

**EAGLE MOUNTAIN CITY**  
**MASTER DEVELOPMENT AGREEMENT**  
**FOR THE**  
**OQUIRRH MOUNTAIN DEVELOPMENT**

This Master Development Agreement for the Oquirrh Mountain Development (this "Agreement") is entered into between Eagle Mountain City, a municipal corporation of the State of Utah (the "City") and Oquirrh Mountain West, LLC, a Utah limited liability company ("Developer").

This Agreement is made with reference to the following facts.

A. Developer has submitted to the City an application for a new development known as Oquirrh Mountain (the "Project").

B. The Project consists of approximately 120.4 acres of land (the "Property") located west of Pony Express Parkway, south of the existing Lone Tree Subdivision, and north of the proposed SITLA Master Development. A legal description of the Property is attached as Exhibit "A."

C. The Project will be zoned as residential in accordance with Chapter 17.25 of the Municipal Code of Eagle Mountain City and improved in compliance with procedures and standards in the Development Code and the terms of this Master Development Agreement.

D. Developer has received approval of the Land Use Element and Concept Plan for the Project from the Planning Commission and City Council of Eagle Mountain City. The approved land use map, which depicts the zoning for the Project and land uses which will be allowed by the City, is attached as Exhibit "B" (the "Land Use Map").

E. The parties wish to define the rights and responsibilities of the parties with respect to the development of the land and funding of improvements in the Master Development Plan area which is approved by the City in this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and promises of the parties contained herein, the parties agree as follows:

1 Governing Standards. The Project shall be governed by the procedures, standards and requirements of the Development Code of the City.

2 Zoning, Density and Land Use Standards. The Project will be zoned as residential in accordance with Chapter 17.25 of the Municipal Code. The residential zone must be a predominately residential use, but certain commercial and mixed-use developments are allowed as a conditional use within the Project. The Land Use Map is the zoning map for the Property.

2.1 Planning Areas and Densities. The total Project densities are as follows:

Total Land Area: 120.4 acres  
 Total Buildable Acres: 104.2 acres  
 Total Residential Units: 417 units  
 Improved Open Space: Not less than 15.5 acres

The overall density of the Project may not exceed the lesser of an average of 6.3 residential units per buildable acre or a total of 417 residential units (the “Maximum Density”). In addition, the Property is divided into twelve planning areas (the “Planning Areas”) which permit a certain number of units per acre within each Planning Area. The location of each of the Planning Areas is depicted on Exhibit “B.” The development of each Planning area must contain improvements to meet the City’s current Tier II, Tier III or Tier IV requirements concurrent with the density for that particular Planning Area, or such other requirements as adopted by the City in the future. The City shall not issue any final subdivision plat until Developer has demonstrated how it will meet the City’s Tier II, Tier III, or Tier IV requirements for that particular Planning Area. The size and densities of the Planning Areas are as follows:

<b>Planning Area</b>	<b>Proposed Land Use</b>	<b>Area (Acres)</b>	<b>Development Units</b>	<b>Maximum Density Units / Acre</b>	<b>Res. Tier</b>
P-1	Church Site	3.3	18*	5.5*	III*
P-2	Multifamily – Cluster Homes	7.2	36	4.9	II
P-3	Multifamily – Triplex	2.2	24	10.9	III
P-4	Multifamily – Townhomes	3.0	32	10.7	III
P-5	Multifamily – Triplex	1.0	12	12.0	III
P-6	Multifamily – Twinhomes	4.8	28	5.8	III
P-7	Multifamily – Detached	15.0	56	3.7	II
P-8	Multifamily – Condos	3.0	36	12.0	III
P-9	Multifamily – Triplex	6.9	60	8.7	III
P-10	Multifamily – Condos	3.5	48	13.7	IV
P-11	Multifamily – Detached	14.0	52	3.7	II

P-12	Multifamily – Triplex	2.0	15	7.5	III
<b>Totals</b>		<b>65.9</b>	<b>417</b>	<b>6.3</b>	

\* Development Units, Density and Residential Tier are included in the event the P-1 is not used for a church site.

2.2 Maximum Density. Developer shall be entitled to develop up to the Maximum Density provided that Developer has complied with applicable provisions of the City’s Code. Developer acknowledges that the City may enact future ordinances, amendments, or other development standards which increases or otherwise modify minimum lot size requirements, setbacks, frontage requirements, or other similar standards which relate to or have an effect on densities. Notwithstanding anything to the contrary herein, any City ordinance, amendment to the City’s Code, or other development standard enacted, implemented, regulated and/or enforced by the City on or after the date of this Agreement which has the effect of prohibiting and/or unreasonably restricting Developer’s ability to develop the vested densities set forth herein shall be inapplicable to the Property, unless the Council, on the record, finds that a compelling, countervailing public interest would be jeopardized without applying such ordinance, amendment or standard to the Property. The City makes no guarantee or warranty that the entitled Maximum Density can be achieved, and the parties acknowledge that as development progresses certain market, infrastructure, and/or other similar constraints beyond the control of the parties may be presented which could prevent the practical use of all vested densities.

2.3 Proposed Land Uses. The Proposed Land Uses set forth above and included in Conceptual Site Plan, Exhibit “C,” are conceptual and do not dictate the final type or layout of buildings within the Project. Nevertheless, it is the expectation of the City and the Developer that the end product will resemble the type of buildings set forth above. The portion of P-9 that is immediately adjacent to P-11 must transition appropriately, with a building product that is compatible with single-family homes. The Conceptual Site Plan shows triplexes in this location; twin homes would also be appropriate.

2.4 Development Requirements. Unless the Development Code is amended to require other improvements, Developer shall construct improvements to meet the City’s Tier II, Tier III, and Tier IV requirements for the approved density within each Planning Area. A copy of Table 17.30.110 of the Development Code, which sets forth the necessary improvements to acquire the approved density, is attached hereto as Exhibit “D.”

3. Design Guidelines. The Design Guidelines for the Project are set forth on attached Exhibit “E.” The Design Guidelines shall be enforced by the Home Owner’s Association. The Design Guidelines are not intended to replace or supersede the City’s Tier II, Tier III, and Tier IV requirements for the approved density within each Planning Area, and in the event of any conflict between the City’s Tier II, Tier III, and Tier IV requirements and the Design Guidelines, the City’s requirements shall control.

4. Improved Open Spaces and Trails. The Project contains seven (7) parks and open space areas as described on the Parks and Open Space Plan attached hereto as Exhibit "F." The Project contains a total of 54.5 acres of total open space. As set forth on the Parks and Open Space Plan, the open space consists of the following: (1) 32.4 acres of hillside open space to be left in its native conditions except for the inclusion of trails and paths, (2) 21.1 acres of park space, and (3) 15.5 acres of improved open space located on slopes of 15 percent or less.

4.1 Improved Open Space. As indicated on the Parks and Open Space Plan, the improved open space is divided among seven (7) improved open space areas. These areas shall be improved substantially similar to the Parks and Open Space designs attached as Exhibit "G," as the creativity and uniqueness of these designs was a key feature to the approval of this community. The improved open space areas are as follows:

- A. Boulder Garden Park (OS-1). The Boulder Garden Park is a .5 acre pocket park. The Boulder Garden Park shall be fully improved prior to more than 40 percent of the building permits being issued for each of the individual Planning Areas 4, 5, or 6. For example, no more than 12 building permits shall be issued in Planning Area 4 until the Boulder Garden Park has been fully improved (40% x 32 DUs = 12.8).
- B. Retention Pond Area (OS-2). This area consists of .8 acres of improved open space around the retention pond. The total site, including the retention pond, equals 2.2 acres. This site includes a community trailhead with parking. The retention pond within Retention Pond Area shall be fully improved prior to issuance of any building permit within the Project. The entire Retention Pond Area shall be fully improved prior to more than 40 percent of the building permits being issued for each of the individual Planning Areas P-4, P-5, P-6 or P-7.
- C. Community Center Pool and Tot Lot, Petroglyph Park, Constellation Overlook, and Neighborhood Trail (OS-3 and OS-4) (the "Community Center Area"). This 5.2 acre park area consists of the community center building, pool, restroom/mechanical building, tot lot, and other features which will be fully improved. It will also include an improved trail system leading through the Petroglyph Park area to the Constellation Overlook. The Petroglyph Park and Constellation Overlook shall include benches, shade structures, signage and other features to create an improved feel to the area. The construction of the Community Center Area shall commence prior to issuing 20 percent of the building permits in the Project, and the Community Center Area shall be fully completed prior to issuing 40 percent of the building permits in the Project. Because this Community Center amenity is central to and serves the entire Project, in

the event that Developer elects to develop the Community Center Area at the beginning of the project--meaning that construction on the area commences prior to any building permits being issued in the Project and is completed prior to issuing 10 percent of the total building permits in the Project--the requirements for completion of other parks and amenities in this section 4.1 (paragraphs A, B, D, E, F, G, H, I and J) shall be revised to 60 percent of building permits from 40 percent of building permits.

- D. Tennis Court Active Park (OS-5). This 4.3 acre park consists of tennis courts, a multi-use field, parking, and other improvements. The construction of the Tennis Court Active Park shall be commenced prior to issuing 20 percent of the building permits in the Project, and the Tennis Court Active Park shall be fully completed prior to issuing 40 percent of the building permits in the Project. Because this park is at the gateway to and serves the entire Project, in the event that Developer elects to develop the Tennis Court Active Park area at the beginning of the project--meaning that construction on the area commences prior to any building permits being issued in the Project and is completed prior to issuing 10 percent of the total building permits in the Project--the requirements for completion of other parks and amenities in this section 4.1 (paragraphs A, B, D, E, F, G, H, I and J) shall be revised to 60 percent of building permits from 40 percent of building permits.
- E. Trailhead Park, Frisbee Disc Golf Course, and Neighborhood Trail (OS-6). This 9.9 acre park and open space area consists of a parking lot, improved park area, benches, trail connections, and access to a frisbee golf course. The Trailhead Park, Frisbee Disc Golf Course, and Neighborhood Trail shall be fully improved prior to more than 40 percent of the building permits being issued for each of the individual Planning Areas P-9 or P-11.
- F. Hilltop Native Park and Open Space (OS-7). This 32.4 acre open space area consists of an improved trail and walking path, shade structures and benches, and a lookout tower. The lookout tower shall be substantially similar to the towers included on Exhibit "H." The Hilltop Native Park and Open Space shall be fully improved prior to more than 40 percent of the building permits being issued for each of the individual Planning Areas P-4, P-5 and P-6.
- G. Bird and Butterfly Garden Park (Park within P-11). This 0.2 acre park area inside P-11 utilizes unique bird and butterfly-friendly plantings, sculptural elements, as well as benches and other landscaped areas. The Bird and Butterfly Garden Park shall be fully improved prior to more than

15 building permits being issued for Planning Area P-11.

- H. Tot Lot/Creative Play Area and Trailhead Park A (Park within P-7). This 0.2 acre pocket park is a creative tot lot area with a shade structure, seating areas, and a trailhead with a trail that connects to the Hilltop Native Park trail system. This park shall be fully improved prior to more than 15 building permits being issued for Planning Area P-7.
- I. Trailhead Park. This 0.1 acre open space is located at the southeast entrance to the project, and shall include community entrance signage and a trailhead. This open space area shall be fully improved prior to issuing any building permits in Planning Areas P-2 or P-3.
- J. Trails. Neighborhood trails are shown through portions of the project in development areas and on hillsides and native areas. The trails through the neighborhoods shall be a minimum of six foot wide asphalt or concrete. The “development” trails shall be built along with the infrastructure for each associated subdivision.

5. Ownership and Maintenance of Open Space. All improved and unimproved open space shall be dedicated to the Oquirrh Mountain Home Owners’ Association (the “HOA”). The HOA shall be solely responsible for all maintenance of the improvements and open space. The HOA shall at all times provide access to all improved and unimproved open space for emergency services, including fire and police services.

6. Vesting of Improved Open Space, Parks and Trails. In accordance with Chapter 17.30 of the City Code, bonus density entitlements, or increases in the number of residential units a developer is entitled to build on an acre (above the 0.8 residential dwelling units per acre base density of the residential zone), are permitted when a project provides additional improvements and amenities as outlined in Chapter 17.30 of the City Code. These additional improvements and amenities include Improved Open Space, Parks and Trails. The City agrees that that the proposed Improved Open Space, Parks, and Trails, as set forth in paragraph 4 of this Agreement, satisfy the Improved Open Space, Parks and Trails requirement for the Maximum Density, and the City shall not require the Developer to build or develop additional Open Space, Parks or Trails in order to develop up to the Maximum Density.

7. Petroglyphs/Rock Art. This site contains historic rock art that is intended to be preserved and displayed for public viewing primarily in the Petroglyph Park area. Every effort should be made to preserve and protect this rock art for the benefit of the community.

8. Community Improvements. In conjunction with Chapter 17.30 of the Development Code, Developer must contribute \$2,000 per buildable acre of land within the Project to fund construction of community wide improvements, for a total of \$208,400.00.

Developer agrees that prior to recording each subdivision plat, Developer shall either place into a community improvement escrow fund for the Project (the "Improvement Fund") established with the City sufficient funds to meet the required community improvements, or otherwise demonstrate that a sufficient amount of community improvements have been constructed to meet the requirement. For example, if the first subdivision plat is for 10 acres, Developer will place \$20,000 in the Improvement Fund or demonstrate that \$20,000 of community improvements have been constructed to meet the requirements. Developer and City agree that certain amenities within the Project, specifically the trails and lookout towers described in Section 4.1.E and 4.1.F, were planned with broader community use in mind, and as such the costs of developing these areas can be credited toward half (\$104,200.00) of the community improvements contribution referenced in this paragraph. Developer agrees to execute agreements necessary to secure the public use of all trails and lookout towers within these areas. The remaining \$104,200.00, plus any money that is not used for the trails and towers, must be placed into an escrow fund under the timing stated in this paragraph to be used for regional parks or public buildings that will benefit the residents of this development.

9. Home Owners' Association. Prior to approval of any development within the Project, the Developer shall create an HOA for the Project with legal authority to collect assessments and to maintain the improvements.

10. Transitioning and Setback Requirements. Developer agrees to comply with all transitioning requirements set forth in Section 12.15 of the Development Code. In addition, a 20-foot building setback shall be required along the project's southern boundary, including a ten foot landscaped corridor to be planned cooperatively with the neighboring property owner (SITLA), which will provide both the other 10-foot landscaped portion of the corridor and the trail.

11. Utility Services and Infrastructure Improvements.

A. Sewer Lift Station. The Project will require Developer to design and install a lift station to provide sewer service to the Project. The Developer has obtained a preliminary engineering study and plan for the lift station. A final plan for the lift station must be approved by the City prior to the approval of any Development Agreement for the Project.

B. Roads and Cul-De-Sacs. Road grades within the Project shall not exceed 10%, and must be verified with preliminary and final plat approval. A traffic study has been submitted and reviewed by the City Engineer. A copy of the traffic study is attached hereto as Exhibit "I." The construction of all roads must comply with the traffic study and the Development Code. Cul-de-sacs are discouraged in the city, and the maximum length of any cul-de-sac in the Project may not exceed 500 feet or serve more than 15 residential units. The Developer must provide a minimum of two road accesses to the property to the south, and at least two to the property to the west.

C. Other Utilities. All utilities shall meet the City's Standards and Specifications. Any off-site utility improvements must be completed prior to approval of any Development Agreement for the Project.

12. Dedication of Facilities. Except as provided in a reimbursement agreement which may be entered between the City and the Developer, the Developer agrees to dedicate and donate free and clear of all encumbrances to the City all required spaces for the location of City owned utilities, utility facilities and improvements for the construction and use of utilities, roads, and other public ways.

13. Water Rights. Developer shall comply with the City's Development Code, as amended, related to providing water or water rights to the City for the Project.

14. Withholding Approval Upon Default. The parties agree that the City shall not approve or record any subdivision in the Project if the Developer is in default on any obligation to the City which requires the construction of roads and completion of public improvements or other utility infrastructure to serve the Project. In addition, the City may withhold approval of building permits to construct any building or structure within the Project if the Developer is not current with all obligations to the City at the time of application for the development approval and/or has not completed all required improvements within the time to complete required improvements approved by the City Council.

