jogging, running, and cycling and provide valuable recreation and transportation opportunities for residents and visitors. They are used to interconnect parks, neighborhoods, downtown, and bordering cities and sites.

Location: Generally located in natural corridors such as along stream and river banks and along washes. May also be within the ROW of roads to allow safer pedestrian and cyclist routes than on the shoulder of the road.



Figure IV-7: Rocky Point Trail

Access: These trails should be serviced mainly by other park classifications to capitalize on existing facilities or features. All trails should interconnect and have access points to parks, residential roads, local connectors, and main thoroughfares.

Desirable Size: 10 feet in width, length varies

Area Served: Ivins City and surrounding region

Examples: Churchfield Trail, Padre Canyon Wash Trail

Application of LOS: Yes

ix. Unimproved Trail

Description: Unimproved trails emphasize a relationship with the natural environment. These are most often located within natural resource areas and greenways. Since regional and state parks often develop and maintain these types of trails, the need for them at the local level is often limited. They can provide a different opportunity for interconnectivity between other parts of the park system more oriented on the natural environment rather than city parks.

Location: Generally located in natural corridors but in more remote or less traveled areas than improved trails. Care should be taken to ensure preservation and enhancement of these natural corridors and habitat to maintain the fragile ecosystem in which they are placed.

Access: Since these trails are typically in remote areas they may not be serviced by other park classifications. Some trails may require controlled access to preserve environmental features. Trails could interconnect and have access points to parks and residential roads.

Desirable Size: Width and length varies. Ivins City prefers to have 10 feet of trail width.

Area Served: Ivins City and surrounding region

Examples: Toe Trail, Red Mountain Trail, Hellhole Trail

Application of LOS: No

x. Bike Route

Description: Bikeways are paved segments of roadways that serve to safely separate bicyclists from traffic. Bike routes are essentially paved shoulders of segments of the roadway that serve this purpose. Bikeways serve commuters, fitness enthusiasts, and competitive athletes.

Location: Generally located along major arterial roads and major thoroughfare roads.

Access: Bikeways should be planned as stand-alone systems that connect to the off-street trail system.

Desirable Size: 5 feet in width, length varies (design standards should coincide with local, state and federal standards).

Area Served: Ivins City and surrounding region

Examples: Snow Canyon Dr. Bike Route, Center St. Bike Route, Old Hwy 91 Bike Route

Application of LOS: No

xi. Additional Considerations

Ivins City has expressed an interest in having some Bike Lanes along major roadways in the City. Bike Lanes differ from Bike routes. Bike Lanes are designated portions of the roadway, that is usually striped, for preferential or exclusive use by bicyclists. Constructing Bike Lanes over Bike Routes would be done at the discretion of the City.

C. EXISTING FACILITIES

Currently, there are 13 existing parks and 15 trails which are under the jurisdiction of the Ivins City Parks and Recreation Department. Maps of these parks and trail systems are found in Appendix A map titled *"Existing Facilities" (Map 2)*.

The previous Table IV-2 summarizes the acreage and names of the parks included in the existing facilities inventory.

Table IV-3 shows the City's trails systems and their associated lengths that are part of the existing facilities inventory.

Table IV-2: Existing Parks

PARK NAME	CLASSIFICATION	DEVELOPED AREA *[acres]*	UNDEVELOPED AREA *[acres]*	TOTAL AREA *[acres]*
Abby Gale Shurtleff Park	Neighborhood Park	0.25	8.08	8.33
Del Coronado Park	Neighborhood Park	0.28	0.00	0.28
Desert Rose Park	Neighborhood Park	0.50	1.38	1.88
Evening Star Park	Natural Resource Areas	0.00	3.29	3.29
Fire Lake at Ivins Reservoir	Community Park	4.00	41.78	45.78
Ivins City Park	Community Park	4.26	0.00	4.26
Kayenta Rock Park	Natural Resource Areas	0.00	18.44	18.44
Megan Park	Special Use	0.26	0.00	0.26
Mohave Estates Park	Special Use	0.56	0.00	0.56
Red Rock Park	Neighborhood Park	2.07	0.00	2.07
Rocky Point Park	Special Use	1.42	0.00	1.42
UNITY Park	Community Park	11.41	0.50	11.91
Winlock Hill Open Space	Natural Resource Areas	0.00	12.82	12.82
	TOTAL	25.00	86.30	111.30

Table IV-3: Existing Paved Trails

Trail Name	Length *[miles]*
200 East Trail	1.05
400 South Trail	0.02
400 West Trail	0.41
800 South Trail	0.10
Anasazi Drive Trail	0.57
Churchfield Trail	3.70
Old Highway 91 Trail	0.05
Padre Canyon Wash Trail	0.31
Painted Hills Trail	0.23
Red Rock Trail	0.40
Snow Canyon Drive Trail	1.19
Taviawk Loop Trail	0.96
Toe Trail	0.14
Toe Trail Spur	0.19
UNITY Park Loop	0.48
TOTAL	9.79

V. LEVEL OF SERVICE ANALYSIS

This section sets forth goals set by Ivins City concerning parks and trails in the community, establishes a targeted LOS desired by Ivins City and quantifies the future demands on parks, trails and recreation facilities necessary to maintain the existing LOS.

A. EXISTING LEVEL OF SERVICE

Establishing an existing LOS is a fundamental part of an impact fee facilities plan and analysis. Specific terms used in this plan to characterize a level of service are defined as follows:

Existing LOS: the current "felt" level of service or what an existing user feels in regards to using parks and trails facilities.

Target LOS: the level of service the City desires to attain categorized by parks and trails.

The LOS calculations only take into account developed park acreage because that is the area that has been built. Undeveloped park acreage may be planned for future developed park acreage to achieve the target LOS. Based on the aforementioned inventory, guidelines, and classifications, the existing LOS for Ivins City will be divided into two major classifications: Parks and Trails.

i. Parks

The existing LOS for parks will be based upon an acreage per thousand people (acres/1,000 people) and will be divided into two sub-classifications: neighborhood parks and community parks.

To calculate the existing LOS the area of each park is summed up then the total developed acreage is divided by the current estimated population and then multiplied by 1,000 as illustrated is the following equation.

$$\frac{Area\ of\ Parks}{8{,}347}(1{,}000) = Existing\ LOS$$

Finally, a figure of 2.99 (acres/1,000 people) is calculated by similar means to yield the existing developed LOS as shown in the equation below using values from Table IV-2.

$$\frac{25.0\ acres}{8{,}347\ people}(1{,}000) = \mathbf{2.99}\ acres/1{,}000\ people$$

ii. Trails

The existing LOS for trails will be based upon a mileage per thousand people (miles/1,000 people) and is calculated in the exact manner as the parks. The existing LOS for paved trails yields a figure of 1.17 (miles/1,000 people) as shown in the equation below using values from Table IV-3.

$$\frac{9.79\ miles}{8{,}347\ people}(1{,}000) = \mathbf{1.17}\ miles/1{,}000\ people$$

B. TARGET LEVEL OF SERVICE

For the target LOS to be established it is necessary to understand the existing LOS that is being provided to the citizens of Ivins City. In reviewing previous capital facilities plans and impact fee studies completed in 2008, and the general plan, the target LOS for Ivins City has been 7.6 acres of park per 1,000 residents, higher than the 6.0 acres of park per 1,000 residents standard set by the NRPA. Bear in mind, any increase from the existing LOS to a higher target LOS requires funding from other fees besides impact fees (i.e. user fees or general fund).

Since these plans have been completed, Ivins City has completed several trail systems, and built a sizable community park. While the NRPA standard of 6 acres of park per 1,000 residents, that value is calibrated more towards urban metropolitan cities. In discussion with City staff, a process was established to calculate an adequate target LOS for their parks and trails based upon the following points:

- NRPA standards are only guidelines, and that each community can adjust these guidelines to meet their individual requirements
- NRPA standards are tailored more for an urban environment
- Ivins City is located in an ideal location for outdoor recreation and access to numerous regional type parks
- Many of the recreational facilities such as trails, amphitheaters, regional parks, golf courses, etc. are not accounted for in the 6.0 acres of park per 1,000 residents, but enhance the recreational opportunities for Ivins City residents

For the purpose of this study, the target LOS for the parks and trails classifications was back-calculated from the proposed facilities plan. The proposed facilities plan includes all parks and trails that the City would like to have at buildout. The values for total area of parks was calculated to be 71.4 acres and with a buildout population of 19,100, the target LOS for parks is 3.72 (acres/1,000 people). The values for total miles of improved trails was calculated to be 35.26 miles and with a buildout population of 19,100, the target LOS for parks is 1.82 (miles/1,000 people). These values are shown in Table V-1.

Table V-1: Existing LOS Summary

CATEGORY	EXISTING LOS	TARGET LOS	UNITS
Park	2.99	3.72	acres/1,000 people
Trail	1.17	1.82	miles/1,000 people

VI. IMPACT FEE FACILITIES PLAN

The major reason Ivins City has experienced tremendous growth in the past 40 years is the quality of life it offers. It is the City's responsibility to ensure that proper planning is occurring, so that this level of quality is maintained and enhanced. This section identifies proposed or future parks and trails and provides recommendations based upon the planning horizon for implementation of these facilities and ultimately, accomplishing the goal of maintaining the target LOS and quality of life in regards to parks and recreation found in Ivins City.

A. GROWTH DEMANDS

The additional growth demand or impact in terms of additional population is calculated by taking the difference between future population at the end of the planning horizon (2022) and the current population (2016) as shown in the equation.

$$10{,}422\ people - 8{,}347\ people = 2{,}075\ people$$

Once the population increase due to growth is calculated then this figure is simply multiplied by the target LOS to obtain the future target demand due to growth as shown in these equations.

Parks:

$$2{,}075\ people\left(\frac{3.72\ acres}{1{,}000\ people}\right) = \mathbf{7.73\ acres}$$

Trails:

$$2{,}075\ people\left(\frac{1.82\ miles}{1{,}000\ people}\right) = \mathbf{3.78\ miles}$$

This is the park acreage and trail mileage that should be built to match the target demand for growth in the next six years. These figures will figure into the impact fee facilities plan and impact fee analysis.

B. PARK FACILITIES PLAN

This park capital facilities plan provides Ivins City with direction in terms of park development to meet future demands and satisfy the recreational needs of the community. In order to meet the future demand, the following 10 parks, with corresponding classification and approximate acreage have been identified in Table VI-1.

Table VI-1: Proposed Parks

PARK NAME	CLASSIFICATION	TOTAL AREA *[acres]*
Fire Lake at Ivins Reservoir	Community Park	5.2
Desert Rose Park	Neighborhood Park	1.4
UNITY Park	Community Park	0.5
Rock Vista Park/Fitness Facility	Neighborhood Park	2.0
600 W Park	Neighborhood Park	2.0
Sage Way Park	Neighborhood Park	10.0
Black Rock Park	Neighborhood Park	5.0
400 S Park	Neighborhood Park	10.0
Palisades Park	Neighborhood Park	5.0
Silver Sage Park	Neighborhood Park	5.0
	TOTAL	46.1

Roughly, 46 total acres of park have been identified. Maps of each of these parks can be found in Appendix A maps titled *"Proposed Facilities Plan" (Map 5-A1 through Map 5-B2*).

In certain instances, neighborhood parks are the responsibility of new development, to match the demand created by the development. These parks are sometimes built by the developer and then turned over to the City. The City may give an impact fee credit in exchange for the facility to the developer if the park meets four conditions: 1) minimum of 2 acres, 2) satisfies an improvement according the current Parks and Trails Master Plan, 3) park layout and amenities are agreed upon prior to construction, and 4) park is constructed according to City standards or better. This process benefits both parties given that the new development is more appealing with a neighborhood park and the City acquires the park acreage required to be constructed by this plan and new development.

In the case of community parks, the City will generally be responsible for the development and construction of these types of facilities, since they typically serve multiple neighborhoods and often require a great deal of planning in order to be strategically located to serve the entire community. City parks typically provide large areas that may double as detention basins for storm water. Ivins City storm drain utility, and the City in general, would benefit from having detention basins incorporated into public parks where detention facilities would be needed. Coordination with Ivins City Public Works is critical in knowing the location, size, and timeline for detention basins. It was made known that a detention basin is needed at that site of 400 South Park.