15. Reserved Powers. The parties agree that the City reserves certain legislative powers to amend its Development Code to apply standards for development and construction generally applicable throughout the City. It is the intent of the parties to vest the Developer with the specific land uses and development density defined specifically on the Land Use Map (Exhibit B) and to require compliance by the Developer with all other generally applicable standards, conditions and requirements enacted by the City to protect the safety, health and welfare of the current and future inhabitants of the City.

16. Impact Fees. Developer agrees to pay all impact fees when due at subdivision approval, subdivision recordation or upon application for building permits from the City as set forth more specifically in the City Impact Fee Ordinance as it may be amended from time to time. The parties may enter into a separate Reimbursement Agreement upon the enactment of impact fee requirements which shall provide for reimbursement to the Developer for certain improvements transferred to the City by the Developer as provided more specifically in the Reimbursement Agreement.

17. Annual Review of Compliance. The parties agree that the City may conduct an annual review of compliance by the Developer within the terms of this Agreement. It shall be an event of default if the Developer has failed to fund roads, parks or other utility infrastructure facilities required by this Agreement or by the City Development Standards, or if work remains incomplete on public infrastructure facilities without having received an adequate extension of



time for the completion of such facilities from the City. It shall be an event of default if the Developer fails to deposit adequate collateral for the improvements required by this Agreement or fails to cure any defect discovered by the City upon inspection of any infrastructure utility facilities.

18. Default Notice. Upon the occurrence of an event of default, the City shall provide not less than fifteen (15) days notice to the Developer of a meeting of the City Council where the Developer's default shall be heard and reviewed by the City Council. The Developer shall be entitled to attend the hearing and comment on the evidence presented concerning the default. Upon a finding by the City Council that the Developer is in default, the City Council may order that work in the Project be terminated until the default is cured or may issue such further directions to City staff and to the Developer as deemed appropriate under the circumstances.

19. Binding Effect. This Agreement shall be binding upon and inure to the benefit of the successors, heirs and assigns of the parties hereto, and to any entities resulting from the reorganization, consolidation, or merger of any party hereto.

20. Integration. This Agreement constitutes the entire understanding and agreement between the parties, and supersedes any previous agreement, representation, or understanding between the parties relating to the subject matter hereof; provided however, that the Development Code of the City shall govern the procedures and standards for approval of each subdivision and public improvement.

21. Not Severable. The provisions of this Agreement are not severable, and should any provision hereof be deemed void, unenforceable or invalid, such provision shall affect the remainder of this Agreement, and shall provide grounds for dissolution of the Agreement at the option of the parties in the exclusive discretion of each of them.

22. Waiver. Any waiver by any party hereto of any breach of any kind or character what so ever by the other party, whether such waiver be direct or implied, shall not be construed as a continuing waiver of or consent to any subsequent breach of this Agreement on the part of the other party.

23. No Modification. This Agreement may not be modified except by an instrument in writing signed by the parties hereto.

24. Governing Law. This Agreement shall be interpreted, construed and enforced according to the laws of the State of Utah.

25. Costs of Enforcement. In the event of default on the part of any party to this Agreement, that party shall be liable for all costs and expenses incurred by the other parties enforcing the provisions of this Agreement, whether or not legal action is instituted.

23. No Modification. This Agreement may not be modified except by an instrument in writing signed by the parties hereto.

24. Governing Law. This Agreement shall be interpreted, construed and enforced according to the laws of the State of Utah.

25. Costs of Enforcement. In the event of default on the part of any party to this Agreement, that party shall be liable for all costs and expenses incurred by the other parties enforcing the provisions of this Agreement, whether or not legal action is instituted.

26. Agreement to Run With the Land. This Agreement shall be recorded against the Property and shall be deemed to run with the land and shall be binding on Developer and all successors and assigns of any of the foregoing.

DATED this 28th day of February, 2011.

VESTIN MORTGAGE, INC.

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 2011.

**CORPORATION OF THE PRESIDING  
BISHOP OF THE CHURCH OF JESUS  
CHRIST OF LATTER-DAY SAINTS, A UTAH  
CORPORATION SOLE**

By: \_\_\_\_\_

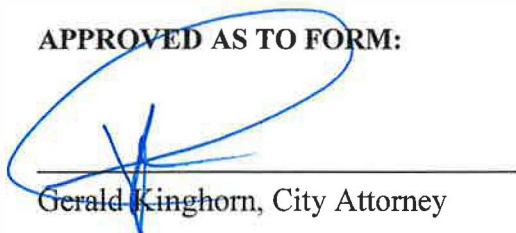
Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

DATED this 6 day of July, 2011.

  
Heather Jackson, Mayor

APPROVED AS TO FORM:

  
Gerald Kinghorn, City Attorney

ATTEST:

  
Fionnuala Kofoed, City Recorder



OQUIRRH MOUNTAIN WEST, LLC



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By: Scott Kirkland, Manager  
Sage Communities, LLC (Manager of Oquirrh  
Mountain West, LLC)

11/26/11  


# **Exhibit A**

**[Legal Description]**

LILD

\* \* \* Land Information System \* \* \*

Property Serial Number: 58:048:0050

Locator / Alpha Serial: EM /

Owner Name: VESTIN MORTGAGE INC

JASONLT 20060216

Taxing Description:

(Not For Legal Documents)

Year: 2007.....

Tax District #: 038

Acres: 120.31

CODED

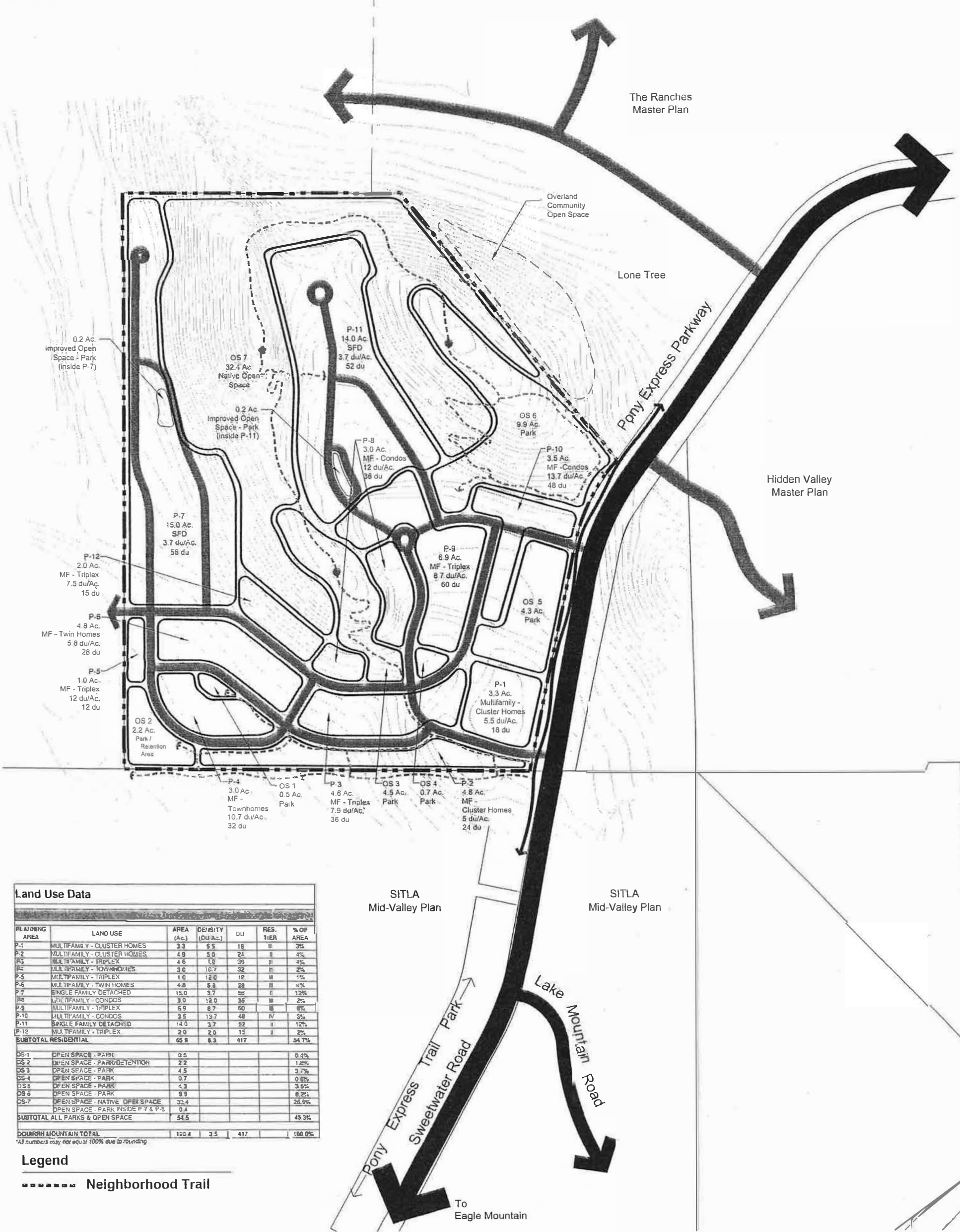
Page: 1

COM AT S 1/4 COR. SEC. 25, T5S, R2W, SLB&M.; N 0 DEG 50'24"E 2709.62 FT; S 89 DE  
G 31'55"E 1296.92 FT; S 38 DEG 0'30"E 1603.87 FT; S 35 DEG 53'48"W 117.01 FT; AL  
ONG A CURVE TO L (CHORD BEARS: S 23 DEG 54'51"W 332.19 FT, RADIUS=802.79 FT) ARC  
LENGTH = 334.60 FT; S 12 DEG 1'20"W 1072.87 FT; N 89 DEG 36'51"W 1897.52 FT TO B  
EG. AREA 120.306 AC.

\* \* \* Search Completed \* \* \*

# Exhibit B

[Land Use Map]



**Land Use Data**

PLANNING AREA	LAND USE	AREA (Ac.)	DENSITY (DU/Ac.)	DU	RES. TIER	% OF AREA
P-1	MULTIFAMILY - CLUSTER HOMES	3.3	5.5	18	II	3%
P-2	MULTIFAMILY - CLUSTER HOMES	4.8	5.0	24	II	4%
P-3	MULTIFAMILY - TRIPLEX	4.6	1.0	39	II	4%
P-4	MULTIFAMILY - TOWNHOMES	3.0	10.7	32	II	2%
P-5	MULTIFAMILY - TRIPLEX	1.0	12.0	12	II	1%
P-6	MULTIFAMILY - TWIN HOMES	4.8	5.8	28	II	4%
P-7	SINGLE FAMILY DETACHED	15.0	3.7	56	I	12%
P-8	MULTIFAMILY - CONDOS	3.0	12.0	36	III	2%
P-9	MULTIFAMILY - TRIPLEX	6.9	8.7	60	III	8%
P-10	MULTIFAMILY - CONDOS	3.5	13.7	48	IV	3%
P-11	SINGLE FAMILY DETACHED	14.0	3.7	52	I	12%
P-12	MULTIFAMILY - TRIPLEX	2.0	2.0	15	II	2%
<b>SUBTOTAL RESIDENTIAL</b>		<b>65.9</b>	<b>6.3</b>	<b>417</b>		<b>54.7%</b>
OS-1	OPEN SPACE - PARK	0.5				0.4%
OS-2	OPEN SPACE - PARK/RETENTION	2.2				1.8%
OS-3	OPEN SPACE - PARK	4.5				3.7%
OS-4	OPEN SPACE - PARK	0.7				0.6%
OS-5	OPEN SPACE - PARK	<3				3.6%
OS-6	OPEN SPACE - PARK	9.9				8.2%
OS-7	OPEN SPACE - NATIVE OPEN SPACE	32.4				26.9%
<b>SUBTOTAL ALL PARKS &amp; OPEN SPACE</b>		<b>54.5</b>				<b>45.3%</b>
<b>OQUIRRH MOUNTAIN TOTAL</b>		<b>120.4</b>	<b>3.5</b>	<b>417</b>		<b>100.0%</b>

**Legend**

----- Neighborhood Trail

# Oquirrh Mountain Master Development Plan

Scale: 1" = 100'  
July 22, 2008

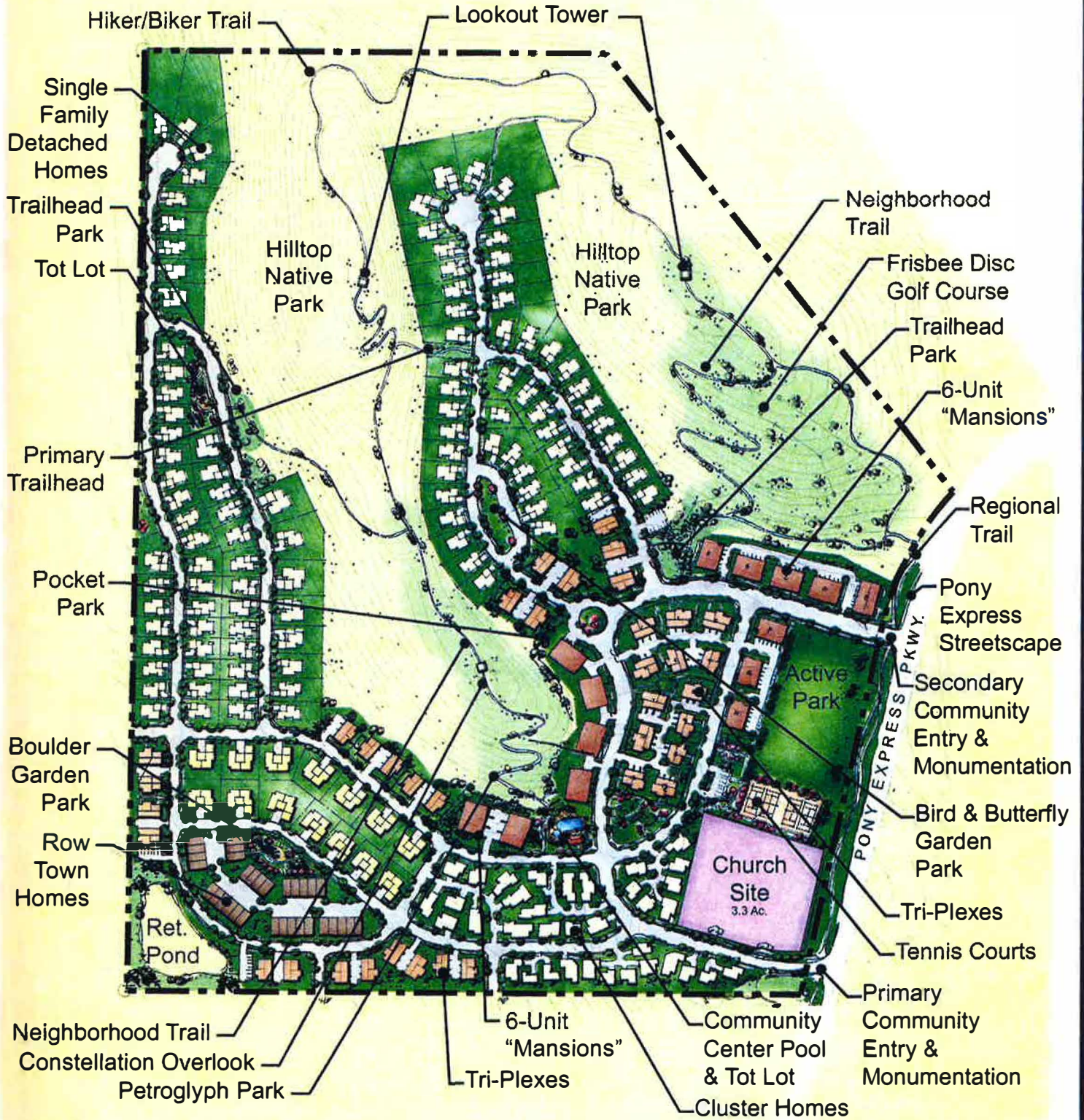


NUSZER KOPATZ  
urban design architects



# **Exhibit C**

**[Conceptual Site Plan]**



Illustrative graphics are conceptual and are subject to change.

# Oquirrh Mountain Ranch

## Conceptual Site Plan

Scale: 1"=150'-0"  
June 1, 2008



# Exhibit D

[Development Code – Bonus Density Tables 17.30.110]

## Exhibit D

### 17.30.110 Tables.

**Table 17.30.110(a) Tier I Residential Bonus Density Entitlements (Required)**

Bonus Density	Improvement	Required/Optional
0.8	<i>Base Density Improvements</i>	<i>Required</i>
0.8	<u>Improved open space</u> : 4% improved open space (total buildable acres)	Required
	Fund or construct community improvements/amenities	Required
	Entryways and monuments	Required
	Professional land planning	Required
<b>1.6</b>	<b>Total density granted required to do all improvements noted above</b>	

0.81 to 1.6 dwelling units per acre: Tier I.

**Table 17.30.110(b) Tier II Residential Bonus Density Entitlements (Optional)**

Bonus Density	Improvement	Required/Optional
0.8	<i>Base Density Improvements</i>	<i>Required</i>
0.8	<i>Tier I Improvements</i>	<i>Required</i>
	<u>Improved open space</u> : 8% improved open space (total buildable acres)	
0.5	Architectural and landscape guidelines/CC&Rs/design review committee	Optional
0.7	Street trees, enlarged park strips, fencing, and street signposts	Optional
1.0	Masonry materials (75% of the exterior)	Optional
Up to 1.5	Residential lot landscaping (1 front and sides, 0.5 rear)	Optional
0.1 – 0.6	Recreational amenities	Optional
<b>5.9</b>	<b>Total available (cannot exceed 5.2 dwelling units per acre)</b>	

1.61 to 5.2 dwelling units per acre: Tier II.

**Table 17.30.110(c) Tier III Residential Bonus Density Entitlements (Required)**

<b>Bonus Density</b>	<b>Improvement</b>	<b>Required/Optional</b>
0.8	<i>Base Density Improvements</i>	<i>Required</i>
0.8	<i>Tier I Improvements</i>	<i>Required</i>
3.6	<i>Tier II Improvements</i>	<i>Required</i>
7.0	<u>Improved open space</u> : 8% improved open space (total buildable acres) <i>plus</i> 10% of Tier III development acreage	Required
	Clubhouse (all multifamily development)	Required
	Swimming pool	Required
<b>12.2</b>	<b>Total density granted required to do all improvements noted above</b>	

5.21 to 12.2 dwelling units per acre: Tier III.

**Table 17.30.110(d) Tier IV Residential Bonus Density Entitlements (Optional)**

<b>Bonus Density</b>	<b>Improvement</b>	<b>Required/Optional</b>
0.8	<i>Base Density Improvements</i>	<i>Required</i>
0.8	<i>Tier I Improvements</i>	<i>Required</i>
3.6	<i>Tier II Improvements</i>	<i>Required</i>
7.0	<i>Tier III Improvements</i>	<i>Required</i>
	<u>Improved open space</u> : 8% improved open space (total buildable acres) <i>plus</i> 10% of Tier III and Tier IV development acreage	
1.5	Covered parking	Optional
3.5	Garages	Optional
3.5	Masonry materials (75%)	Optional
3.5	Storage units (100 square feet)	Optional
<b>24.2</b>	<b>Total available (cannot exceed 22.7 dwelling units per acre)</b>	

12.21 to 22.7 dwelling units per acre: Tier IV.

[Ord. O-24-2008 § 2 (Exh. A Tables 6.1 – 6.4); Ord. O-27-2006 § 2 (Exh. A Tables 6.1 – 6.4);  
Ord. O-23-2005 § 3 (Exh. 1(1) Tables 6.1 – 6.4)].

**17.30.120 Improved open space calculations.**

**Example 1**

Total Land Area: 160 Acres

Total Buildable Land: 100 Acres

Tier I and II: 80 Acres

Tier III and IV: 20 Acres

$8\% \times 100 = 8$  Acres

$10\% \times 20 = 2$  Acres (to be built within Tier III and IV areas)

Total Improved Open Space Required = 10 Acres (10% of buildable land)

**Example 2**

Total Land Area: 160 Acres

Total Buildable Land: 100 Acres

Tier I and II: 50 Acres

Tier III and IV: 50 Acres

$8\% \times 100 = 8$  Acres

$10\% \times 50 = 5$  Acres (to be built within Tier III and IV areas)

Total Improved Open Space Required = 13 Acres ( $\pm 13\%$  of buildable land)

**Example 3**

Total Land Area: 30 Acres

Total Buildable Land: 30 Acres

Tier I and II: 25 Acres

Tier II and III: 5 Acres

8% x 30 = 2.4 Acres

10% x 5 = 0.5 Acres (to be built within Tier III and IV areas)

Total Improved Open Space Required = 2.9 Acres ( $\pm 10\%$  of buildable land)

**Example 4**

Total Land Area: 30 Acres

Total Buildable Land: 30 Acres

Tier I and II: 0 Acres

Tier III and IV: 30 Acres

8% x 30 = 2.4 Acres

10% x 30 = 3.0 Acres (to be built within Tier III and IV areas)

Total Improved Open Space Required = 5.4 Acres ( $\pm 18\%$  of buildable land)

[Ord. O-24-2008 § 2 (Exh. A, Exh. 6.5)].

# Exhibit E

[Design Guidelines]



# OQUIRRH MOUNTAIN RANCH

## Master Design Guidelines

### CHAPTER 1 – Introduction

#### 1.1 PURPOSE AND INTENT OF THE GUIDELINES

The purpose of the **Oquirrh Mountain Ranch Community Design Guidelines** ("Guidelines") is to provide the Oquirrh Mountain Ranch stakeholders with a clear statement of the design philosophy, principles, and development criteria for Oquirrh Mountain Ranch. Oquirrh Mountain Ranch stakeholders include land owners, Eagle Mountain City officials, master developers, sub-developers, home builders and other contractors, prospective buyers, and homeowners.

The intent of these Guidelines is to facilitate the appropriate, coherent, and compatible uses of land in order to:

- Establish a *unified* community appearance that will complement the native land forms and landscape;
- Encourage a *variety* of residential densities, home types and styles, and associated lifestyles;
- Promote *distinct*, individual neighborhoods through creative site planning, pedestrian and vehicular circulation, architecture, landscape architecture, and overall community design;
- Provide a *comprehensive* system of convenient recreational amenities for both passive and active uses; and
- Recognize the *economic* realities of changing real estate markets and the necessity to provide financial rewards for Oquirrh Mountain Ranch stakeholders.

Accordingly, these Guidelines direct development throughout Oquirrh Mountain Ranch and provide the critical principles unifying the various neighborhoods within the Oquirrh Mountain Ranch master plan in a manner that will assure high-quality design and construction. These Guidelines are to be used as a design guideline template for individual neighborhoods and are applicable to the development of site plans, architecture plans, and landscape plans that will be submitted to and reviewed by the Oquirrh Mountain Ranch Design Review Committee ("Oquirrh Mountain Ranch DRC"), and post-construction changes proposed by homeowners and/or homeowners' association(s). These Guidelines shall be used for any area within the Oquirrh Mountain Ranch master plan that does not prepare individual neighborhood design guidelines in conformance with these Guidelines.

#### 1.2 HOW TO USE THESE GUIDELINES

The Guidelines are divided into three parts:

- **Guiding Principles and Regulatory Framework (Chapter 2)** – This section contains information pertaining to the overall principles that will direct the physical design of Oquirrh Mountain Ranch as it is built out over the multi-year life of the project, and the relationship of these Guidelines to individual neighborhood design guidelines and other regulations that control its development. This section includes a detailed procedure for design review, including: concept plan review, plan submittal and final inspection. The design review procedure insures that quality development and construction occurs in every neighborhood and is compatible with the overall Oquirrh Mountain Ranch community while

accommodating the uniqueness of each neighborhood. This section also contains the procedures for variances, appeals and the review of modifications to existing structures.

- **Site Planning Guidelines (Chapter 3)** – This section describes the concepts which form the foundation of the Guidelines and presents an overall philosophy for the physical character of Oquirrh Mountain Ranch. This chapter establishes detailed site design principles that are the framework for the more detailed design components within these Guidelines. This section describes concepts related to community and neighborhood development, and best practices for site sustainability, including the preservation of native landscapes and the configuration of parking lots, circulation features, and pedestrian spaces. In addition, practices are identified to promote site-sensitive grading and construction techniques in areas suitable for development to prevent the inappropriate “grading out” of landscape features, such as ridgelines and drainage ways (overlot or strip grading), and to encourage “contour grading” that harmonizes with the natural contours of the land rather than “mass grading” that reduces inherent land values.
- **Design Standards (Chapter 4)** – This section discusses detailed design standards for architecture, landscape architecture, signage, and lighting. This section also addresses a palette of acceptable and encouraged architectural elements, materials, and colors. These Guidelines are intended to increase building variety and visual interest throughout the community while ensuring overall compatibility and design quality.

## CHAPTER 2 – Guiding Principles and Regulatory Framework

### 2.1 COMMUNITY VISION & GUIDING PRINCIPLES

The design philosophy for community development at Oquirrh Mountain Ranch, and the consequent design standards necessary to achieve that preferred development, are intended to make the land and homes more desirable to the builder community and more marketable to the home-buying public than nearby subdivisions. Enhanced marketability accelerates land and lot sales, quickens absorption of housing product, and ultimately yields superior valuation and demand over the life of the Oquirrh Mountain Ranch project.

#### 2.1.1 Design Theme

Oquirrh Mountain Ranch provides for a mix of complimentary land uses; diverse, high-quality housing and neighborhood design; community amenities that benefit residents of the neighborhood, Eagle Mountain City, and the region; a unifying first-class community image; and stewardship of the natural environment. An emphasis is placed on the creation of a well-planned mix of conventional neighborhoods and "neo-traditional" higher-density neighborhoods with mixed products. The preservation and integration of open space throughout the community will be a unifying and unique element of Oquirrh Mountain Ranch.

#### 2.1.2 Historical Context, Site Description

Oquirrh Mountain Ranch is located in Eagle Mountain City on a raised bench overlooking a portion of the Cedar Valley. It is the southernmost parcel in The Ranches development. The site includes some Native American petroglyphs that will be featured in one of the community parks.

Primary access and visibility to the undeveloped community is from Pony Express Parkway, which follows the historic route of the famous Pony Express Trail, and forms the northwestern boundary of the community.

#### 2.1.3 Community Background

Approved in 2008 by the Eagle Mountain City Council, the **Oquirrh Mountain Ranch Master Plan** ("Master Plan") establishes the development framework for the Oquirrh Mountain Ranch community. The Master Plan identifies development pods, and establishes future land uses (residential, civic, park, open space, etc.) and densities for each pod. In addition, the Master Plan illustrates conceptual locations of the primary circulation system (parkways and community trails), and street cross-sections to be used throughout the community. The Parks and Open Space Map identifies the locations and acreages required to be built. The Master Plan documents are included for reference in Figures 5.1 – 5.4.

The official approved Master Plan should be consulted before development commences to ensure compliance with these documents and subsequent amendments.

### 2.2 CONFLICTS WITH OTHER REGULATIONS

All development within Oquirrh Mountain Ranch shall comply with laws of the State of Utah and the United States of America and with the codes and regulations of Eagle Mountain City. All development shall also comply with the **Declaration of Covenants, Conditions and Restrictions for Oquirrh Mountain Ranch** ("Oquirrh Mountain Ranch CC&Rs") adopted for Oquirrh Mountain Ranch. To the extent that the Oquirrh Mountain Ranch Community Design Guidelines conflict with design standards that are required by an entity having jurisdiction over development in Oquirrh Mountain Ranch, then the Oquirrh Mountain Ranch Community Design Guidelines shall prevail. To the extent that any provisions of the Oquirrh Mountain Ranch Community Design Guidelines conflict with the provisions of the Oquirrh Mountain Ranch CC&Rs, the Oquirrh Mountain Ranch CC&Rs shall control.

Exceptions to the specific provisions of the Oquirrh Mountain Ranch Community Design Guidelines may be granted by the Oquirrh Mountain Ranch DRC at its sole discretion. All exceptions are considered unique, and are not to be a precedent for any future decision by the Oquirrh Mountain Ranch DRC.

### 2.2.1 Additional sources for information

- Oquirrh Mountain Ranch Master Plan (2008): master development plan map, open space plan, phasing plan, residential density plan, roadway hierarchy plan, and existing slope plan (as amended)
- Eagle Mountain City Development Code
- Eagle Mountain City General Plan: includes Eagle Mountain's community development criteria, vision and goals of the City
- Eagle Mountain City Zoning Map
- Oquirrh Mountain Ranch Master Development Agreement
- Oquirrh Mountain Ranch Master Covenants, Conditions and Restrictions (Oquirrh Mountain Ranch CC&Rs)

## 2.3 DESIGN REVIEW PROCESS

The **Oquirrh Mountain Ranch Design Review Committee** ("Oquirrh Mountain Ranch DRC") shall be created at the time that the Oquirrh Mountain Ranch CC&Rs are recorded at Eagle Mountain City. The Oquirrh Mountain Ranch DRC shall have jurisdiction over design review for proposed development on all private parcels at Oquirrh Mountain Ranch. As specified in the Oquirrh Mountain Ranch CC&Rs, it shall be the responsibility of the Oquirrh Mountain Ranch DRC to ensure that all proposed improvements at Oquirrh Mountain Ranch are in compliance with the design principles of the community as reflected in the Oquirrh Mountain Ranch Community Design Guidelines. The Oquirrh Mountain Ranch DRC shall use its reasonable discretion and make final determinations in good faith as per the direction provided in these Oquirrh Mountain Ranch Community Design Guidelines.

The decisions of the Oquirrh Mountain Ranch DRC are final, but may be appealed to the Oquirrh Mountain Ranch Community Council per the process identified herein. Oquirrh Mountain Ranch DRC approval is required prior to submittal of a site plan, preliminary plat, and/or building permit to Eagle Mountain City, and prior to the commencement of construction or exterior physical modification in Oquirrh Mountain Ranch. The applicant or builder shall submit such plans and specifications necessary to demonstrate conformance with the intent of the Oquirrh Mountain Ranch Community Design Guidelines.

All applicants are responsible for addressing and meeting any and all applicable local, state, and federal codes and regulations. The Oquirrh Mountain Ranch DRC shall not be responsible for reviewing or approving any plans and specifications with regard to accessibility, engineering design, structural engineering, safety, or for compliance with any applicable zoning, building, or other local, state and federal laws, ordinances and policies.

A design review process has been established to ensure that all development within Oquirrh Mountain Ranch meets the requirements set forth in these Oquirrh Mountain Ranch Community Design Guidelines and Oquirrh Mountain Ranch CC&Rs. The review covers site planning, architecture, landscape architecture, signage, and exterior lighting.

### 2.3.1 The design review process is divided into five steps

1. Pre-Design Meeting
2. Preliminary Plan Submittal
3. Final Plan Submittal
4. Construction Period
5. Final Inspection

A submittal for review and approval is to be made to the Oquirrh Mountain Ranch DRC at each step with the associated review fee. The Oquirrh Mountain Ranch DRC shall determine the specific submittal documents required at the time of the Pre-Design Meeting. Approval to submit plans for each successive step in the design review process is contingent on an approval of the previous step, and shall be issued by the Oquirrh Mountain Ranch DRC. It is recommended but not required that architectural plans be prepared by a licensed architect, and that landscape plans (excluding homeowner landscape improvement plans) be prepared by a licensed landscape architect.

The DRC will take note of the fact that a builder may not need to complete all these requirements in cases in which the requirements have previously been fulfilled by a developer. For example, the Site Survey requirement shall not apply to builders who are building on lots where horizontal improvements have already been installed or on unimproved lots in a section on which a plat has previously been approved. The DRC shall avoid imposing unnecessary requirements where such requirements are redundant and duplicative of previous work performed by other parties.

#### ***Step 1: Pre-Design Meeting***

To initiate the review and approval process prior to preparing any detailed drawings for a proposed improvement, the owner and architect or builder shall meet with the Oquirrh Mountain Ranch DRC to present and discuss the proposed project and to explore and resolve any questions regarding construction requirements or the interpretation of the Guidelines or the design review process. This informal review will offer guidance prior to the Preliminary Plans submittal.