Of the 46.1 acres of park identified in this plan, portions of three different parks or about 7.1 acres have been included in the 6-year planning horizon. A potential construction year and a percent impact fee eligible is shown for these three parks in the next section in Table VII-2. It is important to note that UNITY Park was built in 2006, but since there is still outstanding debt service to be paid on the park, a percentage of its acreage can still be eligible for impact fees. Percent eligible values for each park thought to be in the 6 year planning period is found in Table VII-2 in the Impact Fee Analysis section of this report. A map titled *"6 Year Proposed Facilities Plan" (Map 4)* focusing on these specific parks is found in Appendix A. To achieve the target LOS within the 6-year planning horizon, 7.73 acres of new developed park will need to be constructed. This means that Ivins City should on average construct approximately 1.3 acres of park per year. However, after taking the payments for UNITY Park into account, Ivins City will be able to pay for 2.34 acres of new parks over the six year planning horizon with impact fees.

C. TRAIL FACILITIES PLAN

This section of the facilities plan provides Ivins City with direction in terms of trail development to meet future demands and emphasizes safe travel for pedestrians to and from parks and around the community. The focus is as much on transportation as it is on recreation. The following 26 trail systems, with corresponding approximate mileage have been shown in Table VI-2.

A total of approximately 25.57 miles of new trails, trail extensions, and trail systems have been identified and maps of each of these trails are found in Appendix A maps titled *"Proposed Facilities Plan" (Map 5-A1 through Map 5-B2*).

Table VI-2: Proposed Trails

Trail Name	Length *[miles]*
200 East Trail	0.67
400 South Trail	1.41
400 West Trail	0.55
450 North Trail	0.67
800 South Trail	0.78
Anasazi Drive Trail	3.47
Black Rock Trail	0.95
Center St - Hwy 91 Connector	0.32
Churchfield Trail	1.60
Evening Star Drive Trail	1.04
Ivins Reservoir Loop East Connector	0.08
Ivins Reservoir Loop North Connector	0.38
Ivins Reservoir Park Access	0.13
Ivins Reservoir Park Loop	1.12
Old Highway 91 Trail	5.33
Padre Canyon Wash Trail	0.23
Painted Hills Trail	0.20
Paiute Drive Trail	0.81
Pioneer Pkwy Trail	0.15
Puerto Drive Trail	0.51
Red Rock Loop Connector	0.33
Red Rock Park Loop	0.53
Sage Way Trail	1.37
Taviawk Loop Trail	0.61
Toe Trail	0.92
Tuacahn Trail	1.43
TOTAL	25.57

In many instances, these trails will come with the arrival of new development. These trails are sometimes built by the developer and then turned over to the City. If this is the case, the City requires the trail material to be asphalt, which complies with their standard specifications (esp. Standard Drawing R-10), and the trail must be ten feet in width at a minimum. In exchange for a length of trail constructed to City standards, the City may give an impact fee credit for the trail length to the developer. This process benefits both parties given that the new development is more appealing with a network of trails and ties into the City trail system and the City obtains the constructed trail mileage needed by this plan and new development.

Often times with trails, the City will focus their efforts on implementing the major connections or trunk lines of the community trail system and let development drive the need, planning, and construction of the secondary trails.

Of the 25.57 miles of trail identified in this plan, 3.78 miles are required to be built within the 6-year planning horizon to meet the target LOS. Since trail construction is driven on the impact of new development, it is difficult to identify which trail systems will be built within the planning horizon. Several trails have been identified by the City as being built in the 6-year planning horizon. This means that Ivins City should on average construct approximately 0.63 miles of trail per year. The City may adjust the 6-year plan according to residential development to better fulfill the Trails Master Plan. However, Ivins City will only be able to pay for 2.43 miles of new trails over the six year planning horizon with impact fees.

D. ADDITIONAL CONSIDERATIONS

To help the City understand the level of service throughout the community a set of maps titled "*Existing Theoretical Service Areas" (Map 3A) and Proposed Theoretical Service Areas" (Map 3B)* have been provided in Appendix A. These maps show the service area for the park classifications explained in Section IV.

When the service areas for multiple components, both existing and proposed, are plotted on a map a radius emerges that represents the cumulative service provided by that classification upon a geographic area. These maps can be used to determine if there are areas with higher/lower levels of service, which in turn can be used in the park planning process.

All parts of the community will have different levels of service. For example, commercial and industrial areas might reasonably be expected to have lower levels of service for parks and trails opportunities than residential areas.

As Ivins City is between Snow Canyon State Park, St. George, Santa Clara, BLM land, and the Shivwits band of Paiute Indians Reservation, they have expressed interest in creating a trail network that connects to trails belonging to each of these entities to provide an interconnected regional trail network. The City has set a high priority to connect to these trails, but construction will be at the discretion of Ivins City.

This plan does not specifically address anticipated developments in Ivins, especially in the 6-year planning horizon. However, one major development coming to Ivins starting in the fall of 2017 is Rocky Vista University (RVU). RVU plans to build student housing and may seek to build a joint recreation facility in exchange for impact fee credits. This development may come in quickly and coordination will be a must to ensure both RVU and Ivins City Parks and Recreation Department mutually benefit from the development.



Figure VI-1: UNITY Park Field

VII. IMPACT FEE ANALYSIS

A final component to any community plan is an impact fee analysis or a calculation of costs attributed to growth within the planning horizon window. This calculation is considered an impact fee or a payment of money imposed upon future development activity as a condition of development approval. This section includes a cost analysis of proposed improvements, impact fee calculations, cash flow analysis, and an impact fee certification.

A. EXISTING IMPACT FEE

As a result of the 2008 Impact Fee Analysis, the maximum allowable impact fee for parks and trails was $4,723.84 per residential unit. The actual impact fee that was adopted by City officials and is the current impact fee assessed, is $4,723.84. Commercial and industrial properties are not charged a parks and recreation impact fee.

B. COST ANALYSIS

An important part of calculating any impact fee is understanding and estimating the costs associated with new infrastructure. The total cost for each classification has been divided into three cost categories:

Construction: the cost for construction was obtained from recent bid tabulations in neighboring communities for existing parks, trails, and recreation facilities.

Incidentals: incidental costs such as planning engineering design and construction services, bidding and negotiating, inspection, preliminary engineering, environmental compliance, geotechnical reporting and testing, survey, origination fees, permitting, etc. were based upon previous projects and assumed to be 15% of the construction costs.

Table VII-1: Unit Cost Summary

COST CATEGORY	PARK	TRAIL	IFFPA
	($/acre)	*($/mile)*	*(1 Plan)*
COST CATEGORY	$ 260,000.00	$ 498,362.48	-
Incidentals *(15%)*	$ 39,000.00	$ 74,754.37	
Land	$ 80,000.00	$ -	
Total	$ 379,000.00	$ 573,000.00	$ 35,000.00

Land: land costs for parks were based upon estimated current market conditions for raw land. Land for trails was assumed to be within the ROW or donated and therefore was not included in impact fee calculations.

The final unit costs calculated for all parks and trails including an Impact Fee Facilities Plan and Analysis (IFFPA) update cost are summarized in the Table VII-1 in 2016 U.S. dollars. Detailed calculations on how these unit prices were calculated is found in Appendix D.

Parks Cost: Once park unit costs were calculated, they were then applied to the 6-year park facilities plan to obtain current cost for parks as shown in Table VII-2. Current Costs for each park and adjusting for inflation, the total estimated impact fee eligible cost for parks is $1,826,517. The percent impact fee

eligible for each park was based on priority until the maximum acreage covered by impact fees was met as shown later in this section.

Trails Cost: Because the trails facilities plan assumes 1.3 miles of trail will be built each year in the planning horizon, a calculation of multiplying the growth demand by the unit cost of trail and then applying the compound interest formula for inflation yields impact fee eligible costs. Using the values in Table VII-2, a total estimated impact fee eligible cost for trails is $1,519,632.

IFFPA Update Cost: This plan is recommended to be updated at least every five years. Therefore, one update is anticipated during the planning horizon. The updates to this plan are considered 100% impact fee eligible and the total estimated impact fee eligible cost after inflation for IFFPA updates is $40,600.

A summary of all estimated impact fee eligible costs are shown in Table VII-2 for a total amount of $3,386,749.

C. PROPOSED IMPACT FEE

The impact fee facilities plan, included in Section VI, outlined the demand or impact to be placed on the Ivins City parks and trails facilities by growth and development. If only impact fees are used to build new developed parks and trails, the target LOS will not be reached. New facilities should be constructed within the planning horizon to maintain an acceptable LOS of parks and trails.

The impact fee facilities plan, located in Section VI, provides planned improvements or means whereby Ivins City will be able to meet those demands and maintain the existing LOS relating to parks and trails.

The above mentioned cost analysis, provides estimated costs for those planned improvements and gives a detailed perspective of how these cost. Outside funding sources may be available to improve the parks

Table VII-2: Proposed Parks & Trails and Maximum Allowable Impact Fee

Name	Size	Priority	Current Costs	Year	Inflated Costs	% Impact Fee Eligible	Impact Fee Eligible
UNITY Park Debt Service		1st				100.0%	$ 862,320
UNITY Park Additions	0.5 *ac*	4th	$ 189,500	2022	$ 226,300	0.0%	$ -
Desert Rose Park	1.4 *ac*	2nd	$ 530,600	2017-2019	$ 563,100	100.0%	$ 563,100
Fire Lake at Ivins Reservoir	5.2 *ac*	3rd	$ 1,986,706	2018-2022	$ 2,237,900	17.9%	$ 401,097
						Subtotal for Parks	*$ 1,826,517*
Tuacahn Trail	0.9 *mi*	1st	$ 515,700	2017	$ 531,200	100.0%	$ 531,200
Old Highway 91 Trail	3.1 *mi*	2nd	$ 1,776,300	2020	$ 1,999,200	49.4%	$ 988,432
						Subtotal for Trails	*$ 1,519,632*
IFFP/IFA		1st	$ 35,000	2021	$ 40,600	100.0%	$ 40,600
						Total	$ 3,386,749
						No. New Households	942
						Impact Fee per Household	$ 3,594.15

and trails in Ivins. Other funding sources were not considered in this analysis, however, they may be sought after to increase the LOS of parks and trails above and beyond what impact fees will pay.

The general idea behind calculating a proposed impact fee amount is relatively simple: the total impact fee eligible expenses are divided by the total additional growth, or in this case, the growth in households as calculated in Section III. The calculations for determining the proposed impact fee amount are shown in the equation and Table VII-2.

$$\frac{\$3{,}386{,}749}{942\ households} = \$3{,}594.15\ \boldsymbol{per\ household}$$

This figure represents the maximum amount that can be charged per household. The City Council may set the actual impact fee, but it may not exceed this maximum amount.

A cash flow spreadsheet has been completed to show the collection and expenditure of impact fee funds and is found in Appendix E.

The percent impact fee eligible is calculated by taking the total eligible park area (or trail length) to be built within the next six years and subtract the prioritized park areas, then divide all of that by the area of the park in question. This yields the percentage of the park that can be covered by impact fees.