#### ***Step 2: Preliminary Plan Submittal***

This review covers conceptual site planning and architecture, and preliminary landscape architecture for any proposed development or improvement in Oquirrh Mountain Ranch. At this stage, site planning is particularly important and should be developed with sufficient detail to indicate the general layout and arrangement of streets, buildings, and open spaces. Three (3) paper sets and one electronic set of Preliminary Plans are to be submitted to the Oquirrh Mountain Ranch DRC for review. Plans should include the following information:

- Site Survey
  - Parcel boundaries, dimensions and legal description
  - Existing contours at 2-foot intervals
  - Major existing terrain features or historical features
- Site Plans (at a scale of no less than 1" = 100')
  - Name of owner or developer, consultants and date of submittal
  - Property boundary and site coverage data (e.g., total planning area acreage, number of dwelling units, dwelling units per acre, typical lot sizes, and open space acreage)
  - Proposed lots, building envelopes and setbacks (single-family detached neighborhoods)
  - Proposed building footprints and building setbacks (single-family attached, multi-family, mixed-use and commercial developments)
  - Maximum building height/number of stories

- Streets and Rights-of-Way (ROW) widths
  - Parking lot layout, where applicable, including the location of handicapped spaces, and numerical data for parking
  - Sidewalks, off-street trails, and bicycle lanes
  - Community areas, such as courtyards and plazas
  - Parks, open spaces and amenity areas
  - Existing utility easements
  - North arrow and scale
- Schematic Architectural Plans (at a scale of no less than 1/8" = 1'-0")
    - Floor plan(s)
    - Elevation(s) (See Architecture Standards for Elevation Articulation Ratio calculation)
    - Typical exterior materials, colors, and finishes under consideration
- Preliminary Landscape Architecture Plans (at the same scale as site plans; or at a larger scale if requested by the Oquirrh Mountain Ranch DRC for readability)
    - Conceptual landscape plan showing locations of lawns, trees, shrubs, and planting beds
    - Conceptual fence and/or wall plan
    - Plant materials under consideration (See Appendix 6.3 for Approved Plant List)

### ***Step 3: Final Plan Submittal***

This review covers specific designs for site planning, architecture, landscape architecture, signage, and exterior lighting. After preliminary approval is obtained, Final Plans shall be submitted to the Oquirrh Mountain Ranch DRC. The Final Plan drawings should further elaborate upon the approved Preliminary Plans. This review should include resolution of the conditions placed on the prior preliminary Plan approval. Three (3) complete sets of design drawings are to be submitted to the Oquirrh Mountain Ranch DRC for review. Plans should include the following information:

- Site Plans (at a scale of no less than 1" = 100')
  - Property boundary and site coverage data (e.g., total planning area acreage, number of dwelling units, dwelling units per acre, lot sizes, and open space acreage)
  - Dwelling/footprint location and setbacks (front, rear, sides)
  - Dwelling heights/number of stories
  - Street width and Right-of-Way (ROW) width
  - Parking lot layout, where applicable, including the location of standard, compact, and handicapped spaces and numerical data for each type of parking
  - Sidewalks, off-street trails, bicycle lanes, and paths
  - Community areas such as courtyards and plazas
  - Parks, open space and amenity areas (with acreage and associated landscape plans)
  - Development phasing concept (if applicable)
  - Locations and finished floor elevations of homes
  - Utility easements and locations (sewer, water, gas, power, and telecommunications)
  - Conceptual grading plan with existing and proposed grades and limits of construction
  - Location of on-site exterior lighting
  - Location of accessory structures, decks, driveways, etc.
  - North arrow and scale
- Covenants, Conditions and Restrictions ("CCRs") compliance information, including but not limited to the following:
  - EAR requirements
  - Size of proposed dwellings, including minimum square feet of dwelling

- Exterior material and color requirements
  - Minimum setbacks for building envelope
  - Other thematic elements
- Architecture Plans (at a scale of no less than 1/8" = 1'-0")
    - Floor plan(s) (including the square footage of each residence).
    - Elevations: three (3) elevations for each floor plan with full graphic representation of exterior treatments
    - Calculation of Elevation Articulation Ratio (EA Ratio) (See Architecture Standards for EA Ratio calculation)
    - Roof Plan
    - Sample board of exterior materials (e.g., cladding, roof materials), colors and finishes for building body and trim
    - Location of wall-mounted lights
    - Method of screening of exterior utility boxes and mechanical and communications equipment (for multi-family and commercial)
  - Landscape Architecture Plans (at the same scale as site plans) (for Planned Unit Developments "PUDs")
    - Location, size, quantity, and types of plant materials (See Appendix 6.3 for Approved Plant List)
    - Location and dimensions of berms and other grading elements
    - Location and type of hardscape materials
    - Location and description of site furnishings
    - Description of type(s) of irrigation proposed
    - Location, type and materials of fencing and/or walls

#### ***Step 4: Construction Period***

An appointed representative of the Oquirrh Mountain Ranch DRC will observe all work in progress and will advise the Oquirrh Mountain Ranch DRC to give notice of non-compliance, if found.

#### ***Step 5: Final Inspection***

Upon completion of any project or modification for which final design approval was given (in Step 3 above) by the Oquirrh Mountain Ranch DRC, the owner or developer shall give written notice of completion to the Oquirrh Mountain Ranch DRC. Within such reasonable time as the Oquirrh Mountain Ranch DRC may determine, but in no case exceeding 14 calendar days from receipt of such written notice of completion, a member of the Oquirrh Mountain Ranch DRC will inspect the project, improvements or modification.

If the completed improvement has conformed with the Guidelines and followed the approved plans, the Oquirrh Mountain Ranch DRC will issue a Final Inspection Certificate signifying compliance.

### **2.3.2 Review of Modification**

The review of any modifications, including but not limited to changing of colors, materials, additions and landscaping alterations of an existing structure shall require the submission of an Application for Review to the Oquirrh Mountain Ranch DRC. Depending on the scope of the modification, the Oquirrh Mountain Ranch DRC may require the revised submission of all or some of the plans and specifications described above.

### **2.3.3 Variances**

Variations may be granted in some circumstances (including, but not limited to topography, natural obstructions, hardship or environmental considerations) when deviations may be required. The Oquirrh Mountain Ranch DRC shall have the power to grant a variance from strict compliance in such circumstances, so long as the variance does not result in a material violation of the Oquirrh Mountain Ranch CC&Rs. No variance shall be effective unless approved in writing. Each variance is for one specific occurrence, and may be applied only to the approved area.

#### **2.3.4 Appeals**

Any owner or developer shall have the right to appeal a decision by the Oquirrh Mountain Ranch DRC by submitting the information and documentation described above; however such appeal shall be considered only if the owner or developer has modified the proposal or has new information which would, in the opinion of the Oquirrh Mountain Ranch Community Council warrant a reconsideration. If the owner or developer fails to appeal a decision of the Oquirrh Mountain Ranch DRC within 30 days of the decision, then the decision of the Oquirrh Mountain Ranch DRC is final. In the case of disapproval and resubmittal, the Oquirrh Mountain Ranch DRC shall have ten calendar days from the date of each resubmittal to approve or disapprove any resubmittal.

#### **2.3.5 Oquirrh Mountain Ranch DRC Review Process**

Unless otherwise explicitly provided herein to the contrary, all approvals required under these Oquirrh Mountain Ranch Community Design Guidelines shall be in writing, and may be granted or withheld at the sole discretion of the Oquirrh Mountain Ranch DRC. Any approval pursuant to these Oquirrh Mountain Ranch Community Design Guidelines does not constitute a warranty, assurance, or representation by the approving party.

Applicant(s) shall submit requests for approval to the specified agent of the management company for the Oquirrh Mountain Ranch Homeowners' Association. Such application(s) shall include the items indicated above (in Step 3). The Oquirrh Mountain Ranch DRC will review and evaluate all applications on a semi-monthly basis, confirming compliance of the design with the Oquirrh Mountain Ranch Community Design Guidelines and verifying that recommendations made by the Oquirrh Mountain Ranch DRC, if any, have been incorporated. Written responses to applications will be sent to the applicant within fifteen days of the monthly review meeting.

In the event that the Oquirrh Mountain Ranch DRC approves an application, a Oquirrh Mountain Ranch DRC Approval Notice ("Approval Notice") will be sent to the applicant. A copy of this Approval Notice shall accompany any application for Site Plan, Plat or Building Permit submitted to Eagle Mountain City for consideration.

The Oquirrh Mountain Ranch DRC reserves the right to request additional information as deemed necessary to adequately evaluate any submittal (i.e.: renderings, sketches, 3D physical or digital model(s), staking, etc.).

Review fees for improvements at Oquirrh Mountain Ranch shall be set and approved by the Oquirrh Mountain Ranch DRC. A fee schedule shall be given to each applicant at the time of the Pre-Design Meeting. Review fees to the Oquirrh Mountain Ranch DRC shall be paid upon commencement of Step 2, as described above.

Sidebar text:

**For a list of items to include for each review, please see the Design Review Checklist in Appendix 6.4.**



## CHAPTER 3 – Site Planning Guidelines

### 3.1 PURPOSE AND OVERVIEW

The site planning guidelines are a reference to assist developers, home builders, City officials and homeowners in understanding the goals and objectives for development within Oquirrh Mountain Ranch. These guidelines complement the Eagle Mountain City Development Code and provide design strategies and examples of potential solutions for the economically and aesthetically successful development of Oquirrh Mountain Ranch.

These guidelines will be utilized during the design review process to encourage the highest level of design quality while providing the flexibility necessary to encourage creativity on the part of individual project designers and developers. The site planning guidelines are general in nature and should be interpreted with some flexibility in their application any specific development parcel within Oquirrh Mountain Ranch.

### 3.2 GENERAL PLANNING STANDARDS

#### 3.2.1. Principles of Community Design

Community Design is the integration of the site, architecture, and landscape improvements within the context of the overall Oquirrh Mountain Ranch Master Plan. The intent of this section is to protect and enhance open space areas as a central element of the community while encouraging creativity and quality development of the built environment. The inherent topographic character of Oquirrh Mountain Ranch creates opportunities for a wide variety of patterns and densities of development over much of the site while preserving and featuring the surrounding hillsides that define it.

The intent of community master design principles is that Oquirrh Mountain Ranch be composed of a well-connected series of neighborhoods, each defined by a unique character and set of amenities. These neighborhoods, as the fundamental building blocks of Oquirrh Mountain Ranch, may be composed of residential lots or commercial, mixed-use or civic development parcels, blocks, parkways and collector streets, parks and open spaces.

##### 3.2.1.1 *Neo-Traditional Neighborhoods*

Neo-traditional neighborhoods are compact, vibrant, pedestrian-oriented developments that provide a variety of uses, diverse housing types, and are anchored by a central public space or civic activity.

The following elements are common characteristics of a neo-traditional neighborhood:

- The neighborhood has a discernable center. This is often a square or a green, or may be a busy or memorable street corner.
- Most of the dwellings are within a five minute walk of the neighborhood center or a significant public space.
- There are a variety of dwelling types interspersed with each other – e.g. single-family houses, twin homes, rowhouses, live-work units, and apartments – so that younger and older people, singles, and families of various economic levels may find a place to live in the neighborhood.
- Certain prominent sites at the termination of street vistas or in the neighborhood center are reserved for civic buildings, larger homes, or parks.
- Streets are places for people, not just cars. Streets are relatively narrow and shaded by rows of trees.
- Well-connected trails and sidewalks connect neighborhood destinations, encouraging walking.

- Buildings are oriented toward the street, with vehicular access can be served by an alley.
- Parking lots are screened with vegetation or placed behind buildings.

### **3.2.1.2 Conventional Neighborhoods**

Conventional residential neighborhoods make up the bulk of the community. As development feathers out from the neo-traditional centers, the neighborhoods will become more organic in form, fitting in with the topography found in these areas. Although the neighborhoods will have a "looser" design, several of the principles of neo-traditional development remain relevant: Views should be anchored with significant architecture, landscape features or views; streets should be walkable and inviting to pedestrians; parks should be located within easy access to every home; and homes should address the street. Alleys are much less common in these neighborhoods, if they are present at all. Nevertheless, garage doors should not dominate the view of a home or lot.

Within Oquirrh Mountain Ranch, conventional neighborhood forms will predominate along the edges of the valleys, along the sloping areas and hillsides.

The following elements are common characteristics of a conventionally designed neighborhood:

- The pattern of streets tends to follow topography and natural features present on the site.
- Most of the dwellings are within a five minute walk of a park or public space.
- There may be a variety of dwelling types interspersed with each other – single-family houses, twin homes, rowhouses, live-work units, and apartments.
- Prominent sites at corners or the termination of street vistas have larger homes or parks.
- Streets are places for people, not just cars. Streets are relatively narrow and shaded by rows of trees.
- The streets form an inter-connected network to the extent permitted by topography and natural features, dispersing traffic and providing at least two vehicular routes to most destinations.
- Well-connected trails and sidewalks connect neighborhood destinations, encouraging walking.
- Buildings are oriented toward the street but their garages are visually minimized.
- Parking lots are screened with vegetation or placed behind buildings.

## **3.2.2 Site Planning**

### **3.2.2.1 Neighborhood Character and "Uniqueness"**

Each neighborhood in Oquirrh Mountain Ranch should have its own identity. Opportunities for neighborly interaction and casual encounters are encouraged whenever possible. Neighborhood gathering places and parks are placed within an easy walk of every home, and provide the opportunity for easily-supervised play for young children and quiet common areas for adults to socialize. A network of streets, parks and open spaces promotes the freedom of movement for pedestrians and helps to stitch together the various neighborhoods in the community.

In order to create and define authentic and unique neighborhoods, it is important to incorporate the following principles:

- Neighborhoods should be distinguishable, visually as well as by name.
- A mix of architectural styles, massing, and form throughout each neighborhood and within each block enhances the style of the neighborhood.
- Architecture shall define streetscapes and parks.
- Building elevations, setbacks, styles, and massing shall be used to create variation and interest along thoroughfares.

### **3.2.2.2 Lot and Street Patterns**

Blocks may vary greatly in size and shape due to specific conditions of an individual neighborhood. Small blocks are generally desirable to provide the greatest amount of pedestrian connectivity; however, larger blocks are acceptable if they are broken up by greenways or pedestrian paths to provide the desired connections. Generally and where not impractical due to topography, blocks are encouraged to be no longer than 600 feet without some kind of mid-block pedestrian way.

On straight streets, landscaped medians, "knuckles", and/or "eyebrows" with landscaped islands shall be introduced to limit the length of straight stretches. Generally and where not impractical there should be no more than twelve homes in a row should occur without a change in the orientation of the road center-line (i.e. curve, kink, or intersection).

### **3.2.2.3 Sidewalk/Trail Locations & Neighborhood Connectivity**

A comprehensive system of non-vehicular trails and sidewalks accessing the neighborhoods supports the importance of connectivity. Where practical all streets should have a detached sidewalk on both sides of the street that connects every residence or business with the community trail network to support non-vehicular access and recreation throughout Oquirrh Mountain Ranch. Attached sidewalks, or sidewalks on one side of the street only, may be provided if this does not adversely affect pedestrian connectivity and specific site conditions make detached walks or dual walks impractical or unnecessary.

Trails and trailheads should be clearly marked with directional and/or informational signage, as described in Chapter 3.5. The locations of the primary trails and trailheads are identified on the Open Space Plan (See Figure 5.3).

The minimum width for a sidewalk is 4 feet. Sidewalks which directly abut curbing are discouraged, however in the event a sidewalk directly abuts curbing, the sidewalk shall be a minimum of 5 feet. Sidewalks may need up to an additional 2 feet of width if they directly abut fences, walls and buildings.

### **3.2.2.4 Ridgelines and View Preservation**

Oquirrh Mountain Ranch is surrounded by dramatically sloping topography, with ridges surrounding the development. From the site, there are also panoramic views toward the Oquirrh Mountains. Care should be taken during the site planning process to ensure the preservation of existing sightlines and "framing" of key views. The following principles should be used:

- Use architecture to "frame" view corridors and anchor key views.
- Enhance and preserve existing key views by orienting streets toward views.
- Don't "build out" the views.
- Place parks and vistas to capture key views.
- Views add value and desirability to the neighborhood.

### **3.2.2.5 Climatic Conditions: Solar Orientation and Wind Patterns**

Homes and buildings in Oquirrh Mountain Ranch should be oriented, to the extent possible, to take advantage of the natural climate, so that a majority of primary living spaces receive direct sunlight for the daylight hours, and take advantage of the prevailing wind patterns.

- Dwellings should be positioned to minimize the impact of shadows on adjacent properties, to the extent possible and reasonable.
- Site design should utilize building forms, natural landforms and landscaping to take advantage of prevailing summer breezes and winter sun, and to serve as buffers against adverse winter wind conditions and summer sun.

### **3.2.2.6 Sustainability: Best Practices and Goals**

The Oquirrh Mountain Ranch Master Plan has been developed to take into account the context of its natural surroundings and environment. To promote the long-term health and welfare of the community, development within Oquirrh Mountain Ranch should incorporate sustainable features whenever possible. Sustainable development principles include:

- **Heat Island Reduction:** Limit paved areas to the minimum amount necessary, provide street trees along all streets to shade large expanses of paving and provide canopy trees in parking lots to shade parking areas.
- **Connectivity to Community Bicycle/Pedestrian Network:** Provide access to trailheads within 1/4 mile of each home and business to encourage alternative modes of travel for short trips.
- **Storm Water Management/Aquifer Recharge/Bioretenion:** Where topography allows, encourage bioswales and filter strips to intercept draining water, slowing the water to allow for sediment dissipation and water infiltration back into the ground.
- **Construction Waste Management:** Set up and maintain construction waste management areas that encourage the separation of construction debris and support recycling of reusable materials.
- **"Built Green" Architecture:** Encourage the design and construction of buildings that utilize green building practices and may be certified by the U.S. Green Building Council.
- **Water Use:** Encourage drip irrigation and the use of appropriate "low-water demand" landscape plants to reduce water consumption for landscaping.
- **Light Pollution Reduction:** Protect the night sky while providing a safe and maintainable lighting package within the community by requiring full-cutoff fixtures and limiting the quantity of fixtures used
- **Local Food Production:** Encourage the establishment of community garden plots to promote community-based and local food production to minimize the impacts from transporting food long distances and increase direct access to fresh food.

### 3.2.3 Site Improvements

#### 3.2.3.1 Grading, Erosion Control & Retaining Wall Design

As neighborhoods within Oquirrh Mountain Ranch are developed, some grading of the site will be necessary. While grading is necessary, it should be sensitive to the native environment, and overlot grading or mass grading of an entire neighborhood is discouraged. The following principles shall be employed during the development of Oquirrh Mountain Ranch:

- Significant topographic features should not be "graded out." Consistent with the goal of enhancing the natural environment at Oquirrh Mountain Ranch, grading should strive to mimic the natural lay of the land.
- Grading and site design shall protect existing trees to the greatest extent possible.
- During construction, erosion control measures such as erosion fences shall be used to minimize erosion.
- Where retaining walls are necessary or desired, they should be an earth-tone color that blends in with the environment.
- Where retaining walls higher than five feet are necessary, they should be stepped at regular intervals, rather than one large monolithic wall.

#### 3.2.3.2 Storm Water/Drainage Management

Development should minimize storm water runoff and necessary storm water systems while using the most current technology to improve the quality of storm water before it reaches natural systems that may be affected by poor water quality. This philosophy reduces infrastructure costs, increases ground water recharge and improves the environment.

- Site drainage shall be compatible with adjacent property drainage and in accordance with the overall master drainage plan for Oquirrh Mountain Ranch. Developers and owners are

responsible for controlling the drainage resulting from development and may not direct water onto an adjacent property, unless such a diversion is located within an established drainage easement or within an approved drainage report.

- Excess run-off from the site shall be minimized with sites graded to provide positive drainage away from buildings.
- Water from parking lots, roof drains, and other areas should be consciously directed to landscape areas that could benefit from the additional water rather than piping it off the property, thereby improving water quality by filtration through landscape materials.
- Drainage shall be conveyed along streets, drives and swales along property lines, or in open space corridors.
- Drainage will be sheet flow and surface drained where possible, however some below-grade drainage using storm water piping and culverts may be required.
- Surface drainage systems and detention/retention ponds shall be irregular in plan and graded to create an aesthetically pleasing character that mimics natural landforms. Side slopes shall vary.
- Drainage shall be directed to natural or improved drainage channels, or dispersed into shallow sloping planting areas for retention.
- Storm drainage shall not connect into sanitary sewer systems.

If properly designed and engineered, storm water detention areas may function as recreational amenities (i.e. open fields, play fields, ball courts) for the community when they are not detaining water. This use may offset additional park land required within a subdivision.

### **3.2.3.3 Easements & Utilities**

Utility and drainage easements facilitate the conveyance of storm water and the installation and maintenance of public and private utilities. No site improvements, or landscaping that may result in damage to or interference with utilities or drainage will be permitted within these easements. Grading may be permitted within these easements if it does not interfere with drainage or the maintenance of utilities. Fencing may be permitted in easements with permission of the easement holder and approval by the Oquirrh Mountain Ranch DRC. If it is necessary to remove fencing to work inside a utility easement, the easement holder may do so, and has no responsibility to repair or replace such fencing.

Connections to all utilities including water, sanitary sewer, gas, electricity, telephone and cable television shall be installed underground from existing trunk lines except where the lines daylight at transformer and pedestal locations. Utility connections from main service lines to individual buildings shall be located to minimize disruption of the site and existing vegetation. Transformers, pedestals and pull boxes should be located out of public view or screened as much as possible to minimize their appearance. Utilities should be located in alleys when possible.

### **3.2.4 Neighborhood Types**

There are a variety of residential land uses found throughout Oquirrh Mountain Ranch. An important goal of these guidelines is to ensure compatibility of these land uses and cohesiveness throughout the entire development and create functional and visual variety along streets and the public realm. A range of housing styles creates varied looks but cohesive neighborhoods.

#### **3.2.4.1 Single-family Detached Neighborhoods**

All single-family detached subdivision plans shall be evaluated using the guidelines contained in this section with emphasis on the following criteria:

- Proportional mix and location of different home types
- Placement of the dwelling unit on the lot

- Location and orientation of garages
- Preservation of ridgelines
- Preservation of significant views
- Preservation of natural features (e.g., drainages, native vegetation, sloping hillsides)
- Treatment of walls and fences

#### *Product variation per neighborhood*

The creation of interesting, diverse and distinctive neighborhoods by integrating varying lot types, home sizes and architectural character in a harmonious relationship is encouraged. A variety of home sizes in a single neighborhood addresses the needs of different households. The diversity of building types and home sizes not only creates a more appealing neighborhood, but also promotes increased housing opportunities to a variety of ages and incomes, promoting a socially vibrant community.

The following criteria shall be used to ensure a variety of lot types throughout a neighborhood:

- Within a defined block, where ten or fewer lots comprise the block, only one lot size shall be required, although more than one size may be provided.
- Where a block has more than 10 lots, a minimum of two lot sizes is encouraged. Lot size changes should be in the 20% range.

In addition to the above, the developer/builder shall provide at least three distinct floor plans and elevations to create variation as seen from the street (including the following: garage placement, front porch location, placement of doors and windows, change in color and/or materials).

#### *Diversity and Distribution of Home Types*

Buildings physically define streetscapes while encouraging neighborhood sociability. Each streetscape should have a unique character:

- Special attention shall be given to the mix of architectural styles in creating streetscapes.
- Streetscapes shall be visibly pleasing in terms of building scale, proportion, pattern, balance, material composition and color palette.
- Streetscapes shall respond to the public realm while creating a safe and comfortable environment for the pedestrian.

#### *Varied Lot Width and Side-yard Setbacks*

Making some lots wider and some narrower than the average is encouraged. This also allows for the placement of different shapes and sizes of homes as well as variations in open space dimensions. On narrow lots, a variation of only two to four feet can make a perceptible difference.

#### *Varied Garage Placement and Orientation*

Lot size should permit some garages to be side-loaded from the street in order to break up the monotony of a line of garage doors being placed parallel to the street. Alley-accessed, rear loaded garages (either attached to the dwelling or detached) are encouraged where possible. Careful consideration shall be given to the location of garages and driveways at corners so that a side load configuration does not cause conflicts with automobile traffic circulation at those corners. Placing the side loaded garage on the interior of the corner lot is preferred. Garage setbacks shall allow driveway parking that keeps the sidewalk clear of vehicles (15 feet minimum, 18 feet preferred).

#### *Home Placement and Garage Access*

Access should be carefully considered when placing each home on the lot/building site because of the close relationship between the access drive, building footprint, grade of the street and individual lot drainage. Driveway location and grade typically will dictate the finished floor elevation of the home.

Recommended driveway grades are 2-8% within ten feet from the sidewalk or garage, and up to 12% on all other portions of the driveway, where applicable. While these grading standards should be met whenever possible, setting elevations for proper drainage should take precedence.

#### **3.2.4.2 *Single-family Cluster Neighborhoods***

Clustering of buildings is a unique site planning opportunity at Oquirrh Mountain Ranch. Cluster developments may include detached residences, attached residences, or both, as site constraints permit. Clustering homes preserves open space, allowing these open areas to be aggregated into one or more larger spaces for parks, community gardens or "view corridors" that are for use by all members of the development. Often, these open areas are held "in common", and are maintained by a sub-master homeowners' association of which all residents are members. Clustering units is a useful technique for planning areas that are constrained by topography or other site features that make traditional single-family lot development undesirable.

The following design techniques should be implemented whenever possible:

- Create a hierarchy of open spaces with small, intimate spaces that relate to unit entries.
- Use reduced-width private drives to diminish impervious coverage on the site.
- Create small parking courts with direct access to unit entries rather than large perimeter parking lots.
- Accommodate guest and resident parking with parallel parking lanes and bays along drives and neighborhood streets where possible.
- Preserve unique site elements and open spaces.
- Provide amenities and outdoor recreation areas.
- Use a variety of building plans to add interest to site plan.
- Vary building orientations to avoid the monotony of "barracks-like" site configurations.

#### **3.2.4.3 *Single-family Attached Neighborhoods***

Single-family attached homes provide an alternative to traditional detached homes, and are encouraged in specific areas within Oquirrh Mountain Ranch. The construction of twin homes (duplexes), townhomes and rowhomes lends diversity to the community, providing additional home styles and appealing to buyers who may not want a traditional single-family home.

The following design techniques should be considered and implemented whenever possible:

- Vary front setbacks to avoid a long row of "lined up" buildings.
- Place the front doors of homes along the streets, to define the street and create a pedestrian-friendly environment.
- Use staggered and jogged unit planes within the same structure to create an interesting street scene.
- Use materials changes on facades to reduce monotony.
- Include modified units and reversed building plans to add variety.
- Vary building orientations to avoid the monotony of "barracks-like" site configurations.

#### ***Clustering Buildings***

Attached Homes may be clustered to respond to site constraints and preserve open space for use as park, common lawn and/or gardens.

#### ***Home Placement and Garage Access on lots and in relation to streets & alleys***

Front-loaded row homes are discouraged, as they often lead to a garage-dominated streetscape that is hostile to the pedestrian environment and decreases property values. When possible, use alleys to provide access to rowhomes and townhomes.

#### **3.2.4.4 Multi-family Neighborhoods**

Multi-family developments add an important component to the home types available at Oquirrh Mountain Ranch. Multi-family developments further add diversity to the community, and should be designed so that they are integrated into the fabric of Oquirrh Mountain Ranch.

The following site planning techniques should be implemented whenever possible:

- Multi-family communities should be integrated into their surroundings. Developments that are surrounded by high walls, privacy fencing and rows of garages and/or carports should be avoided.
- Buildings with long unbroken facades and box-like forms devoid of architectural interest are not permitted.
- Building footprints and facades should be broken-up to provide visual relief, and give the appearance of a collection of smaller structures.
- To the extent possible, each of the units should be individually recognizable through the use of balconies and other projections, setbacks, and an appropriate rhythm of windows and doors.
- Vary front setbacks to avoid a long row of "lined up" buildings.
- Front doors of homes should be visible from the street or drive leading to the building, creating a pedestrian-friendly environment.
- Use material changes on facades to increase visual interest.
- Include modified units and reversed building plans to add variety.
- Vary building orientations to avoid the monotony of "barracks-like" site configurations.
- Preserve unique site elements and open spaces.
- Provide for amenities and outdoor recreation areas that are visible from residences, providing natural surveillance.

#### ***Support Facilities and Service Areas***

Support structures within multi-family residential neighborhoods such as laundry facilities, recreation buildings and/or sales and leasing centers, should be consistent in architectural design and form with the rest of the development. Sales and leasing centers, possibly combined with lifestyle amenity structures, may be prominently located at the primary entrance to the development, but other service areas and support facilities (such as laundry facilities, community rooms and recreation buildings and outdoor recreation areas) should be placed in convenient locations in the interior of the residential neighborhood to minimize visual impacts on adjacent neighborhoods.

#### ***Screening for Loading and Trash Collection***

Loading areas and trash collection areas should be screened with landscaping, walls, or both to reduce their impact on the community and adjacent neighborhoods. In addition, dumpsters and/or trash compactors should be carefully located to avoid being placed directly in one's line of sight upon entering a neighborhood. Concealing or obscuring air conditioning units and utility panels is also strongly encouraged.

#### ***Parking***

Parking lots shall be designed to be safe, convenient and attractive, but should not visually dominate a neighborhood. It is preferred that smaller parking lots should be conveniently distributed throughout a project site. Perimeter parking lots shall be avoided. Perimeter parking areas provide a poor image of a neighborhood and often function as barriers between the multi-family neighborhood and the surrounding community.



### **3.2.4.5 Institutional Development Areas**

Institutional areas include churches, schools, fire stations, libraries, recreation facility buildings, and buildings for other public uses.

#### ***Churches***

Churches should be integrated into the neighborhoods in which they are located. When built, the church should occupy significant places in the community and be visual “anchors.”

The following site planning techniques shall be followed:

- Building architecture, and not parking lots, should dominate the site.
- The main entrance should face the street.
- When possible, sharing parking or open areas should be encouraged.
- Parking, loading and service areas shall be screened with vegetation, berms, fencing, or a combination of these elements.
- When possible, churches should be located along the trail network to increase connectivity with the surrounding neighborhoods.

#### ***Schools & Other Public Uses***

Schools, libraries, public safety, emergency services and other public-use facilities will be located in Oquirrh Mountain Ranch to support the needs of the community’s residents. These uses are highly-visible components of the community, and should strive to attain a high level of design quality and compatibility with other structures in the community.

The following site planning techniques shall be followed:

- Building architecture and landscaping shall fit into the overall character of Oquirrh Mountain Ranch.
- Parking, loading and service areas shall be screened with vegetation, berms, fencing, or a combination of these elements.
- Parking lots shall be encouraged to include landscaping islands and pedestrian walkways to “break up” large expanses of asphalt.
- The main entrance to a building should face the primary street on which the building is located.
- Schools and libraries are encouraged to be located along the trail network to increase connectivity with the community.

#### ***Recreation Facility Buildings***

Community recreation buildings will be located in Oquirrh Mountain Ranch neighborhoods, providing meeting space, gathering areas, and play areas for the residents of the community. These buildings add an amenity to the neighborhood and should be designed to be well-integrated into the fabric of Oquirrh Mountain Ranch.

The following site planning techniques should be considered and implemented whenever possible:

- Locate recreation buildings inside parks or along the trail system so they are easily accessible to the community.
- Where possible, anticipate the potential for shared uses of the gathering and parking areas, and locate facilities adjacent to schools, churches or other public areas.
- The front doors should face the primary street on which they are located.

- Architecture shall be compatible with the surrounding neighborhood.
- Architecture and landscaped spaces should be the focus of the site, and parking areas must be screened with vegetation or placed to the rear of recreation facilities.
- Shared parking is encouraged with parks, churches, commercial areas, and schools.
- Loading and service areas shall be screened with vegetation, walls, or fencing.

### 3.3 VEHICULAR CIRCULATION & STREETScape DESIGN

#### 3.3.1. Street Patterns

The circulation system for Oquirrh Mountain Ranch will consist of a hierarchy of streets of various sizes, as well as off-street trails intended for pedestrians, equestrians, and bicyclists. The overall intent of the circulation system is to accommodate both traditional and alternative forms of movement within and through the community.