First, a total area of existing and equivalent parks must be calculated to yield an impact fee eligible level of service. The 11.4 acre UNITY Park was built with a $3.59 million dollar loan and $1.44 million of the loan is paid off (40.0%). The City currently has $868,304 in the Impact Fee Fund that has been collected from the current population. The total built and fully owned park area (13.6 acres) is added to the portion of UNITY Park that is paid off, which is added to the equivalent park area of cash in the impact fee account.

$$13.6\ acres + (11.4\ acres \times 40.0\%) + \frac{\$868{,}304}{\$379{,}000/ac} = 20.44\ acres$$

Recall that the existing population is estimated at 8,347 people, and it was estimated that 2,075 people will pay impact fees over the six year planning period. An impact fee eligible level of service is calculated by dividing the total area of existing and equivalent parks by the current population. This level of service is then multiplied by the increase in population over the next six years to yield a maximum park area that can be paid for by impact fees. The maximum park acreage that will be covered by impact fees over the six year planning period is 5.08 acres.

$$\frac{20.44\ acres}{8{,}347\ ppl} \times 1{,}000 = 2.45\ \frac{acres}{1{,}000\ ppl}$$

$$2.45\frac{acres}{1{,}000\ ppl} \times \frac{2{,}075\ ppl}{1{,}000\ ppl} = 5.08\ acres$$

According to the loan schedule for UINTY Park, $862,320 will be paid towards the $3.59 million loan in the next 6 years. This represents 24.0% of the loan amount. The equivalent developed area of UNITY Park that will be paid off during the planning period is 2.74 acres.

$$11.4\ acres \times 24.0\% = 2.74\ acres$$

The highest priorities for impact fees are to pay off UNITY Park and to construct Desert Rose Park. A portion of Fire Lake at Ivins Reservoir will also be paid with impact fees. The acreage of UNITY Park to be paid off (2.74 acres) and the acreage of proposed Desert Rose Park (1.5 acres) are subtracted from the maximum park acreage (5.08 acres) that will be covered by impact fees over the six year planning period. That all is divided by the proposed developed park acreage of Fire Lake at Ivins Reservoir (5.24 acres) to yield a maximum percentage of Fire Lake at Ivins Reservoir that can be paid for by impact fees.

$$\frac{5.08\ ac - 1.40\ ac - 2.74\ ac}{5.24\ ac} = 17.9\%$$

Similarly, but more simply, the total mileage of existing improved trails is 9.79 miles. The existing trails length divided by the current 8,347 residents yields an impact fee eligible level of service of 1.17 miles per 1,000 people. Multiplying this level of service by the additional 2,075 people yields the maximum length of trail that impact fees can pay of 2.43 miles. Assuming the planned length of the Tuacahn Trail is to be built, only 1.5 miles of Old Highway 91 Trail will be paid for by impact fees. 1.5 miles is 49.4% of the 3.1 miles of the total trail length.

$$\frac{2.43\ mi - 0.9\ mi}{3.1\ mi} = 49.4\%$$

This analysis meets the Impact Fee Facilities Plan requirements. Minor adjustments to actual facilities, such as location, size, and function may be necessary based on how future growth actually occurs.

D. IMPACT FEE RELATED ITEMS

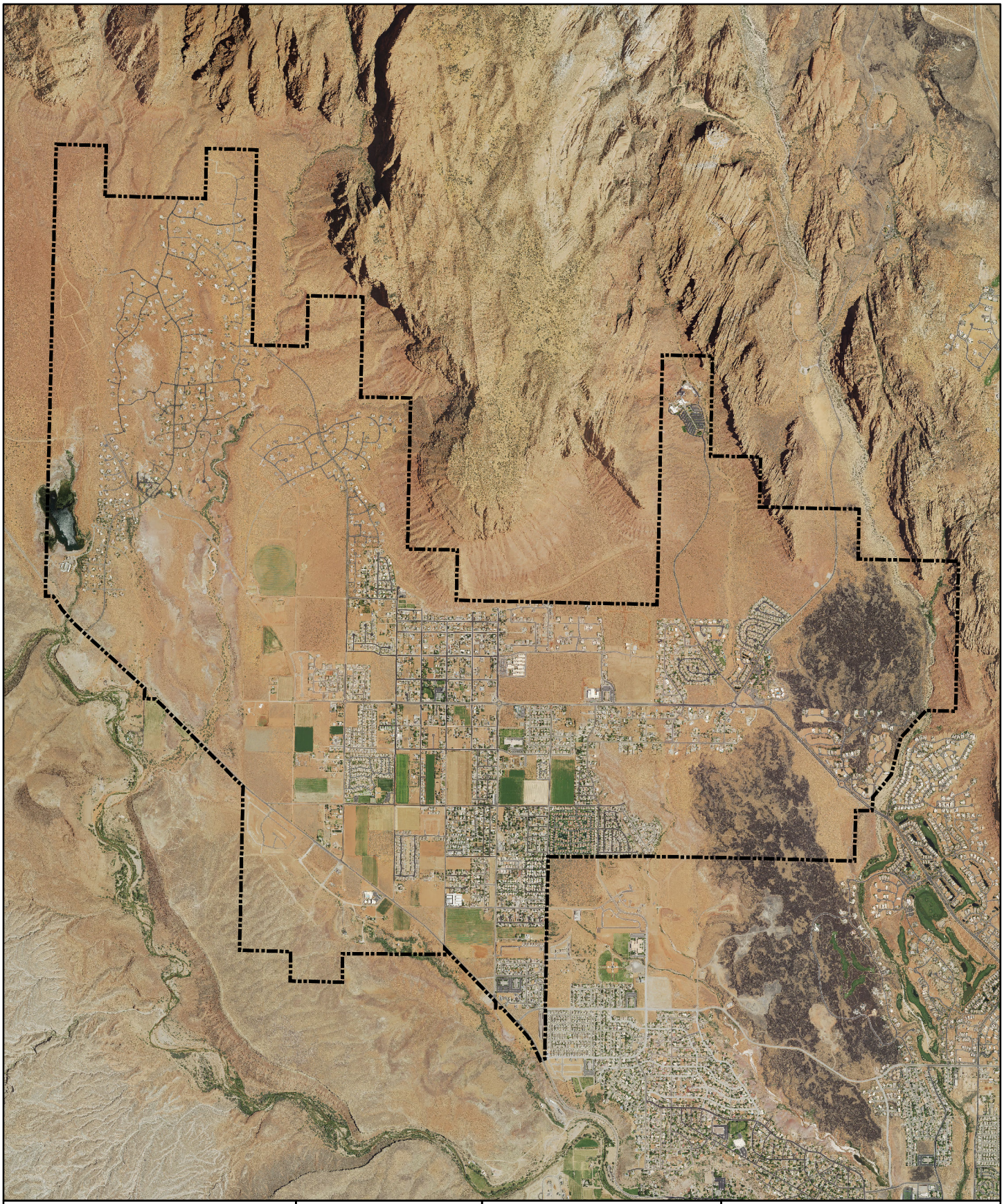
In general, it is beneficial to update this Impact Fee Facilities Plan and Analysis at least every five years or more frequently if drastic growth or changes effect the assumptions and data in this plan. It is assumed that this plan will be updated as recommended.

There are a few items relating to impact fees that Ivins City must consider when planning for, collecting, and expending impact fees in accordance with Utah Code 11-36a-101.

City staff must understand that impact fees can only be expended for a system improvement that is identified in the Impact Fee Facilities Plan and that is for the specific facility type for which the fee was collected. Impact fees must be expended or encumbered for a permissible use within six years of their receipt unless 11-36a-602(2)(b) applies. Also, impact fees must have a proper accounting (track each fee in and out) in accordance with Utah Code 11-36a-601.

In accordance with Utah Code 11-36a-306, a Certification of Impact Fee Analysis is found in Appendix F.

APPENDIX A – MAPS



NORTH

0 1,750 3,500

Feet

1 in = 3,500 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN

IVINS UTAH

SUNRISE ENGINEERING

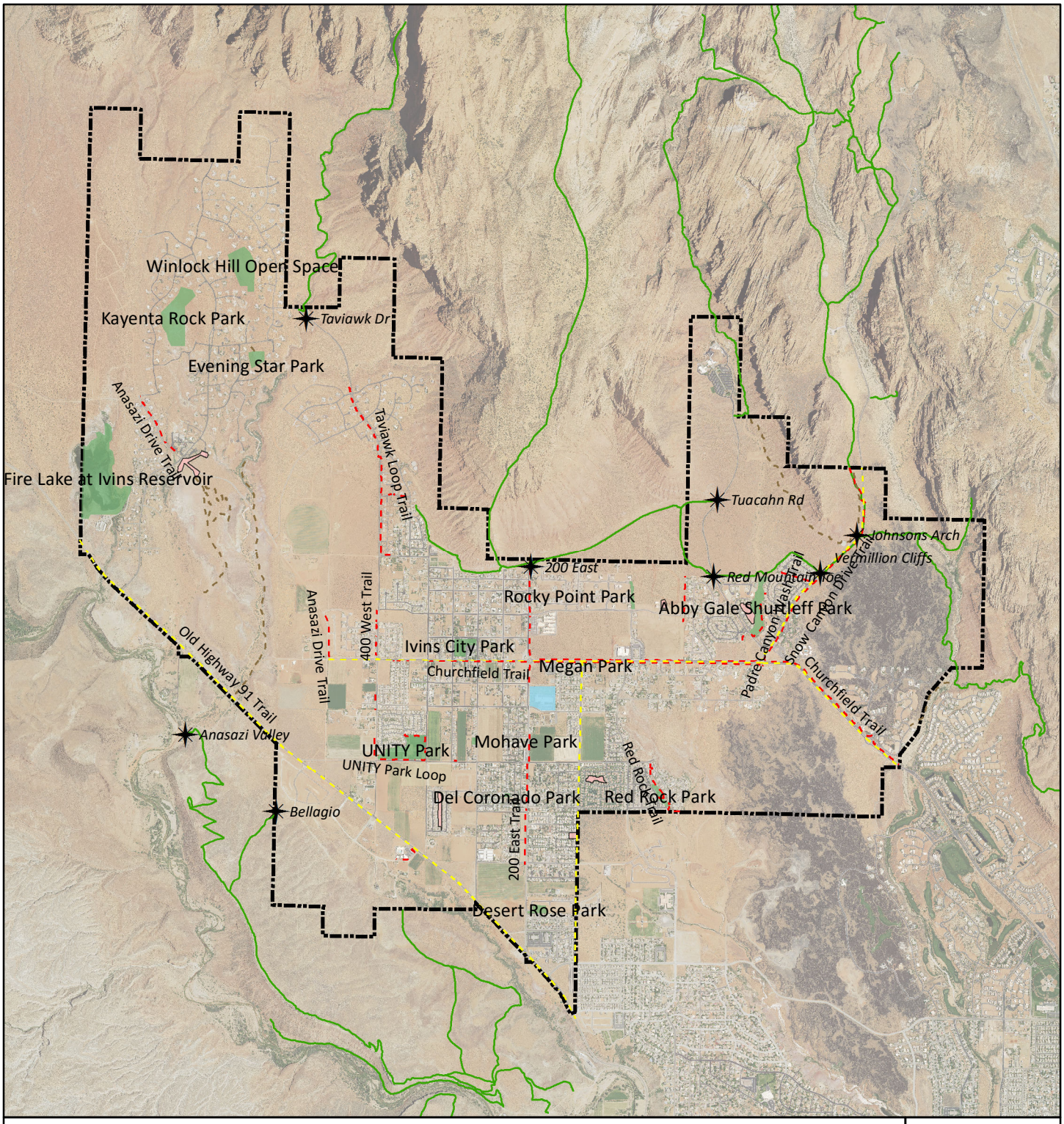
11 NORTH 300 WEST
WASHINGTON, UTAH 84780
TEL 435.652.8450 - FAX 435.652.8416
www.sunrise-eng.com

IVINS CITY

PARKS AND TRAILS MASTER PLAN

LOCATION MAP

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 1**



MAP LEGEND

- School Parks
- Private Parks
- BLM Trails
- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Trailheads
- Ivins City Parks