A network of parkways and community collector streets provides efficient access between the individual neighborhoods, community parks, and other areas in Oquirrh Mountain Ranch. Within individual neighborhoods, neighborhood collectors and local streets are intended to move traffic at modest speeds and provide vehicular access to each home or business. All neighborhood collectors and local streets have detached sidewalks that connect each home or business to each other and the off-street trails of the community.

Streets should be laid out according to the following principles:

- Long straight streets shall be avoided. Narrower streets reflecting a more "human scale" shall be encouraged.
- Streets and pathways should lead directly to visual anchors and/or focal points when possible.
- Alternative pedestrian connections shall be provided to public areas and mixed-use developments, eliminating the pedestrian and vehicular conflict.
- Circulation patterns shall be designed to direct vehicles to entrances and/or exits from the neighborhoods. The entry/exit function is a critical means of defining a sequence of movement and creating a sense of "arrival" and "passage" through Oquirrh Mountain Ranch.
- Traffic calming measures may be implemented, as needed, on collector and residential streets, such as, but not limited to, small roundabouts, street narrowing, medians, pedestrian tables, or other techniques.

A general circulation plan for the community is included on the Master Plan maps (See Figure 5.2 - Roadway Plan). The approved street cross-sections for Oquirrh Mountain Ranch shall be used for any development within the community (See Figures \_\_\_\_ - \_\_\_\_).

#### 3.3.2. Straight and Curved Street Patterns

Straight and relatively narrow streets are most efficient for densities of four or more dwelling units per acre and can be used effectively to create a traditional neighborhood image. These streets should not be longer than 10-12 lots in a row (approximately 650 to 700 feet long) before the centerline of the street is interrupted. Grid street patterns are located predominately in the flat land areas in the center of the valleys.

Modified grid and curvilinear street patterns are located predominately in the sloping areas of the site. These street types respond to the topography of the site.

#### 3.3.3. Community Entries

Community entries distinguish the entrances into the Oquirrh Mountain Ranch from other adjacent and nearby master planned communities. They provide the resident and visitor with a sense of "arrival" and a point of reference in the community-at-large. Entries should provide an open window into the project which highlights landscaping, neighborhoods and amenities located within the community, recreational facilities, and directional information. Special attention should be given to hardscape and landscape treatments that enhance the overall project image at entries.

#### **3.3.4. Neighborhood Entry Drives**

Each neighborhood shall have a distinctive entry that announces "arrival" into the neighborhood, and all entry features shall have consistent features as designed and determined by the Oquirrh Mountain Ranch DRC. Neighborhood entry monuments and signature landscaping shall be used at each entry from the community parkways.

The principal vehicular access into a mixed-use development, single-family attached or multi-family neighborhood should be through an entry drive rather than a parking aisle. These entry drives should have minimal or no parking. Where parking is necessary, angled or parallel parking is preferred. 90-degree parking shall not be permitted along the entry drives of mixed-use developments, single-family attached or multi-family neighborhoods.

#### **3.3.5. Medians and Roundabouts**

The location and configuration of proposed roundabouts and medians shall be designed by a licensed transportation engineer.

Medians and roundabouts are used largely to:

- Reduce motor vehicle speeds
- Increase capacity level
- Increase safety
- Reduce noise and air pollution
- Provide landscaping interest

The City Engineer shall approve the design of roundabouts. On principal streets, roundabouts should be sized larger to safely and efficiently accommodate the desired design speed and volume of traffic. When used in neighborhoods, roundabouts may be of a smaller diameter, with higher curbs to safely slow traffic. All roundabouts shall be designed to accommodate service and emergency vehicles and moving vans.

#### **3.3.6. Cul-de-Sac Connections**

Where cul-de-sacs are used, openings should be provided at or near the end of cul-de-sacs to provide views into neighborhoods and provide pedestrian connectivity to open space and paths/walkways. As street connectivity is encouraged throughout Oquirrh Mountain Ranch, the use of cul-de-sacs shall be limited to areas where necessary due to specific site or topographical concerns. Cul-de-sacs are discouraged in neo-traditional neighborhoods.

### **3.4 PARKING**

Tandem parking in driveways and garages shall be permitted, and may be counted toward residential parking requirements.

#### **3.4.1 Parking Lots and Structures**

While it is necessary to accommodate vehicle parking, parking lots should not visually dominate a development. Large parking lots with long, monotonous drive lanes flanked by 90-degree, pull in parking, and parking lots without landscaping shall not be permitted. As an alternative to a large parking lot, parallel or angled parking along streets and drives is encouraged.

Where parking structures are constructed, they should be designed to complement the architecture of their primary use.

Parking shall be provided at the level required for a specific use by the City of Eagle Mountain Development Code.

### **3.4.2 Parking Lot Landscaping and Screening**

Parking lots shall be landscaped to reduce their visual impact and to shade parked cars and pedestrians. Parking lots shall be screened from view from the street and adjacent uses using plant material, berms, landscape walls or a combination of these elements.

Landscape islands shall be provided at a rate of at least one 9'x18' area per fifteen cars. No more than twelve (12) parking spaces may be in a row without a landscape island.

### **3.4.3 Bicycle Parking and Motorcycle Parking**

Convenient bicycle and motorcycle parking shall be provided for all commercial and multi-family developments.

### **3.4.4 Temporary Parking Lots**

Temporary parking lots may be constructed and approved by the Oquirrh Mountain Ranch DRC.

## **3.5 PEDESTRIAN, BICYCLE AND OTHER NON-MOTORIZED CIRCULATION**

Off-street trails and sidewalks are a significant community amenity and shall be provided throughout Oquirrh Mountain Ranch to promote recreational opportunities and alternative modes of transportation. This system of sidewalks and trails will also provide connectivity to the City's system of regional trails, further expanding the system and providing additional destinations. The location of the principal off-street trails and trailheads are indicated on the Oquirrh Mountain Ranch Master Plan (See Figure 5.1).

The network of sidewalks and trails will be developed according to the following principles:

- Where possible neighborhoods and developments shall provide connectivity with the overall pedestrian and cycling network to form a comprehensive system within Oquirrh Mountain Ranch.
- Equal access in a manner that integrates handicapped-accessibility with ordinary accessibility rather than separate systems shall be provided where permitted by terrain and trail type.
- Where possible connections to the system of trails and sidewalks shall be made to every home, business, publicly-accessible destination (i.e. school, church, library), park and recreational amenity within Oquirrh Mountain Ranch.

### **3.5.1 Walkway and Sidewalk Design**

Walkways for pedestrians should connect people to their destinations in a pleasant, safe and convenient manner. Where possible a paved walkway shall connect the street adjoining the property to each home or building in Oquirrh Mountain Ranch. Walkways within the community shall be located and aligned to directly and continuously connect points of pedestrian origins with pedestrian destinations.

Pedestrians and bicycles shall be separated from vehicles where possible along principal routes. Where complete separation is not possible, potential hazards shall be minimized through the use of techniques such as:

- Special paving
- Grade separations
- Pavement markings
- Signs, striping and bollards
- Street width reductions at crosswalks and pedestrian refuge areas
- Traffic calming features (i.e. speed bumps, speed tables)
- Lighting to clearly delineate pedestrian areas at night

Paving materials shall be easily maintained, non-slip, and accessible to persons with disabilities. Special paving materials such as interlocking brick, color concrete pavers, colored and textured concrete, and other similar materials are encouraged for pedestrian gathering areas.

### **3.5.2 Bike Lanes**

On-street bike lanes are recommended on all parkways and collectors where an adjacent off-street trail is not provided. On-street bike lanes are encouraged to connect neighborhoods with the community trail network and provide neighborhood connectivity.

Where required or provided, bike lanes shall be delineated on the pavement with a white painted or thermoplastic line to widths currently prescribed by AASHTO standards.

### **3.5.3 Road Crossings/Crosswalks**

Road crossings shall be adequately signed for automobiles and pedestrians. A stop or yield sign should be placed on both sides of an at-grade crossing, and warning signs should be placed well ahead of the crossing for vehicular users. These signs should be placed far enough in advance to provide adequate warning for oncoming motorists.

Roadways at trail crossings should be striped with standard pedestrian crosswalk striping or enhanced paving.

### **3.5.4 Recreational Trails**

Recreational trails are a significant amenity within the Oquirrh Mountain Ranch community. These trails connect with the sidewalk system in each neighborhood, and form a network that connects every home and business with parks, schools, churches, recreation centers, and open space in the community.

ATVs and other motorized vehicles (except emergency and maintenance vehicles) are not permitted to use the trails within Oquirrh Mountain Ranch.

Trails may be paved with a variety of materials such as asphalt, concrete, crushed gravel, and bark/shredded wood, depending on the anticipated intensity of use and the trail's location. Additionally, trails may be left natural in undeveloped areas. A final determination on the surface to be installed shall be approved by the Oquirrh Mountain Ranch DRC.

### **3.5.5 Trailheads and Trail Connectivity**

Trailheads are an important element in the trail system, marking an entry point to the trail system at Oquirrh Mountain Ranch and providing information about routes, trail connections and amenities available along the system. As these trailheads lay the foundation for a user's overall impression of the trail system, they should be well-designed and located in highly visible locations, usually within parks or other public places. Trailhead facilities shall be programmed and designed to meet the needs of the community. Needs specific to a

neighborhood should be considered by developers when determining the size and programming needs of each location.

#### **3.5.5.1 Regional Trails**

A regional trail extend through Oquirrh Mountain Ranch, connecting to the City trail system along Pony Express Parkway. Regional trails should have a natural surface of gravel or crushed rock, and should not be paved.

#### **3.5.5.2 Community Trails**

Community trails provide connections between neighborhoods and community destinations, and along the parkways and collector streets throughout Oquirrh Mountain Ranch. These trails also provide access points beyond the community and to the City's trail system. These trails shall be a minimum of ten feet wide and constructed of concrete or asphalt.

#### **3.5.5.3 Neighborhood Trails**

Smaller neighborhood trails, and other "connector" trails connect areas within individual neighborhoods and provide access to regional and community trails. These trails shall be a minimum of six feet wide. These trails may be constructed of a soft surface, such as crusher fines or decomposed granite material. However, connector trails providing connections within parks to the regional and community trail system shall be paved with a hard surface material.

### **3.6 PARKS & OPEN SPACE**

Parks shall be designed to express the character of its location and to distinguish between different park types while relating to the overall vision of Oquirrh Mountain Ranch. Park programming shall respond to the individual park size, type, context, topography, and the potential users. All parks shall be connected to the network of trails and sidewalks to ensure easy and safe access to residents and visitors.

The locations of the major parks and open space are indicated on the Master Plan (See Figure 5.3 - Open Space Plan). In addition to the parks indicated on the Master Plan, individual neighborhoods may also include smaller pocket parks, courtyards and other gathering areas to provide required park space and amenities.

Wherever practical, all parks and park facilities shall incorporate sustainable design practices and materials that will enhance the long-term viability and success of the park system within Oquirrh Mountain Ranch. Sustainable practices shall include bio-swales to improve the quality of storm water runoff, preserving native topography and vegetation, xeriscape planting principles, water conservation irrigation practices, energy efficient designs incorporating solar, wind, or photovoltaic resources, or any other means deemed appropriate and cost effective.

Where detention facilities are provided in parks, these facilities are encouraged to be designed to function as useable park land when not retaining water.

#### **3.6.1 Community Parks**

The community parks are designed to support a wide variety of active and passive uses and to serve the entire community. These parks also serve as focal points and destinations for the recreational trail system.

The range of possible community park uses may include:

- Recreational ball fields/courts (softball, soccer, baseball, tennis, basketball, etc.)
- Recreation buildings

- Playground areas & picnic shelters
- Gathering areas
- Trailheads
- Passive use spaces
- Dog parks
- Restored or preserved open space areas
- Detention/water quality facilities
  - Pools or water features

### **3.6.2 Neighborhood Parks**

Neighborhood parks are smaller than community parks, and are designed to serve the residents of an individual neighborhood, although these parks may be used by all residents and visitors of Oquirrh Mountain Ranch.

The range of possible uses may include:

- Recreational ball fields/courts (softball, soccer, baseball, tennis, basketball, etc.)
- Informal ball fields for "pick-up" sports
- Recreation buildings
- Playground areas & picnic shelters
- Gathering areas
- Trailheads
- Passive use spaces
- Community garden spaces
- Detention/water quality facilities

### **3.6.3 Pocket Parks**

Pocket parks should be designed to accommodate the needs of the surrounding neighborhood and may include a variety of programming elements such as:

- Children play areas and tot lots that are separated from each other
- Open space for casual recreation
- Seating and picnic areas
- Community garden spaces

### **3.6.4 Community Open Space**

The broad expanses of open space are a key component of Oquirrh Mountain Ranch, lending beauty to the site, providing relief from the built environment, "anchoring" the residential community to the native environment. The preservation of open space is a key tenet of the Oquirrh Mountain Ranch Master Plan. Open space will primarily be left undisturbed, but may be used for trail corridors, drainage ways, detention ponds and "native parks."

Native parks help to balance preserved and restored natural areas and may provide for water quality treatment and storm water detention. These parks may also include areas designated for low-impact active uses and passive recreational uses such as trails and seating/viewing areas.

The range of possible uses in Community Open Space includes:

- Community and neighborhood trails
- Frisbee golf or other recreational uses
- Detention/Retention facilities
- Native parks
- Shade structures
- Trailheads

- Gathering areas
- Seating areas
- Viewing towers

Open space areas that are located within a development parcel will be left undisturbed, or when disturbed, planted with native or regionally adapted plant materials. Open space areas will be primarily unirrigated (except as necessary to establish plant material).



## CHAPTER 4 – Design Standards

### 4.1 PURPOSE AND OVERVIEW

The following design standards have been developed to support the guiding principles of the **Oquirrh Mountain Ranch Community Design Guidelines** and specifically to ensure a cohesive "identity" within the community. Consistency in the design image of Oquirrh Mountain Ranch is crucial to its identification as a special, unique and desirable place to live. All elements that are visible to the public are considered part of the community's overall identity and, therefore, shall be subject to review and approval by the Oquirrh Mountain Ranch DRC.

This chapter of the Guidelines applies to all development in Oquirrh Mountain Ranch, and contains special information on performance standards and guidelines for the design of public areas, the exterior treatments of private property, construction practices, landscaping, and maintenance.

In utilizing these Guidelines, one should remain flexible in approach to site design, taking into account the specific characteristics of the site, the nature of the use, and the overall intent of these standards to promote a pleasing and unified environment within Oquirrh Mountain Ranch.

This section is intended to apply to the entire Oquirrh Mountain Ranch Master Plan, however individual neighborhoods within the Oquirrh Mountain Ranch Master Plan may have more stringent requirements that will be required and enforced through neighborhood CCRs.

### 4.2 ARCHITECTURE GUIDELINES

#### 4.2.1 Architecture Overview

These guidelines promote an enhanced level of design. They are intended to assure compatibility between adjacent structures within the community and to guide character and form, using concepts varying from streetscape design to building style and façade detailing.

These Architecture Guidelines apply to all residential dwellings/buildings, commercial and mixed use buildings, and neighborhood community buildings and amenity structures.

#### 4.2.2 Evolving Architecture Guidelines

There may be a substantial length of time between the adoption of these Architectural Guidelines and their use. With this in mind, the Oquirrh Mountain Ranch DRC may need to update portions of these overall guidelines or guidelines specifically tailored to certain neighborhoods. Any updates to guidelines shall supersede these guidelines.

#### 4.2.3 Residential Guidelines

All facets of these Residential guidelines apply to all single-family detached, single-family attached, multi-family and neighborhood community buildings and amenity structures.

##### 4.2.3.1 *Neighborhood relationships*

Oquirrh Mountain Ranch consists of numerous distinct neighborhoods. To promote a shared sense of community amongst these neighborhoods, they need to be connected by common characteristics, including architectural design standards and landscaping themes as well as roadway and trail systems.

### *Streetscape*

Within residential neighborhoods, building form, mass and scale play key roles in developing design continuity and defining "streetscape", or the cohesive view of elevations along a street. The articulation of roof forms and building facades, in terms of proportion, style and textures, provides the foundation for visual interest and variety within the streetscape. Builders are required to carefully combine architectural styles to create neighborhood streets that are united in their character and that are uniquely different from those of other neighborhoods.