0 1,875 3,750

Feet

1 in = 3,750 feet

SUNRISE ENGINEERING

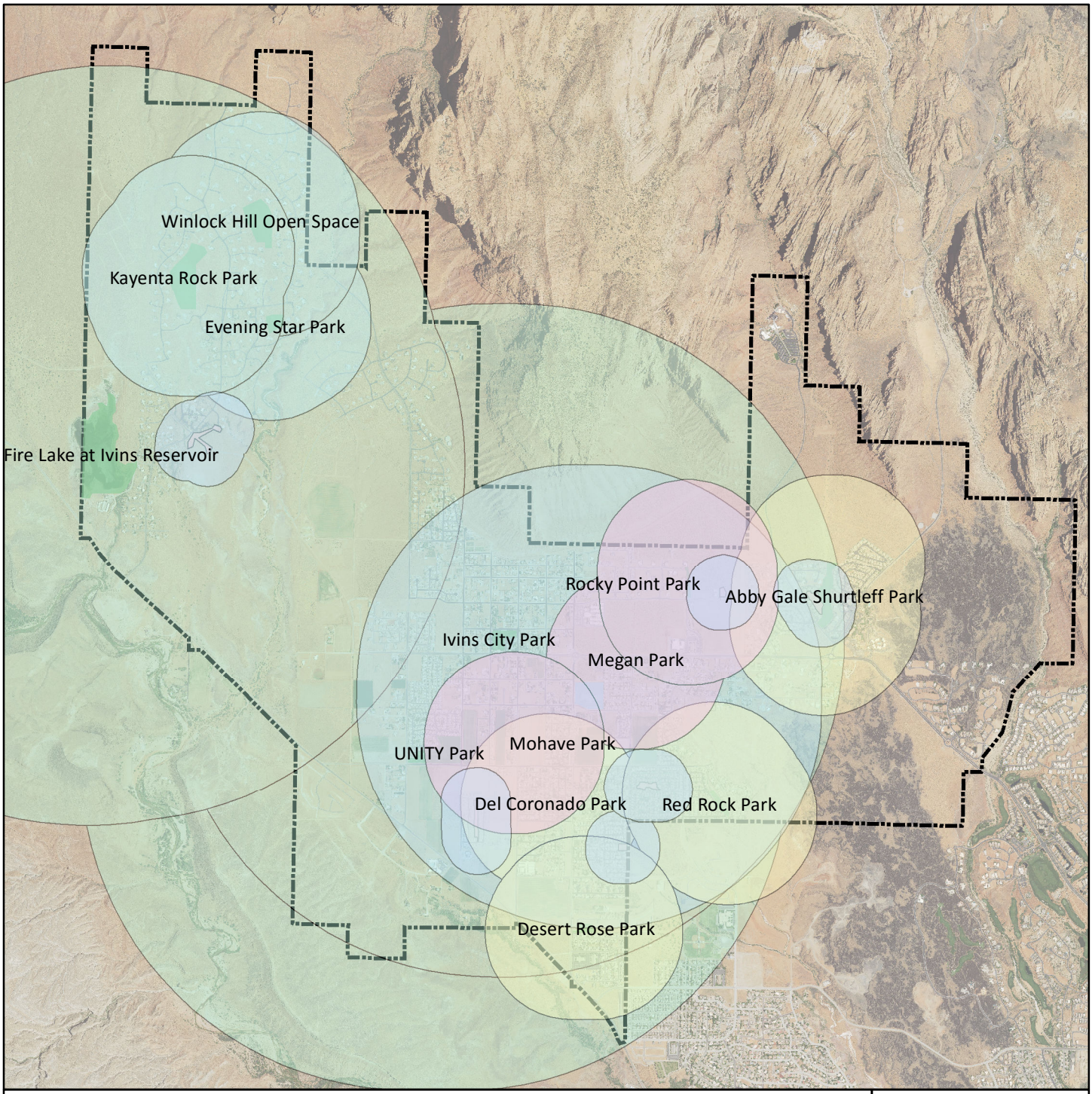
11 NORTH 300 WEST
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IVINS CITY

PARKS AND TRAILS MASTER PLAN

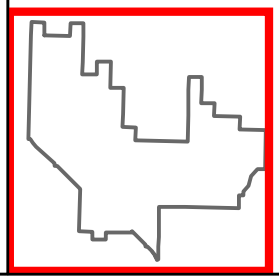
EXISTING FACILITIES

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 2**



MAP LEGEND

- Private Park Service Area (0.15 mi)
- Special Use Park Service Area (varies)
- Natrual Resource Area Service Area (0.4 mi)
- Neighborhood Park Service Area (0.4 mi)
- School Park Service Area (1 mi)
- Community Park Service Area (1.5 mi)
- Ivins City Parks
- School Parks
- Private Parks



NORTH

0 1,750 3,500

Feet

1 in = 3,500 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN
IVINS UTAH

SUNRISE ENGINEERING

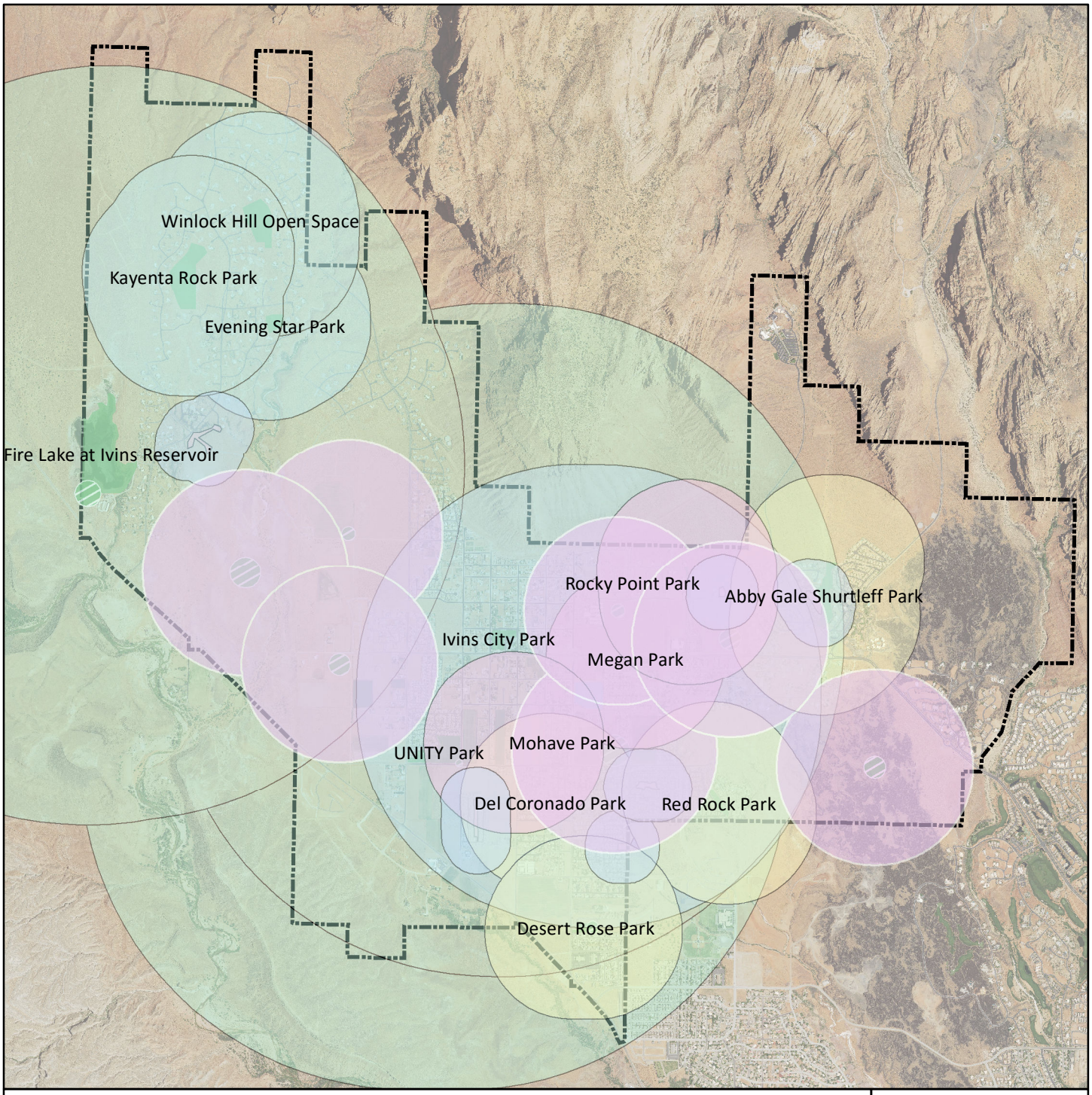
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IVINS CITY

PARKS AND TRAILS MASTER PLAN

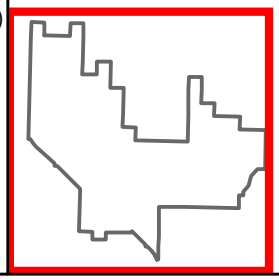
EXISTING THEORETICAL SERVICE AREAS

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 3A**



MAP LEGEND

- Private Park Service Area (0.15 mi)
- Special Use Park Service Area (varies)
- Natrual Resource Area Service Area (0.4 mi)
- Neighborhood Park Service Area (0.4 mi)
- School Park Service Area (1 mi)
- Community Park Service Area (1.5 mi)
- Proposed Neighborhood Park Service Area (0.4 mi)
- Proposed City Parks
- Ivins City Parks
- School Parks
- Private Parks



NORTH

0 1,750 3,500

Feet

1 in = 3,500 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN — IVINS UTAH

SUNRISE ENGINEERING

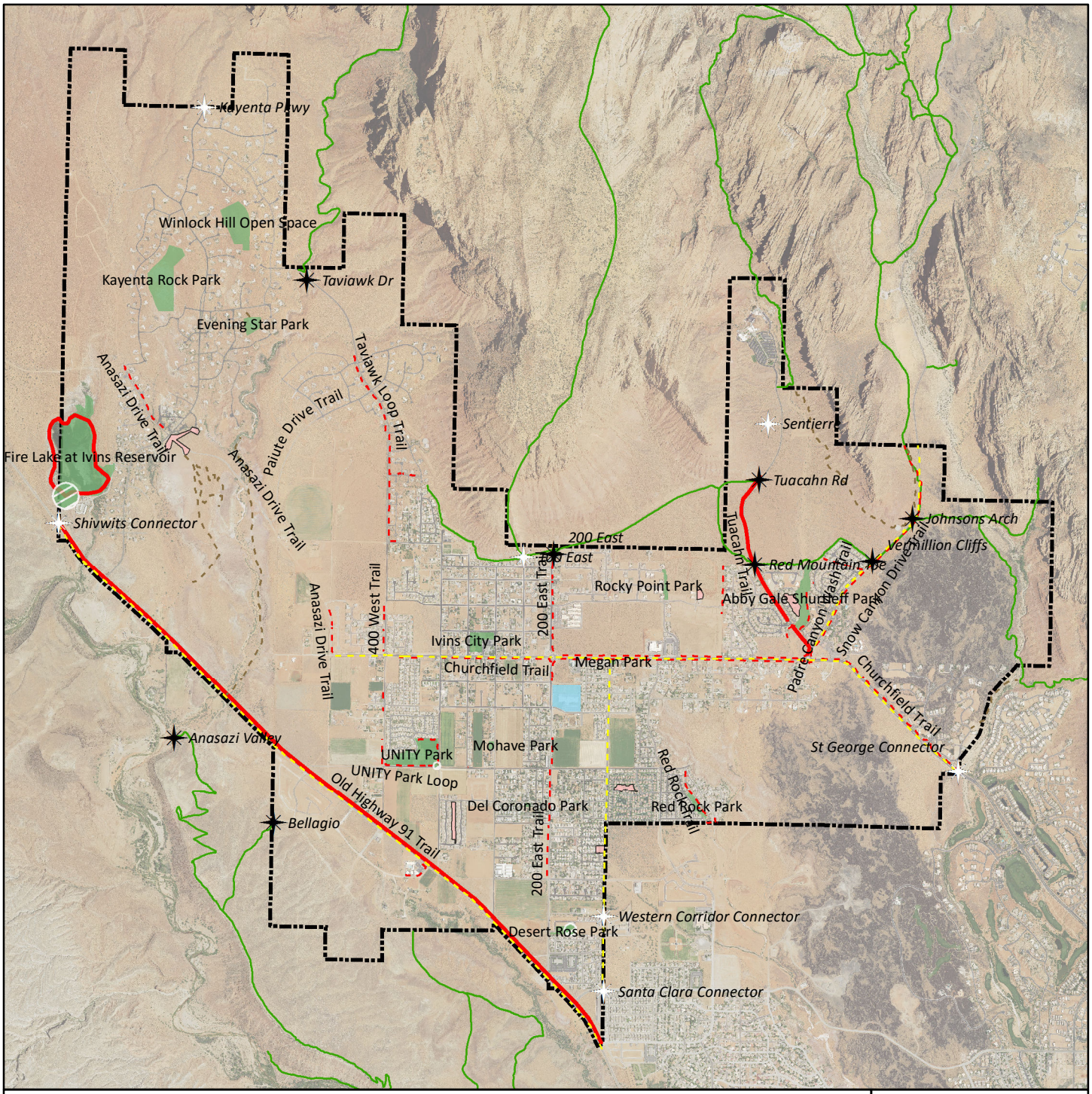
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WASHINGTON, UTAH 84780
TEL 435.652.8450 - FAX 435.652.8416
www.sunrise-eng.com

IVINS CITY

PARKS AND TRAILS MASTER PLAN

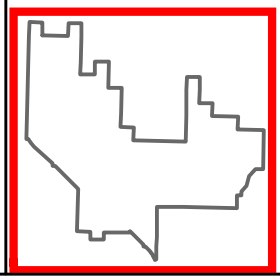
PROPOSED THEORETICAL SERVICE AREAS

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 3B**



MAP LEGEND

- Private Parks
- School Parks
- Ivins City Parks
- Planned City Parks
- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Planned Improved Trail
- Trailheads
- Proposed Trailheads
- BLM Trails