- Special attention shall be given to the mix of architectural styles in creating streetscapes. The elevations of buildings along the streets shall be diverse, yet compatible with neighboring buildings. A variety of building massing, roof sizes and forms shall be used to create interest.
- Streetscapes shall be visibly pleasing in terms of scale, proportion, pattern, balance, material composition, and color scheme. If the buildings are related by form, color or texture, the mix is more likely to succeed.
- Concentrating architectural styles or limiting the number of styles on a streetscape or grouping is encouraged in order to create distinct and special places. Elevations on a street may be of the same architectural style, but are encouraged to vary in massing, roof lines, entry features, and architectural detailing.
- Designs shall reflect harmonious architectural styles and consistent quality.
- Usable porches, terraces, and upper level balconies are encouraged to activate the street.
- The architectural style and detailing of garages and other ancillary structures shall be consistent with the principal building's architectural style, colors and materials.

### *Diversity Requirements*

Diversity is a major component of successful streetscapes and neighborhoods. The diversity requirements are the minimum standards that promote the streetscape concepts. The requirements encourage a varied street scene and prohibit disconnected rows of homes built without regard for the neighborhood fabric.

### *Variation Requirements*

#### Single-family Detached and Twinhomes Variation

- If a plan is repeated, a minimum of three distinct elevation styles shall be developed.
- Roof forms must change from one elevation style to another.
- Changes solely of materials or colors do not constitute an independent elevation style.
- Elevation style changes should include **porch** and **bay** designs, window configurations, materials, and detailing.
- Houses sited on three adjacent lots (on the same side of the street) or directly across the street (sharing frontage) shall have different plans and/or elevation styles.
- Preferably, there should be some variation in roof ridge line orientation to the street (i.e. parallel or perpendicular to the street) in order to enhance each streetscape. We suggest ridge line variation once in every three adjacent lots.

#### Townhouse and Multi-family Building Variation

- Townhouse buildings must have a minimum of two unit types within every building. These unit types must be articulated with different façade elements and different window locations.
- If more than 4 buildings are built within a neighborhood, a second elevation style must be introduced. If more than 8, a third style must be present.

#### Color Variation

The use of a variety of paint colors provides an inexpensive manner to add variety to a streetscape and neighborhood.

- In general, 2/3 of a streetscape should have subdued **body colors**, while 1/3 of a streetscape should have stronger **body colors**. "Beige box" color strategy is prohibited. While buildings with beige/brown/tan **body colors** can be appropriate, they must be interspersed with buildings with other color palettes within the streetscape.
- Adjacent Single-Family Detached houses within the same block face shall not have the same color palette.
- Color palettes for townhouse and multi-family buildings shall be varied; no more than two buildings within a block face may have the same color scheme.

#### *Garage Orientation*

Garages shall not dominate or be a repetitious feature of homes within the neighborhood. Flush front load and projecting front load garages are highly discouraged without compensating design elements. Garages accessed from an alley are not required to meet the following requirements.

#### Single-family Detached Garage Orientation

In addition to conforming to the site planning guidelines, single-family detached houses shall comply with the following garage orientation standards:

- Houses sited on any three adjacent lots (on the same side of the street) or directly across the street (sharing frontage) shall have different garage orientations.

#### Single-family Attached Garage Orientation

Front load garages on twin homes and townhouses are discouraged. When front load garages are necessary, they shall follow these garage standards:

- The building must have sufficient design such that the viewer's eye is drawn away from the garage doors. This can be done in many ways, including designing entries as focal points or including interesting materials or additional detailing on the portions of the façade without the garage.
- Each unit must have a building mass (either porch or enclosed space) located 3 feet (3'-0") or more in front of the plane of its garage door.
- There must be a minimum of a 2 foot (2'-0") plane change every two garage bays. (e.g. doors adjacent to double garage doors shall not be in the same plane) and there can be no more than two single garage doors in plane before a plane break.
- Twinhome garage frontage shall not comprise more than fifty percent of the street elevation.
- Garage doors with windows are encouraged. Single car garage doors are encouraged in lieu of double car garage doors.

#### Multi-family Building Garage Orientation

Front load garage design are discouraged, but not prohibited, for multi-family buildings

#### *Porch Requirements*

Front porches help to enliven the street and soften the streetscape and are encouraged on all residential building types. Covered entries are not applicable towards these requirements. For definition purposes porches are a covered area and shall be triple the width of the front door (including the portion in front of the front door entry). Porches are encouraged to have a depth of a minimum of four feet.

#### *Public to Private Transition*

The transition space between thoroughfare and building shall be designed with careful attention to detail, human scale, landscape, and streetscape character.

- All front entries are encouraged to be connected to the street sidewalk with a concrete sidewalk not less than three (3) feet in width. If a front driveway exists, the entry is also encouraged to be connected to the driveway with a three (3) foot sidewalk.
- Buildings, entries, curb-to-entry hardscapes and landscapes, architectural elements and site components should define and enhance the character of the streetscape.
- Where grade permits, residential front entries elevated from the street are encouraged.
- Inviting and functional outdoor living spaces are encouraged.

#### *Alleys*

The design of alley environments serves to unify neighborhoods while providing vehicular access to buildings. All alley projects must be designed in coordination with the Oquirrh Mountain Ranch DRC. In principle, alleys should adhere to the following criteria:

- Alleys should have both variety and pattern in terms of materials and detailing.
- Alleys should be functional and aesthetically appealing.
- Consideration should be given to setbacks, drainage, fencing, lighting, utility screening, etc.
- Alleys shall be appropriately fenced and landscaped.
- Placement of service equipment shall be designed to be as unobtrusive as possible.
- Driveways, where applicable, should be perpendicular to the alley.

#### **4.2.3.2 Exterior Architecture**

Each building shall have high quality, well detailed exterior architecture that promotes neighborhood variety and visual interest while being compatible with adjacent homes.

#### *Building form*

Within neighborhoods, building massing, balance, and scale play key roles in developing design continuity and defining streetscapes. The articulation of roof forms and building elevations in terms of proportion, architectural style, and texture provides the foundation for visual interest and variety along the street.

#### Building Massing and Scale

Building massing is the general building shape and size.

- All buildings shall emphasize at least one primary architectural massing volume. Most buildings should also have supporting secondary forms.
- The mass of buildings should be broken up to reduce the apparent scale, provide visual interest and depth, and achieve a more articulated form.
- Strong and simple forms are encouraged. Overly complex or redundant forms are prohibited (e.g. houses shall not have “telescoping” gables or roof forms lacking a focal form).
- Building mass shall be suitable relative to both lot size and setback requirements.
- Overhangs, prominent porches, covered entries, doors and windows should be used to break up facades and articulate form, as well as to enhance indoor/outdoor site relationships.
- Recessed and projecting building elements should be used to encourage shadow effects. Possibilities include roof overhangs, bay windows, chimneys and covered porches.
- When sloping conditions exist, buildings should be stepped down inclines, anchoring the structures to their sites and creating a natural relationship between the building forms and topography.
- In walkout situations, three-story unbroken masses are prohibited. Three-story elevations shall have a minimum of one vertical plane break and one lower secondary roof form; more are encouraged.
- In no case shall an unbroken plane of a building be longer than 50 feet.
- Building materials shall relate to building massing:

- When planes are broken, materials shall conceptually support the additive nature of the building.
- Masonry wainscoting less than a story tall should be avoided; instead, masonry should be used to highlight one or more of the building masses.
- Dominant building materials should be used with contrasting and complimentary trim materials and colors to preserve contrast and depth.
- Building heights for large buildings should be "stepped-down" toward the edges of structures to aid transitions between buildings and create human scale.
- Buildings shall be scaled so as not to overwhelm or dominate their surroundings.

#### Special Single-family Attached and Multi-family Massing Provisions

Larger buildings have special massing considerations in order to reduce scale and relate to their users. In addition to the general building massing concepts, single-family attached and multi-family buildings shall follow these special provisions.

- Twinhome structures shall be designed such that they appear to be large single-family detached structures from the exterior.
- Townhouse structures shall be designed with either the "Individual Unit" or "Whole Building" massing approach.
- Multi-family building shall be designed using the "Whole Building" massing approach.
- Multi-family stairs shall be integrated with the architecture of the building. They shall not protrude outward from the plane of any elevation.
- Freestanding parking garages shall be limited to a maximum of twelve cars.

#### Individual Unit Approach

Conceptually, the main building mass is broken down and each unit is distinguishable from the exterior. Buildings are designed to a finer scale, with unit articulation similar to that of a single-family house.

- The building massing form shall be broken up with building breaks occurring at every unit or every other unit.
- All units shall not be articulated similarly or be equally balanced within the facade.
- Roof forms are encouraged to have separate roofs or accent roofs relating to the individual units.

#### Whole Building Approach

The building is designed to read as one cohesive mass. Buildings are designed to a larger scale with larger building masses and elements; often, a whole building approach is appropriate for buildings where the entire façade will be viewed at once, such as on a site bordering a park or boulevard.

- Less emphasis is placed on building breaks; it may not be evident from the exterior where individual units are located.
- The main building mass has consistent materials throughout the entire building face.
- The building mass must still be broken down. This can be done without articulating separate units. Roof forms, bays or porches can be used to reduce the building mass; in many cases, bays of adjacent units can be combined to create larger bays.
- Interior units are meant to play a secondary role, and the building has greater articulation at each end.
- In some cases, it may be desirable for 3-plex or 4-plex townhouse buildings to be designed similarly to twinhomes, with the appearance of a large single-family detached structure.

### Visual Balance

Balance and relief between the various forms and elements of a building should provide variety and interest while still contributing to a unified overall image and being complimentary to one another.

- Building designs shall encourage visually heavier and more massive elements at their base and visually light elements above these components. A second story, for example, shall not appear heavier or demonstrate greater mass than the portion of the building supporting it.
- Combinations of one- and two-story building forms are encouraged to promote visual interest, while still maintaining the primary architectural massing element.
- Natural stone and masonry materials are encouraged as visual “anchors” for buildings.
- Vertical and horizontal elements should be used in contrast to one another (e.g. chimneys counterbalancing strong, horizontal facade elements or generous roof overhangs in contrast to strong vertical elements).
- Creative entry treatments should be used and other secondary focal points created, such as porches, balconies, bays and dormers.
- Porch and covered entry roofs, bays and cantilevers must have brackets or other properly proportioned supporting elements beneath them. Visually unsupported cantilevers and other elements are prohibited.
- Covered entries and entry porches shall not be overscaled. Ceiling heights for these areas shall not exceed 1.5 times the entry door height.

### Styles

There are no prescribed architectural styles for Oquirrh Mountain Ranch; however, the one unifying theme is quality design, materials and workmanship. These Architectural Design guidelines are intended to establish a recognizable vocabulary for architecture and produce diverse yet compatible groups of buildings without demanding "letter perfect" authenticity.

- The architectural style of the building shall be complemented by scale, mass, proportion, articulation and detailing.
- Architectural styles should be interpreted in a manner to ensure that the design of each building is unique in character, specific to the site, and contributes to the overall community.
- A concentration of a particular architectural style may be encouraged to create special blocks or green courts.
- Side and rear elevations shall incorporate style elements and details that unify the building's composition.
- Each building shall have a style stated on its submittal documents. The Oquirrh Mountain Ranch DRC will review the elevations with the style in mind to determine if they are a reasonable interpretation of the style.

Sample styles that are acceptable are:

#### *Farmhouse*

Typical Farmhouse buildings could be articulated with:

- High pitched gable roofs
- Prominent front porches
- Vertically proportioned windows (2:1 or greater) with muntins, oftentimes with shutters
- Windows with emphasized window head trim
- Clean-lined, simple building forms
- Claddings such as board and batten and siding
- Additive massing concepts, implying construction over time
- Indigenous building materials

### *Prairie*

Typical Prairie buildings could be articulated with:

- Low to moderate pitched roofs
- Hipped roof forms with dormers
- Eave returns if gable ends are present
- Large, often full building width porches
- Symmetrical facades, although not required
- Generous closed soffit overhangs, often with corbels
- Claddings such as brick, siding and stucco
- Composed window groupings with muntins

### *Craftsman*

Typical Craftsmen buildings could be articulated with:

- Low sloped gable roofs, visually supported by brackets
- Exposed rafter tails
- Paired or grouped windows with muntins on the upper panes
- Window trim with tapered jamb trim or extended, sculpted head trim
- Wide overhanging eaves with sloped soffits
- Claddings such as stone, brick, lap siding, shingle siding
- Gable end accent materials such as board and batten or shingle siding
- Battered, compound or paired columns, often on a masonry base

### *Shingle*

Typical Shingle buildings could be articulated with:

- Asymmetrical volumes
- Moderate to high pitched gable roofs, sometimes with eave returns
- A body with shingle siding; corner clips or mitered corners are encouraged in lieu of corner boards
- A stone base
- Flared shingle siding skirts at trim banding
- Multiple gable end vents
- Gable ends built out with supporting corbels
- Oval accent windows
- Windows with many-pane muntins and/or transoms; Palladian windows are encouraged

### *Tudor*

Typical Tudor buildings could be articulated with:

- Asymmetrical massing
- Gable roof forms with steep pitches, some with curved lower portions
- Brick, stone or stucco cladding materials
- “Timber” trim with stucco infill in gable ends
- Windows with many-pane or diamond muntins
- Minimal overhangs
- Lower rooflines with raised plate areas on the upper floor
- Brick or stone chimneys

### *Contemporary*

Typical Contemporary buildings could be articulated with:

- Strong forms
- Shed or barrel vaulted roofs
- Specially proportioned windows
- Clean-lined claddings such as stucco, board and batten siding and paneling
- Contemporary interpretations of building elements such as bays, roofs or brackets
- Strict symmetric arrangement of parts or clearly deliberate asymmetry (i.e. asymmetry should not look like an error).

### *Garage Architecture*

The housing of cars is not as important as the housing of people, and this priority shall be immediately obvious in the design of buildings; garages are to be relegated to a secondary role within the architecture of buildings.

### General Garage Requirements

- Carports are prohibited for all building types.
- Garage proportions shall demonstrate human scale and not dominate or overwhelm the building, street or alley. Garage massing shall be secondary to the principal building and shall be reduced in scale whenever possible.
- Garage detailing shall have visual interest with a similar style and materials to the principal building.
- Garage door treatments should be varied between adjacent buildings by using doors with different details or a combination of single and double doors.

### Specific Garage Requirements

- Garages shall have usable dimensions:
  - Single-bay garages shall have a minimum rough dimension of 12 feet (12'-0") by 20 feet (20'-0").
  - Double-bay garages shall have a minimum rough dimension of 20 feet (20'-0") by 20 feet (20'-0").
- Garage doors shall have a maximum distance of two and one-half feet (2'-6") from the bottom of the garage door header to the bottom of the garage eave. If the garage pad is set lower than its typical elevation due to site grading, the garage plate height shall be reduced accordingly so as to satisfy this condition.
- Sectional garage doors with decorative panels are required. Three-car garages shall have a minimum plan offset of two feet (2'-0") at one bay.
- Front load garage doors shall be set back a minimum of 20 feet (20'-0") from the back of sidewalk.
- Side load garages:
  - Shall appear to be livable space from the street and shall have a combined window area of 30 square feet or more on the front elevation.
  - Shall be set back a minimum of 15 feet (15'-0") from the back of sidewalk.

### *Mechanical Equipment*

Mechanical equipment shall be located such that it does not distract from the architectural character of the building and should be concealed if possible; if concealment is not possible, the mechanical equipment must be located and detailed to integrate with the building's architecture. Mechanical equipment includes, but is not limited to, HVAC, electrical, communications or security equipment, access ladders and utility meters.

- Eighteen inch (1'-6") satellite dishes are allowed, but their location must be approved in writing



by the Oquirrh Mountain Ranch DRC.

- Air-conditioning and evaporative cooling units shall not be located in windows or mounted on the sides of buildings.
- In single-family detached and attached homes, air-conditioning and evaporative cooling units may be located on the roof only if they are not visible from the street in front of the home.
- In multifamily buildings, air-conditioning and evaporative cooling units may be located on the roof, if screened from public view.
- Utility meters, transformers, phone and cable boxes, air conditioning units and evaporative coolers shall be screened from public view. Screen walls and/or landscaping are required treatments.
- Solar panels shall:
  - Have low profile roof brackets.
  - Be integrated into the roof design and consistent with the roof slope.
  - Have frames colored to match the roof.
  - Have all associated mechanical equipment screened from view.
- If present, passive and active solar energy systems visible from the street must be integrated into the architecture of the building.