North

0 1,750 3,500

Feet

1 in = 3,500 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN — IVINS UTAH

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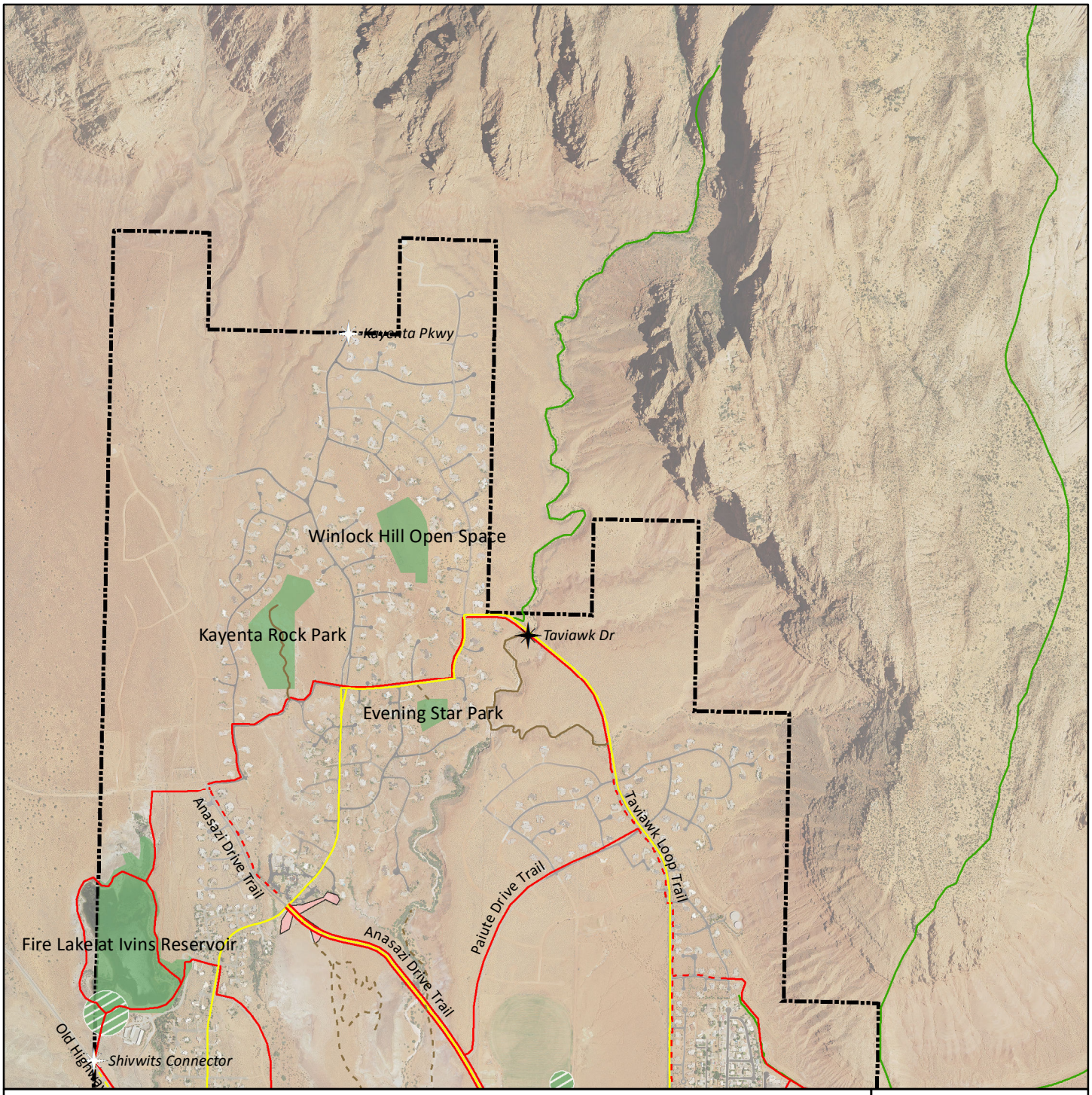
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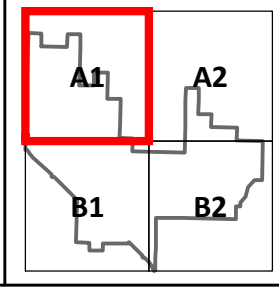
6-YEAR FACILITIES PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 4**



MAP LEGEND

- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Proposed Improved Trail
- Proposed Unimproved Trail
- Proposed Bike Route
- Trailheads
- Proposed Trailheads
- BLM Trails
- Proposed City Parks
- Ivins City Parks
- School Parks
- Private Parks



NORTH

0 1,000 2,000

Feet

1 in = 2,000 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN
IVINS
UTAH

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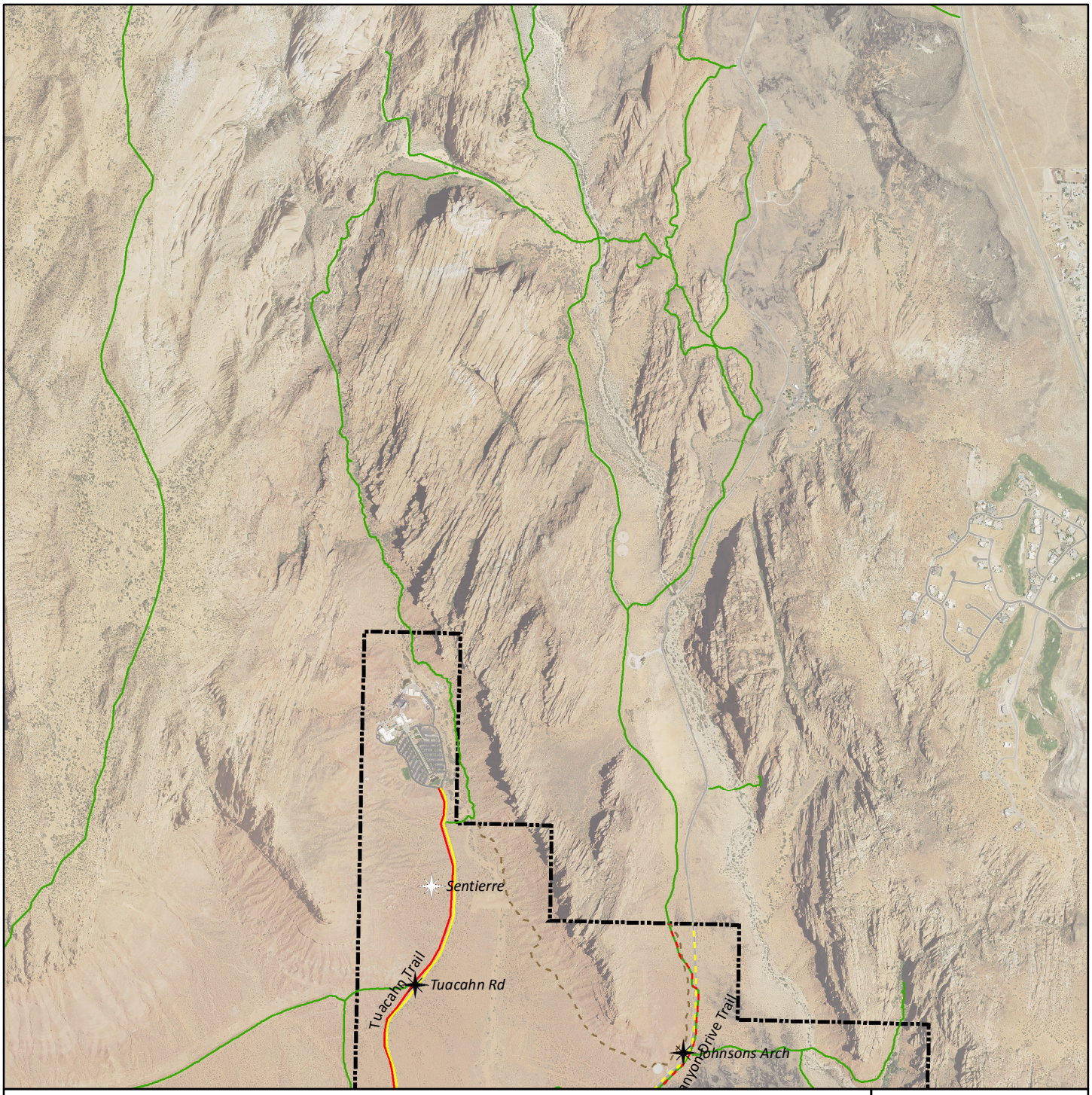
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PARKS AND TRAILS MASTER PLAN

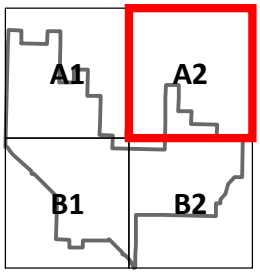
PROPOSED FACILITIES PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 5-A1**



MAP LEGEND

- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Proposed Improved Trail
- Proposed Unimproved Trail
- Proposed Bike Route
- Trailheads
- Proposed Trailheads
- BLM Trails
- Proposed City Parks
- Ivins City Parks
- School Parks
- Private Parks



NORTH

0 1,000 2,000

Feet

1 in = 2,000 feet

OUR HOME BENEATH THE BIG RED MOUNTAIN
IVINS
UTAH

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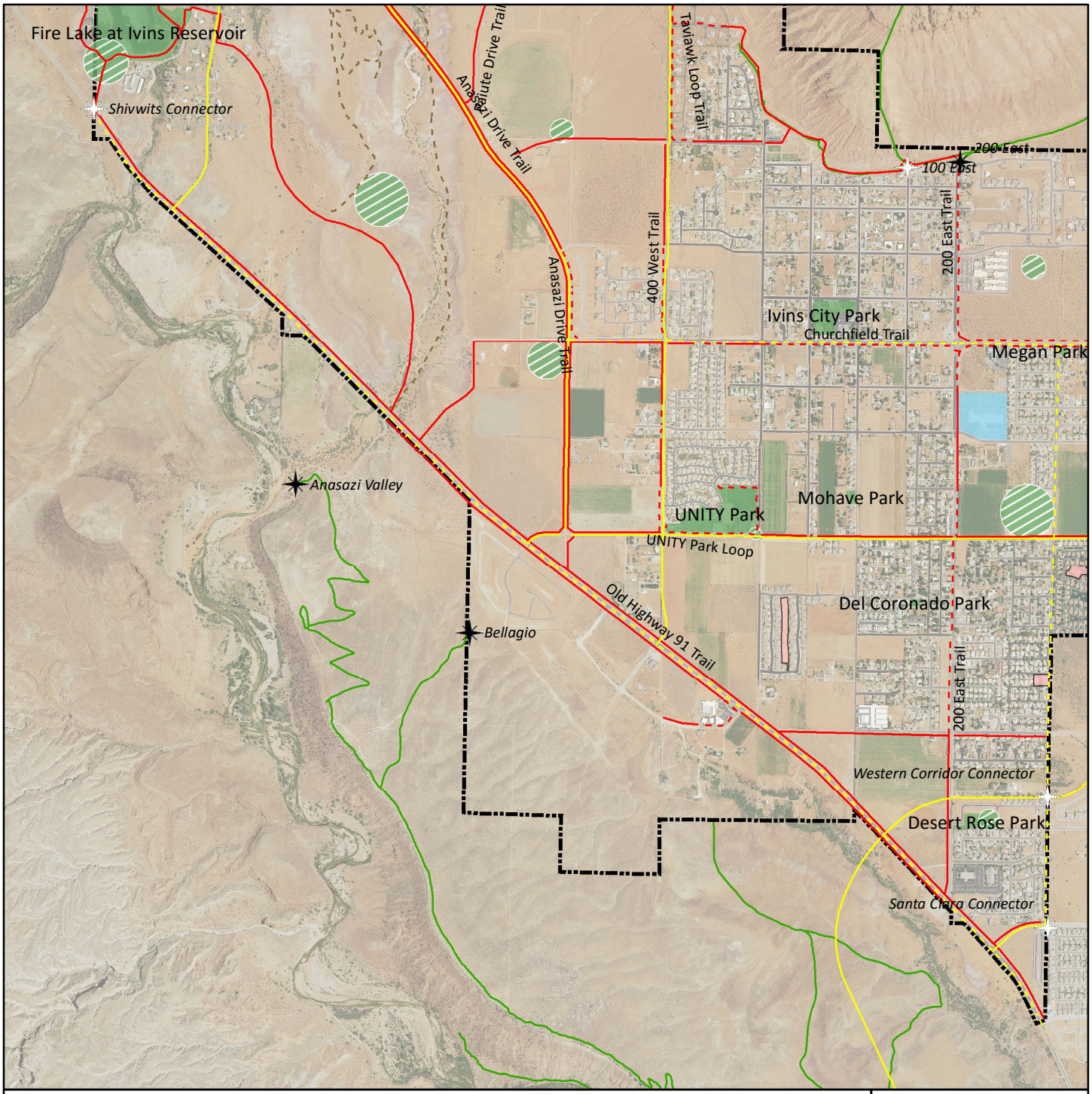
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PARKS AND TRAILS MASTER PLAN

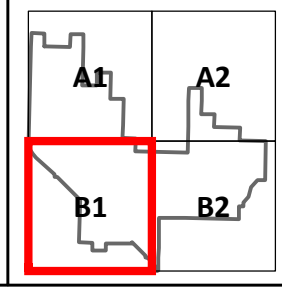
PROPOSED FACILITIES PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 5-A2**



MAP LEGEND

- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Proposed Improved Trail
- Proposed Unimproved Trail
- Proposed Bike Route
- Trailheads
- Proposed Trailheads
- BLM Trails
- Proposed City Parks
- Ivins City Parks
- School Parks
- Private Parks



NORTH

0 1,000 2,000

Feet

1 in = 2,000 feet

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IVINS
UTAH

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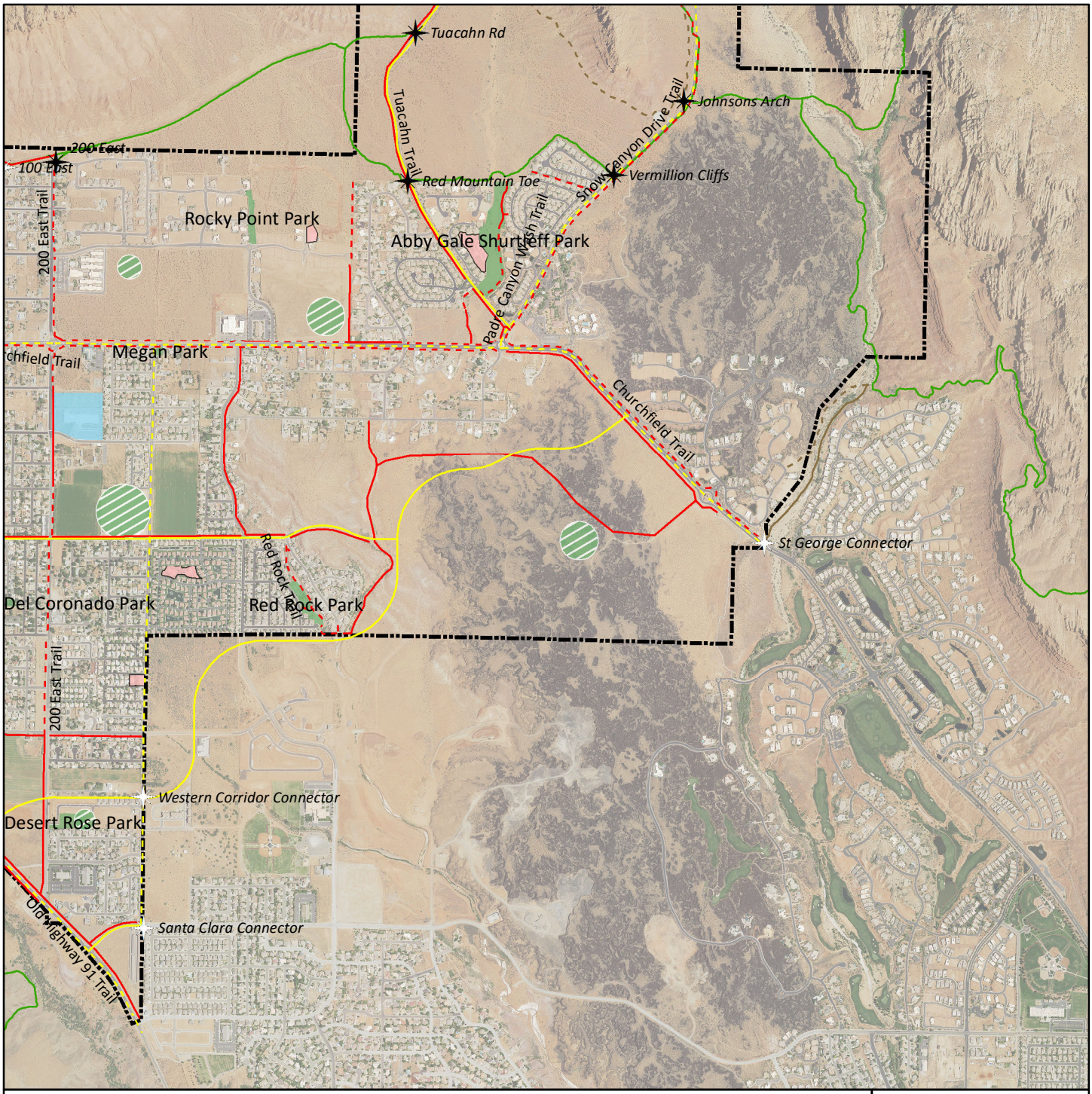
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PARKS AND TRAILS MASTER PLAN

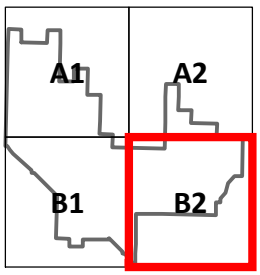
PROPOSED FACILITIES PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	**Map 5-B1**



MAP LEGEND

- Existing Improved Trail
- Existing Unimproved Trail
- Existing Bike Route
- Proposed Improved Trail
- Proposed Unimproved Trail
- Proposed Bike Route
- Trailheads
- Proposed Trailheads
- BLM Trails
- Proposed City Parks
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- School Parks
- Private Parks



NORTH

0 1,000 2,000

Feet

1 in = 2,000 feet

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IVINS CITY

PARKS AND TRAILS MASTER PLAN

PROPOSED FACILITIES PLAN

SEI NO.	DESIGNED	DRAWN	CHECKED	
05515	KCS	KCS	CCH	Map 5-B2

APPENDIX B – POPULATION AND GROWTH PROJECTIONS

Projected Population Data		(from p. 21 of Water MP)					
Year	Population	Population % Growth	Total Housing Units	Total Residences % Growth	Resident Households*	Household Size	Annual Growth rate (for previous decade)
1970	137						
1980	600	338%					15.9%
1990	1630	172%					10.5%
2000	4450	173%	1690		1435	3.1	10.6%
2010	6753	52%	2880	70%	2427	2.78	4.3%
2020	9900	47%	4240	49%	3600	2.75	3.9%
2030	12800	29%	5520	30%	4690	2.73	2.6%
2040	16400	28%	7140	29%	6070	2.7	2.5%
2050†	21000	28%	9150	28%	7780	2.7	2.5%

From:	http://www.census.gov/popest/data/cities/totals/2014/files/SUB-EST2014_49.csv							
NAME	STNAME	NSUS2010POP	ATESBASE2010	ESTIMATE2010	ESTIMATE2011	ESTIMATE2012	OPESTIMATE2013	MATE2014
Ivins city	Utah	6753	6755	6771	6931	7161	7379	7665

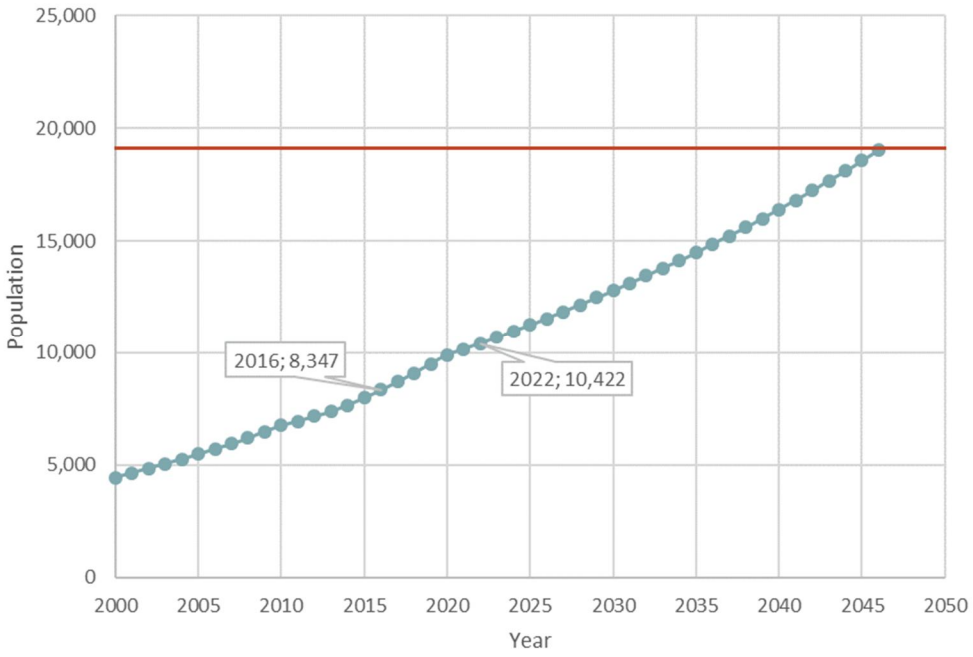
Historical Population							
	1950	1960	1970	1980	1990	2000	2010
State of Utah	688,862	890,627	1,059,273	1,461,037	1,722,850	2,246,553	2,763,885
% Growth		29.3%	18.9%	37.9%	17.9%	30.4%	23.0%
Washington County	9,836	10,271	13,669	26,065	48,560	90,354	138,115
% Growth		4.4%	33.1%	90.7%	86.3%	86.1%	52.9%
Ivins City	95	77	137	600	1,630	4,450	6,753
% Growth		-18.9%	77.9%	338.0%	171.7%	173.0%	51.8%

*Resident households are considered to be 85% of the total housing units accounting for 15% of homes considered to be second homes

†Buildout population of 19,100 will be reached in the year 2046.

Year	Population	Annual Growth rate (for previous decade)
1970	137	0.0%
1980	600	15.9%
1990	1630	10.5%
2000	4450	10.6%
2010	6753	4.3%

Year	Source	Population	Growth
2000	Census	4,450	10.6%
2001	Estimate	4,640	4.3%
2002	Estimate	4,837	4.3%
2003	Estimate	5,043	4.3%
2004	Estimate	5,258	4.3%
2005	Estimate	5,482	4.3%
2006	Estimate	5,715	4.3%
2007	Estimate	5,959	4.3%
2008	Estimate	6,213	4.3%
2009	Estimate	6,477	4.3%
2010	Census	6,753	4.3%
2011	Census Est.	6,931	2.6%
2012	Census Est.	7,161	3.3%
2013	Census Est.	7,379	3.0%
2014	Census Est.	7,665	3.9%
2015	Estimate	7,999	4.4%
2016	Estimate	8,347	4.4%
2017	Estimate	8,711	4.4%
2018	Estimate	9,091	4.4%
2019	Estimate	9,487	4.4%
2020	Estimate	9,900	4.4%
2021	Estimate	10,158	2.6%
2022	Estimate	10,422	2.6%



APPENDIX C – NRPA STANDARDS AND GUIDELINES

PARKS AND OPEN SPACE CLASSIFICATIONS				
Classification	General Description	Location	Size Criteria	Application of LOS
Mini-Park	Used to address limited, isolated or unique recreational needs	Less 1/4 mile distance in residential setting	Between 2500 sq. ft. and one acre in size	No
Neighborhood Park	Neighborhood park remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood. Focus is on informal activity and passive recreation.	1/4 mile to 1/2 mile distance and uninterrupted by non-residential roads and other physical barriers	5 acres is considered minimum size. 5 to 10 acres is optimal	Yes
School Park	Depending on circumstances, combining parks with school sites can fulfill the space requirements for other classes of parks, such as neighborhood, community, sports complex, and special use.	Determined by location of school district property	Variable depends on function	No
Community Park	Serves broader purpose than neighborhood park. Focus is on meeting community-based recreation needs, as well as preserving unique landscapes and open spaces.	Determined by the quality and suitability of the site. Usually serves two or more neighborhoods within a 1/2 to 3 mile distance	As needed to accommodate desired uses. Usually between 30 and 50 acres	Yes
Large Urban Park	Large urban parks serve a broader purpose than community parks and are used when community and neighborhood parks are not adequate to serve the needs of the community. Focus is on meeting community-based recreational needs as well as preserving unique landscapes and open spaces.	Determined by the quality and suitability of the site. Usually serves the entire community.	As needed to accommodate desired uses. Usually a minimum of 50 acres with 75 or more acres being optimal	No
Natural Resource Areas	Lands set aside for preservation of significant natural resources, remnant landscapes, open space and visual aesthetics or buffering.	Resource availability and Opportunity	Variable	No
Greenways	Effectively tie the park system components together to form a continuous park environment.	Resource availability and Opportunity	Variable	No
Sports Complex	Consolidates heavily programmed athletic fields and associated facilities to larger and fewer sites strategically located throughout the community.	Strategically located Community-wide facilities	Determined by projected demand usually a minimum of 25 acres with 40 to 80 acres being optimal	No
Special Use	Covers a broad range of parks and recreation facilities oriented toward single-purpose use.	Variable – dependent on specific use	Variable	Depends on type of use
Private Park/Recreation Facility	Parks and recreational facilities that are privately owned yet contribute to the public park and recreation system.	Variable – dependent on specific use	Variable	Yes

PATHWAY CLASSIFICATIONS		
Classification	General Description	Description of Each Type
Park Trail - Type I	Multi-purpose trails located within greenways, parks and natural resource areas. Focus is on recreational value and harmony with the natural environment.	Separate/single-purpose hard-surfaced trails for pedestrians or bicyclists/in-line skates.
Park Trail - Type II		Multipurpose hard-surfaced trails for pedestrians and bicyclists/in-line skaters.
Park Trail - Type III		Nature trails for pedestrians, which may use either hard or soft surfaces.
Connector Trails - Type I	Multipurpose trails that emphasize safe travel for pedestrians to and from parks and around the community. Focus is as much on transportation as it is on recreation.	Separate/single-purpose hard-surfaced trails for pedestrians or bicyclists/in-line skates located in independent rights-of-ways (ROWs) e.g., old railroad ROW.
Connector Trails - Type II		Separate/single-purpose hard-surfaced trails for pedestrians or bicyclists/in-line skates. Typically, located within road ROW.
On-Street Bikeways - Bike Route	Paved segments of roadways that serve as a means to safely separate bicyclists from vehicular traffic.	Designated portions of the roadway for the preferential or exclusive use of bicyclists.
On-Street Bikeways - Bike Lane		Shared portions of the roadway that provide separation between motor vehicles and bicyclists, such as paved shoulders.
All-Terrain Bike Trail	Off-road trail for all terrain (mountain) bikes.	Single-purpose loop trails usually located in larger parks and natural resource areas.
Cross-Country Ski Trail	Trails developed for traditional and skate-style cross-country skiing.	Loop trails usually located in larger parks and natural resource areas.
Equestrian Trails	Trails developed for horseback riding.	Loop trails usually located in larger parks and natural resource areas. Sometimes developed as multipurpose with hiking and all-terrain biking where conflicts can be controlled.

Suggested Outdoor Facility Development Standards				
Activity Format	**Recommended Size and Dimensions**	**Recommended Space Requirements**	**Recommended Orientation**	**Service Radius and Location Notes**
Badminton	Singles—17' x 44' Doubles—20' x44' with 5' unobstructed area on both sides.	1622 sq. ft.	Long axis north - south	1/4 - 1/2 mile. Usually in school recreation center or church facility. Safe walking or biking or biking access.
Basketball **1. Youth** **2. High school** **3. Collegiate**	 46' - 50' x 84' 50' x 84' 50' x 94' with 5' unobstructed space all sides.	 2400-3036 sq. ft. 5040-7280 sq. ft. 5600-7980 sq. ft.	 Long axis north - south	1/4 - 1/2 mile. Same as badminton. Outdoor courts in neighborhood/community parks, plus active recreation areas in other park settings.
Handball (3-4 wall)	20' x 40' with a minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance.	800 sq. ft. for 4-wall, 1000 sq. ft. for 3-wall.	Long axis is north - south. Front wall at north end.	15 - 30 min. travel time, 4-wall usually indoor as part of multi-purpose building. 3-2 all usually in park or school setting.
Ice hockey	Rink 85' x 200' (Min. 85' x 185') Additional 5000 22,000 sq. ft. including support area.	22,000 sq. ft. including support area.	Long axis is north - south if outdoors.	1/2 - 1 hour travel time. Climate important consideration affecting no. of units. Best as part of multi-purpose facility.
Tennis	36' x 78'. 12 ft. clearance on both ends.	Min. of 7,200 sq. ft. single court area (2 acres per complex).	Long axis north - south.	1/4 - 1/2 mile. best in batteries of 2 - 4. Located in neighborhood/ community park or near school site.
Volleyball	30' x 60'. Minimum of 6' clearance on all sides.	Minimum 4,000 sq. ft.	Long axis north - south.	1/2 - 1 mile.
Baseball **1. Official** **2. Little League**	 Baselines - 90' Pitching dist.- 60.5' Foul lines - min. 320' Center field - 400'+ Baselines - 60' Pitching distance-46' Foul lines - 200' Center field - 200'-250'	 3.0 -3.85 A min. 1.2 A min.	 Locate home plate so pitcher is not throwing across sun, and batter not facing it. Line from home plate through pitchers mound to run east-northeast.	1/4-1/2 mile. Part of neighborhood complex. Lighted fields part of community complex.
Field Hockey	180' x 300' with a minimum of 10' clearance on all sides	Minimun 1.5 A	Fall season - Long axis northwest or southeast. For longer periods, north/south	15-30 minute travel time. Usually part of baseball, football, soccer complex in community park or adjacent to high school.
Football	160' x 360' with a minimum of 6' clearance on all sides.	Minimum 1.5 A	Same as field hockey.	15 - 30 min. travel time. Same is field hockey.
Soccer	195' to 225' x 330' to 360' with 10' minimum clearance on all sides.	1.7 - 2.1 A.	Same as field hockey.	1 - 2 miles. Number of units depends on popularity. Youth popularity. Youth soccer on smaller fields adjacent to fields or neighborhood parks.

Golf - driving range	900' x 690' wide. Add 12' width each additional tee.	13.5 A for min. of 25 tees.	Long axis is southwest -northeast with golfer driving northeast.	30 minute travel time. Park of golf course complex. As separate unit may be privately operated.
1/4 mile running track	Over-all width - 276' length -600'. Track width for 8 - 4 lanes is 32'.	4.3 A	Long axis in sector from north to south to northwest - southeast, with finish line at north end.	15-30 minute travel time. Usually part of a high school or community park complex in combination with football, soccer, etc.
Softball	Baselines - 60' pitching dist. - 45' men. 40' women Fast pitch field radius from plate - 225' Slow pitch - 275' (men) 250' (women).	1.5 - 2.0 A	Same as baseball. indimensions for 16".	1/4 - 1/2 mile. Slight difference May also be used for youth baseball.
Multiple use court (basketball, tennis, etc.)	120' x 80'	9,840 sq. ft.	Long axis of court with primary use north and south.	1 - 2 miles, in neighborhood or community parks.
Archery range	300' length x minimum 10' between targets. Roped, clear area on side of range minimum 30', clear space behind targets minimum of 90' x 45' with bunker.	Minimum 0.65 A	Archer facing north + or - 45 degrees.	30 minutes travel time. Part of a regional/metro complex.
Golf				
1. Par 3 (18 hole)	Average length varies -600 - 2700 yards.	50 - 60 A	Majority of holes on north/south axis	1/2 - 1 hour travel time
2. 9-hole standard	Average length 2250 yards.	Minimum of 50 A		9-hole course can accomodate 350 people/day.
3. 18-hole standard	Average length 6500 yards.	Minimum 110 yds		500 - 550 people/day. Course may be located in community, district or regional/metro park.
Swimming pools	Teaching - min. 25 yds x 45' even depth of 3-4 ft. Competitive - min. 25 m x 16 m. Min. of 25 sq. ft. water surface per swimmer. Ration of 2 to 1 deck to water.	Varies on size of pool and amenities. Usually 1 - 2 A sites.	None, but care must be taken in siting life stations in relation to afternoon sun	15 to 30 minute travel time. Pools for general community use should planned for teaching competitive and recreational purposes with enough to accomodate 1m and 3m diving boards. Located in community park or school site.
Beach areas	Beach area should have 50 sq. ft. of land and 50 sa. ft. of water per user. Turnover rate is 3. There should be a 3 -4 A supporting area per A of beach.	N/A	N/A	1/2 to 1 hour travel time. Should have a sand bottom with a maximum slope of 5%. Boating areas completely segregated from swimming areas. In regional/metro parks.

PARK NAME	CLASSIFICATION	SERVICE AREA *[radii]*
Abby Gale Shurtleff Park	Neighborhood Park	0.4 miles
Del Coronado Park	Neighborhood Park	0.4 miles
Desert Rose Park	Neighborhood Park	0.4 miles
Evening Star Park	Natural Resource Areas	0.4 miles
Fire Lake at Ivins Reservoir	Community Park	1.5 miles
Ivins City Park	Community Park	1.5 miles
Kayenta Rock Park	Natural Resource Areas	0.4 miles
Megan Park	Special Use	0.5 miles
Mohave Estates Park	Special Use	0.15 miles
Red Rock Park	Neighborhood Park	0.4 miles
Rocky Point Park	Special Use	0.4 miles
UNITY Park	Community Park	1.5 miles
Winlock Hill Open Space	Natural Resource Areas	0.4 miles

	Ivins City Park Invintory	Address or Width of trail	Pavilion	Picnic table	Soccer/Football field	Baseball/Softball field	Basketball Court	Tennis Court	Pickleball Court	Sand Volleyball Court	Horseshoe Pit	Playgound	Drinking Fountains	Restrooms	Parking Areas	Information Kiosk	Benches	Bike Rack	Notes
City Parks	Abby Gale Shurtleff Park	100 North Tuacahn Drive																	Trail
	City Park	Main St. and 100 N.	2	2		1*				1	1	1	3	1	3		2	1	Swings, 4 BBQ, 1 Burn pit
	Del Coronado Park	500 South and 100 East					0.5					1							Mini playground, (Swings/Wire ball), BBQ
	Megan Park	Center Street and 400 East															1	1	Fitness Park
	Mohave Park	Main St. and 300 S.										1					2		Parking On Street
	Red Rock Park	600 South and 700 East		2			0.5			1		1			2		1		Putting in new irrigation system/Maybe pavilion or shade shelter
	Rocky Point Park	200 N Park Avenue Way															6		Limited Parking (5 cars)
	Unity City Park	200 West and 400 South	1	2	2*	2*	2	2*				1	4	2	2		5	2	Splash pad
	~~Evening Star Park~~																		
	~~Ivins Reservoir Park~~																		
	~~Kayenta Rock Park~~																		
	~~Winlock Hill Open Space~~																		
Trailheads	Johnsons Arch																		
	200 East																		
	Taviawk Dr																		
	Anazazi Valley																		
	Tuacahn Rd																		
	Vermillion Cliffs																		
	Bellagio	Indigo Trails																	
	Red Mountain Toe																		
Trails	200 East Trail																		
	400 South Trail																		
	400 West Trail																		
	800 South Trail																		
	Anasazi Drive Trail																		
	Churchfield Trail																		
	Padre Canyon Wash Trail																		
	Red Rock Trail																		
	Snow Canyon Drive Trail																		
Trails	South 400 East Trail																		
	Taviawk Loop Trail																		
	Toe Trail																		
	Toe Trail Spur																		
	Unity Park Loop																		
	Whiptail																		
	*Designate if fields have lights																		
	**Basketball courts can be counted as 0.5																		

APPENDIX D – UNIT COST CALCULATIONS

PARKS								
Owner	Name	Year	Project Type	Project Costs			Total Acreage	Cost / Acre
				Construction	Incidentals	Total		
St. George City	Little Valley Phase V - Sports Fields	2016	New Facility	$ 2,108,000.00	$ 369,500.00	$ 2,477,500.00	9.1	$ 272,181.34
St. George City	Bloomington Park Baseball Field 2	2016	New Facility	$ 429,000.00	$ 75,200.00	$ 504,200.00	3.9	$ 128,643.69
Washington City	Sullivan Virgin River Phase II	2015	New Facility	$ 4,245,600.00	$ 744,300.00	$ 4,989,900.00	26.2	$ 190,454.20
St. George City	Little Valley Pickleball Phase II	2015	New Facility	$ 962,200.00	$ 168,700.00	$ 1,130,900.00	2.9	$ 389,965.52
White Pine County	Camp Success	2015	Upgrade	$ 1,204,000.00	$ 441,000.00	$ 1,645,000.00	5.0	$ 329,000.00
Lincoln County	Echo Canyon RV Campground	2014	New Facility	$ 1,747,100.00	$ 433,152.07	$ 2,180,252.07	10.0	$ 217,677.90
Lincoln County	Pioneer Park Phase I & II	2011, 2014	Upgrade	$ 749,700.00	$ 157,700.00	$ 907,400.00	3.2	$ 283,562.50
St. George City	Royal Oaks Park	2014	New Facility	$ 412,000.00	$ 72,200.00	$ 484,200.00	1.0	$ 484,200.00
St. George City	Silkwood Park	2014	New Facility	$ 385,300.00	$ 67,500.00	$ 452,800.00	1.5	$ 301,866.67
St. George City	Sunset Park	2014	Upgrade	$ 560,900.00	$ 98,300.00	$ 659,200.00	2.4	$ 274,666.67
White Pine County	Preston Park	2013	New Facility	$ 155,400.00	$ 36,500.00	$ 191,900.00	0.7	$ 274,142.86
White Pine County	North Ely Park	2013	New Facility	$ 162,400.00	$ 44,100.00	$ 206,500.00	1.0	$ 206,500.00
White Pine County	Bianchi Park	2013	Upgrade	$ 153,600.00	$ 22,100.00	$ 175,700.00	0.6	$ 292,833.33
White Pine County	McGill Park	2013	Upgrade	$ 255,100.00	$ 36,800.00	$ 291,900.00	1.3	$ 224,538.46
White Pine County	Steptoe Park	2013	Upgrade	$ 103,200.00	$ 14,900.00	$ 118,100.00	0.4	$ 295,250.00
White Pine County	Courthouse Park	2013	Upgrade	$ 229,500.00	$ 48,100.00	$ 277,600.00	1.3	$ 213,538.46
St. George City	Little Valley Pickleball	2012	New Facility	$ 813,800.00	$ 90,500.00	$ 904,300.00	2.5	$ 361,720.00
Lincoln County	Pioche Park Phase II	2012	Upgrade	$ 758,000.00	$ 167,500.00	$ 925,500.00	2.7	$ 342,777.78
Washington City	Sullivan Virgin River Phase I	2011	New Facility	$ 1,497,200.00	$ 262,500.00	$ 1,759,700.00	10.6	$ 166,009.43
Lincoln County	Rachel Park	2011	Upgrade	$ 239,600.00	$ 52,600.00	$ 292,200.00	1.5	$ 194,800.00
City of Caliente	Dixon Park	2008	New Facility	$ 2,180,900.00	$ 287,000.00	$ 2,467,900.00	5.3	$ 465,641.51
City of Caliente	Super Park	2008	New Facility	$ 784,900.00	$ 181,000.00	$ 965,900.00	3.0	$ 321,966.67
City of Caliente	Rose Park	2008	Upgrade	$ 394,900.00	$ 85,000.00	$ 479,900.00	1.3	$ 369,153.85
Washington City	Green Springs Park	2007	New Facility	$ 834,300.00	$ 146,300.00	$ 980,600.00	8.6	$ 114,023.26
			Subtotal	$ 21,366,600.00	$ 4,102,452.07	$ 25,469,052.07	93.0	$ 273,813.80
			Cost / Acre	$ 229,708.98	$ 44,104.82	$ 273,813.80		
			Average Construction Year	2012				
		Cost / Acre Including Inflation (2016 Costs)	3.0%	$ 258,539.48	$ 49,640.36	$ 308,179.84		

TRAILS							
Owner	Name	Year	Project Costs			Total Miles	Cost / Mile	Cost / SF
			Construction	Incidentals	Total			
Washington City	Three Rivers Trail Connection	2014	$ 1,200,000.00	$ 210,365.28	$ 1,410,365.28	2.32	$ 607,916.07	$ 11.51
Washington City	Three Rivers Trail Reconstruction	2011	$ 220,800.00	$ 38,707.21	$ 259,507.21	0.38	$ 685,099.04	$ 12.98
Washington City	Mill Creek Trail	2011	$ 38,560.00	$ 6,759.74	$ 45,319.74	0.10	$ 453,197.38	$ 8.58
Washington City	Virgin River Trail	2010	$ 101,200.00	$ 17,740.81	$ 118,940.81	0.50	$ 237,881.61	$ 4.51
St. George City	Virgin River Trail, South C	2013	$ 121,500.00	$ 21,299.48	$ 142,799.48	0.50	$ 285,598.97	$ 5.41
		Subtotal	$ 1,682,060.00	$ 294,872.52	$ 1,976,932.52	3.80	$ 520,411.40	$ 8.60
		Cost / Mile	$ 442,788.61	$ 77,622.79	$ 520,411.40			
		Average Construction Year	2012					
	Cost / Mile Including Inflation (2016 Costs)	3.0%	$ 498,362.48	$ 87,365.13	$ 585,727.61			

APPENDIX E – CASH FLOW SPREADSHEET

Cashflow Analysis - Ivins City Parks & Trails Impact Fee Analysis									
Year	Year	2016	2017	2018	2019	2020	2021	2022
Revenues								
Total Households		3792	3957	4129	4309	4497	4614	4734
New Households			165	172	180	188	117	120
Impact Fees Collected			$ 594,096	$ 618,193	$ 646,947	$ 675,700	$ 420,515	$ 431,298
Expenses								
UNITY Park Debt Service			$ 143,420	$ 143,660	$ 143,810	$ 143,870	$ 143,840	$ 143,720
UNITY Park Additions	2022							$ 226,300
Desert Rose Park	2017-2019		$ 182,200	$ 187,600	$ 193,300			
Fire Lake at Ivins Reservoir	2018-2022			$ 421,500	$ 434,200	$ 447,200	$ 460,600	$ 474,400
Tuacahn Trail	2017		$ 531,200					
Old Highway 91 Trail	2020					$ 1,999,200		
IFFP/IFA	2021						$ 40,600	
Expenses Paid From								
Impact Fees			$ 856,820	$ 406,805	$ 414,931	$ 1,212,453	$ 266,993	$ 228,746
Other Revenues Needed to Build All Improvements Shown			$ -	$ 345,955	$ 356,379	$ 1,377,817	$ 378,047	$ 615,674
Difference (Expenses - Impact Fees Collected)			$ (262,724)	$ 211,388	$ 232,015	$ (536,753)	$ 153,522	$ 202,551
Impact Fee Fund Calculations								
Impact Fee Fund (w/o Existing Balance)			$ (262,724)	$ (51,335)	$ 180,680	$ (356,073)	$ (202,551)	$ -
Impact Fee Fund w/ Existing Balance		$ 868,304	$ 605,580	$ 816,968	$ 1,048,983	$ 512,230	$ 665,752	$ 868,304

Parks & Rec. Historical GF Expenditures			
Year	*Parks*	*Recreation*	*Total*
2015	$366,352	$206,058	$572,410
2014	$232,065	$200,230	$432,295
2013	$260,629	$191,899	$452,528
2012	$225,671	$186,960	$412,631
2011	$220,384	$193,674	$414,058
2010	$408,661		$408,661

UNITY Park Debt Service Schedule

Interest Rate: 3.0%
Paid to Date: $1,435,440
IF Period: $ 862,320
Remaining after IF Period: $1,291,090

Date	Pincipal	Interest	Total P+I	Principal Rem.
4/1/2006	$ -	$ -	$ -	$ 2,500,000
4/1/2007	$ 69,000	$ 75,000	$ 144,000	$ 2,431,000
4/1/2008	$ 71,000	$ 72,930	$ 143,930	$ 2,360,000
4/1/2009	$ 73,000	$ 70,800	$ 143,800	$ 2,287,000
4/1/2010	$ 75,000	$ 68,610	$ 143,610	$ 2,212,000
4/1/2011	$ 77,000	$ 66,360	$ 143,360	$ 2,135,000
4/1/2012	$ 79,000	$ 64,050	$ 143,050	$ 2,056,000
4/1/2013	$ 82,000	$ 61,680	$ 143,680	$ 1,974,000
4/1/2014	$ 84,000	$ 59,220	$ 143,220	$ 1,890,000
4/1/2015	$ 87,000	$ 56,700	$ 143,700	$ 1,803,000
4/1/2016	$ 89,000	$ 54,090	$ 143,090	$ 1,714,000
4/1/2017	$ 92,000	$ 51,420	$ 143,420	$ 1,622,000
4/1/2018	$ 95,000	$ 48,660	$ 143,660	$ 1,527,000
4/1/2019	$ 98,000	$ 45,810	$ 143,810	$ 1,429,000
4/1/2020	$ 101,000	$ 42,870	$ 143,870	$ 1,328,000
4/1/2021	$ 104,000	$ 39,840	$ 143,840	$ 1,224,000
4/1/2022	$ 107,000	$ 36,720	$ 143,720	$ 1,117,000
4/1/2023	$ 110,000	$ 33,510	$ 143,510	$ 1,007,000
4/1/2024	$ 113,000	$ 30,210	$ 143,210	$ 894,000
4/1/2025	$ 117,000	$ 26,820	$ 143,820	$ 777,000
4/1/2026	$ 120,000	$ 23,310	$ 143,310	$ 657,000
4/1/2027	$ 124,000	$ 19,710	$ 143,710	$ 533,000
4/1/2028	$ 128,000	$ 15,990	$ 143,990	$ 405,000
4/1/2029	$ 131,000	$ 12,150	$ 143,150	$ 274,000
4/1/2030	$ 135,000	$ 8,220	$ 143,220	$ 139,000
4/1/2031	$ 139,000	$ 4,170	$ 143,170	$ -

APPENDIX F – IMPACT FEE CERTIFICATION

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306 Cody C. Howick, P.E., on behalf of Sunrise Engineering, Inc., make the following certification:

I certify that the attached impact fee facilities plan and impact fee analysis:

1. Includes only the costs for qualifying public facilities that are:
    a. Allowed under the Impact Fees Act; and
    b. Actually incurred; or
    c. Projected to be incurred or encumbered within six years after each impact fee is paid;
2. Does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and that methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. Offsets costs with grants or other alternate sources of payment (if grants or other sources of payment have been applied for and received and such information was made available when the Impact Fee Analysis was prepared); and
4. Complies in each and every relevant respect with the Impact Fees Act.

Cody C. Howick, P.E. makes this certification with the following qualifications:

1. All of the recommendations for implementations of the Impact Fee Facilities Plan ("IFFP") made in the IFFP documents or in the Impact Fee Analysis documents are followed in their entirety by Ivins City, Utah staff and elected officials.

2. If all or a portion of the IFFP's or Impact Fee Analyses are modified or amended, this certification is no longer valid.

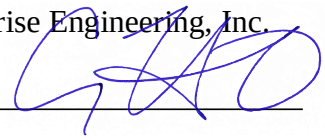
3. All information provided to Sunrise Engineering, Inc., its contractors or suppliers is assumed to be correct, complete and accurate. This includes information provided by Ivins City, Utah, and outside sources.

4. The undersigned is trained and licensed as a professional engineer and has not been trained or licensed as a lawyer. Nothing in the foregoing certification shall be deemed an opinion of law or an opinion of compliance with law which under applicable professional licensing laws or regulations or other laws or regulations must be rendered by a lawyer licensed in the State of Utah.

5. The foregoing Certification is an expression of professional opinion based on the undersigned's best knowledge, information and belief and shall not be construed as a warranty or guaranty of any fact or circumstance.

6. The foregoing certification is made only to Ivins City, Utah and may not be used or relied upon by any other person or entity without the expressed written authorization of the undersigned.

Sunrise Engineering, Inc.

By: 

Dated: 7/7/16

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