#### **4.2.3.3 *Building Elements***

Numerous exterior design elements integrated into building form are desirable for enhancing and providing visual interest and relief. The exterior design elements should be proportional to the overall building scale and to human scale.

- All building elements and their related trim and materials shall reinforce and be appropriate to the architectural style of the building.
- Elements shall be used to visually break up larger volumes. Large, flat, unbroken planes shall be avoided.
- Building element details shall be carefully designed to highlight the element. The Oquirrh Mountain Ranch DRC may require this level of detail to be enhanced for the purposes of distinguishing the architecture under review from lower-cost buildings nearby.
- Each element should help unify the design by using either similar or complimentary forms, textures and proportions.
- Each residence shall have a minimum of one private, usable outdoor space directly accessible from the residence. Possible outdoor spaces include: porches, patios, balconies, yards, and decks.

#### *Covered Entries and Porches*

Porches can be used to create a human scale at the front entry, to promote public/semi-private/private layering, to activate the streetscape and to break down building massing. Covered entryways and outdoor areas, including front porches, patios, decks, and balconies, are encouraged to provide gracious transitions to outdoor areas, as well as shade for indoor and outdoor living areas.

- A porch or covered entry is required at every entry door.
- All front-door entries shall be visible and accessible from the street, unless specifically approved by the Oquirrh Mountain Ranch DRC.
- Entry design should aim to provide a graceful transition between the public and private realms.
- Front entries shall be well defined, detailed, and reflect individual units.
- Multi-family access points to units shall be clustered in groups of four or less; balconies and corridors that service five or more dwellings are prohibited unless specifically approved by the Oquirrh Mountain Ranch DRC.

### *Columns and Railings*

Columns and railings are an opportunity to bring the character and detailing of the architecture to a location that is tangible to the building's users.

- Columns shall be properly proportioned to the mass they support. A minimum porch column size of six inches (6") by six inches (6") with trimmed cap and base is required. Columns taller than nine feet shall have a minimum size of eight inches (8") by eight inches (8").
- Paired or grouped columns are encouraged.
- Columns and railings shall be solidly mounted.
- In most cases, column spacing should create square or vertically oriented spaces (the spaces between columns should not be wider than they are tall). If the space is horizontally oriented, columns should be boxed columns greater than 18 inches (1'-6" x 1'-6") square or paired columns.
- Masonry on column bases shall be a minimum of two inches (2") above a railing termination.

### *Bays*

The use of bays is encouraged to break down the massing of facades.

- Bays and projections shall be supported by properly proportioned architectural elements.
- A bay must be projecting a minimum of 12 inches (1'-0").
- Bays with vertical proportions are encouraged.
- Bays shall appear to be mounted entirely upon another building mass and shall not share a common edge with that mass.
- In most cases, bays should have a different material than the building mass on which it is mounted.

### *Doors and Windows*

- Proportions of window and door openings shall reflect human scale and complement rooflines and building eaves.
- Vertically proportioned windows are encouraged.
- All elevations shall have at least one window with a minimum of 8 square feet. Corner lots or lots adjacent to public open spaces may require additional windows as determined by the Oquirrh Mountain Ranch DRC. (See the sections in Single-family Detached Buildings and Other Residential Buildings for the required fenestration areas.)
- Attic windows shall be located such that there is a believable living space behind them.
- Sliding glass doors are not permitted on elevations that face a public street (alleys excluded). French doors are allowed in all residential elevations.
- Metal windows, where allowed, shall be painted.
- Skylight requirements:
  - Skylights must be integrated with the roof design and shall be mounted in a manner parallel to the roof pitch. Skylights shall be flat rather than bubbled.
  - Skylight glazing shall be clear, solar bronze, or grey.
  - Skylight framing materials shall be copper, bronze, or anodized metal or colored to match the adjacent roof.

### *Roof Forms and Dormers*

Roof forms and dormers accentuate a building's architectural style and contribute to the overall streetscape rhythm and aesthetic.

- Care should be taken so that complex roof forms retain a sense of hierarchy and reason. Overly complex roof forms and roofs not supporting the architectural style of the building are discouraged.
- A main gable or hip form should be used with complimentary sheds, dormers and other minor

elements. Other types of dominant roof forms will be considered by the Oquirrh Mountain Ranch DRC on a case-by-case basis; however, mansard roofs are prohibited.

- Gables, dormers, and other smaller roof elements should be proportional to the spaces they cover and to the overall roof size and form. Their use is encouraged to help break up the proportions of large roofs and to provide visual interest through articulation. Roof breaks shall occur in all homes, unless specifically approved by the Oquirrh Mountain Ranch DRC.
- Habitable space within the primary roof is encouraged.
- Roof overhangs shall be designed to respond to passive solar requirements as appropriate for seasonal and/or climatic conditions.
- Gutters and downspouts should be integrated into the design of buildings, and appear as a continuous architectural element.

### *Eaves*

Roof overhangs and eaves are recommended for their aesthetic quality as well as practical functions. These elements create relief and shadow patterns that visually reduce height and scale, provide shade for walls and windows, and control rainwater.

- Overhangs shall be a minimum of twelve inches (12"); however the Oquirrh Mountain Ranch DRC may, at its sole discretion, waive this requirement based upon the architectural style of the home.
- Overhangs should be proportional to the sizes of roofs, pitches, and building heights. Larger roof areas, shallow pitches and roofs high from the ground generally indicate larger overhangs. Steeper roofs typically require less overhang.
- Fascia and soffit details shall be proportional to the size of overhangs and roof pitches.
- A minimum eight-inch (8") width or a comparable combination of built-up and relief boards is required for fascia boards, provided however that 6" width fascia may be presented to the Oquirrh Mountain Ranch DRC for approval.

### *Chimneys*

Chimneys add architectural detail to residential buildings. When well constructed, chimneys can be a beautiful addition to a building's exterior.

- Chimneys shall look authentic. Chimneys must have a foundation and shall not be cantilevered.
- Proportions and materials should give chimneys a substantial and stable appearance.
- Chimneys should punctuate rooflines and add architectural interest.
- If masonry is present on the building, the chimney shall be constructed of the same masonry.

### *Decks, Balconies and Stairs*

Decks and balconies are encouraged so as to offer additional outdoor living space to homeowners.

- Decks, balconies and exterior stairs shall be integrated with building forms. Materials and colors shall be consistent with or complimentary to the building.
- Columns at rear elevations of walkout lots shall be proportional to the entire building mass.
- Where sites permit, patios and decks shall step with the slope or incorporate terracing.
- If masonry (rock or brick) is used on the primary building, columns supporting raised decks are encouraged but not required to have a masonry exterior matching the primary structure.
- Decks must have their lowest walking surface ten feet or less above grade. If a third story deck is desired, there must be a building volume or deck below.
- Open-riser metal stairs are prohibited unless approved by the Oquirrh Mountain Ranch DRC.

### *Decorative Elements*

- Exterior shutters offer elevation relief and should be sized to the adjacent window height and

width, and shall match the architectural style of the building. Undersized shutters may be presented to the Oquirrh Mountain Ranch DRC for approval.

- Shutter hardware shall be stylistically correct and be well proportioned.

#### *Fencing and Walls*

When fencing, retaining, landscaping or privacy walls are present, their materials, style, scale, and design shall be coordinated with the architectural style and color palette of the building.

#### **4.2.3.4 Building Materials and Colors**

##### *Exterior Building Materials*

Exterior building materials (referred to as "materials" in this section) offer an opportunity to reinforce the architectural style of a building. (See the Building Massing section for application of materials in relationship to building massing.)

- All materials and colors shall reinforce and be appropriate to the architectural style of the building.
- Contrasting but compatible building textures and/or materials shall be used to help unify exterior building elements and create depth, proportion and scale.
- Generally, materials are most visually effective when only two (2) materials, excluding trim, are used. Sometimes, more than two (2) materials can be successfully used on exterior walls, but special care must be taken in order that the materials do not detract from the overall design and form. Frequent changes of material are prohibited.
- Front, side, and rear elevations shall share common materials, colors and architectural elements.
- Material changes must occur at inside corners, when possible. If not possible, materials must wrap a minimum of two feet (2'-0") around corners.
- Rock and masonry elements are encouraged. The intent of rock and masonry use is to be architecturally correct, not to meet "minimum requirements."
- Materials shall be consistently applied and harmonize with adjacent materials.
- Cladding materials with varying, compatible textures and depths should be used.
- Edges and the transition of materials shall be carefully detailed so as to provide authenticity and avoid the perception of abrupt or unfinished planes.
- All efforts shall be made to minimize the visual impact of unfinished foundation walls. Masonry or siding materials should be continued to as close as possible to grade.
- All materials should be used in a way that is authentic to the material.

##### Masonry

Masonry is a cladding material that contributes to the creation of attractive and varied elevation designs and can be used to reinforce building style.

- Masonry should be used to articulate building masses, as outlined in the Building Massing section. Wainscoting should be used sparingly and is discouraged.
- All masonry applications shall be properly detailed and are encouraged to appear to be load bearing.
- The use of masonry veneer with mitered corners is prohibited.

##### Stucco

Stucco, due to its consistent surface qualities and lack of shadow or other visual interest, needs special attention when used as a primary cladding material.

- Detailing, including control joint locations, trim at rakes and eaves, and applied details should be carefully composed to provide visual interest without appearing overdone. Control joints must be located such that they enhance the architectural style of the building.

- Trim for stucco elevations shall be governed by the following, for definition purposes trim is defined as around openings of the house i.e. windows and doors:
  - Allowed:
    - Trim at all four sides, including at least one profile or change of depth
    - Header trim only, including at least one profile or change of depth
    - Sill trim only
    - Header and sill trim
    - Recessed design (Construction such that the plane of the window is 3" or more recessed behind the stucco wall plane)
  - Prohibited:
    - Trim at all four sides, lacking at least one profile or change of depth. (e.g. the symmetrical picture frame look is prohibited).
    - No trim (except where openings are recessed—see above)
- Trim should be sized to the application; constant trim sizes for all locations shall be avoided (e.g. soffit trim banding should not be the same dimension as a base trim band; similarly, a base trim band should not be the same dimension as a belly band).
- If a rough stucco finish type is used on the building body, trim should have a finer stucco finish type in order to promote a more finished look at the trimmed areas.

### Sidings

Sidings are a traditional cladding material that can be cost effective and provide texture and shadow on the main body of a building.

- Sidings other than traditional lap sidings are encouraged, including: board and batten, paneling, shingle siding and alternate lap siding.
- Some architectural styles may lend themselves to fishscale siding or corrugated metal siding, but both should be used with special attention to appropriate quantities and locations.
- Paneling shall be carefully detailed and must have trim, reglets, or other defined edges. Paneling designs and trim must relate to the building fenestration and complement the architectural style; large quantities of paneling unrelated to the architecture are prohibited.
- Lap siding widths should be proportional to structure size and shall not exceed an eight inch (8") lap exposure on single-family detached buildings or twelve inch (12") on single-family attached or multi-family buildings. Lap siding exposure shall be consistent for all elevations.
- Cementitious sidings and trim may be used.
- Aluminum, vinyl and unarticulated panel sidings are prohibited.

### Roof Materials

Use of appropriate roof material adds value to the architectural design of a building by complementing the building's facades. Color and texture are relevant criteria when selecting roofing material.

- Acceptable roof materials include composite shingle (both standard and architectural grade), tile, slate, concrete, and metal. Membrane roofing such as EPDM or TPO are appropriate for flat roofs.  
In general, roof material colors are encouraged to be darker and earth-toned hues that accent and compliment other building colors.
- Gutters shall be required on all draining roof areas, with the exception of small bay or other roofs that cover less than 20 square feet of area.
- Metal roofs shall not have highly reflective surfaces.

### Trim

Trim should be used to enhance the architectural character of the building's main body materials.

- All windows and doors shall be trimmed. All doors shall normally be trimmed to match window and other openings. Trim treatments for arched and other special windows shall be consistent or in harmony with standard window trim on the rest of the building.
- Refer to the stucco materials section for window trim requirements for stucco buildings. Window trim for all other materials shall consist of trim on all four sides. There must be a dimensional change on at least one of the four sides.
- Trim bands are required to be consistent for all elevations.
- A minimum of four inch (4") trim shall be required beneath soffits at rake conditions. A minimum of six inch (6") fascia is required.
- When wood or composition siding is used, a skirt board of eight inches (8") (minimum) shall be required at the base of bays and in locations where siding meets foundation.
- Exposed wood shall be painted, stained or oiled.
- Pre-manufactured plastic or PVC railings are prohibited, but may be approved in lower-tier residence sizes by the Oquirrh Mountain Ranch DRC.

### Color

Color is an inexpensive opportunity to reinforce architectural style, neighborhood diversity, and visual interest. Color should be used whenever possible to enhance a building's appearance.

- All color palettes shall be approved by the Oquirrh Mountain Ranch DRC. Highly saturated color hues must be approved by the Oquirrh Mountain Ranch DRC.
- Body colors shall be evaluated with the roof color; the colors should be harmonious or provide a conscious contrast.
- Although they should be avoided in the building design, any awkward or odd areas of the building shall be painted the body color in order to reduce their visual impact.
- Garage and entry door color(s) shall complement the body color.
- All metal and/or plastic roof protrusions such as plumbing vents, furnace vents, water heater vents, and similar mechanical equipment shall be fully screened from view or primed with an appropriate primer and painted with a durable paint that will withstand the weather. The roof protrusions shall be painted a color that is complimentary to the adjacent roofing materials. When ABS is used to vent through dark colored roofs, it need not be painted if all other such vents and equipment are painted in corresponding black color.
- Gutter and downspout colors shall match the materials the gutters and downspouts are mounted on.

EA Ratio

(NOTE: This section on EA Ratios is still under consideration and is likely to be modified by the DRC over time. Take care to obtain the most recent version of this section before proceeding to evaluate any proposed design.)

The Elevation Articulation Ratio ("EA Ratio") provides a guideline to evaluate building elevations. The builder/developer is advised to consider these ratios in the design of residences, as the Oquirrh Mountain Ranch DRC will use this guideline in the evaluation of plans received in submittals. The DRC may approve plans that do not conform to these EA Ratios if it deems the elevations to include compensating design elements, or in cases in which increasing articulation to meet the EA Ratios compromise the aesthetics of the design.

## The EA Ratio

(The Elevation Articulation Ratio)

$$\left( \frac{\text{Full Credit Areas} + (0.25 \times \text{Partial Credit Areas})}{\text{Surface Area}} \right) + \text{Extra Articulation Credit} = \text{EA Ratio}$$

The EA Ratio is intended to create a non-subjective baseline for elevation articulation. It should be used with the other Architectural Guidelines to create well-proportioned, well-articulated buildings that enhance the neighborhoods of Hidden Valley. In order for building elements and material areas to be considered as an EA Ratio Area, the element must meet all requirements set forth in these guidelines. EG: items must be stylistically appropriate; bays cannot share a plane with the building mass, porches must be 6'-0" clear in both dimensions, etc. Full or partial credit areas may not be re-counted, with two exceptions--masonry and fenestration beneath a porch or deck roof.

This Prairie style house, with an EA Ratio of 0.81, will be used as an example:

$$\left( \frac{362 \text{ SF} + 143 \text{ SF} + 248 \text{ SF} + 29 \text{ SF} + (0.25 \times 76 \text{ SF})}{1,041 \text{ SF}} \right) + 0.04 = 0.81 \text{ EA Ratio}$$

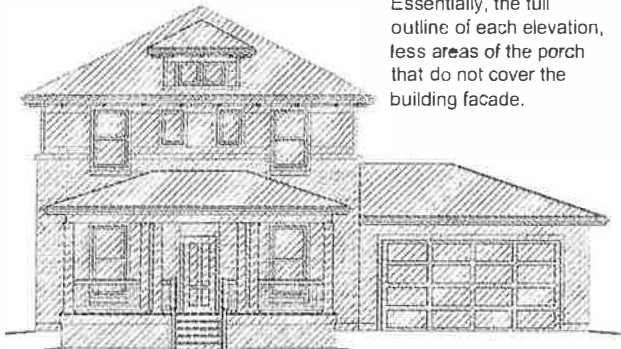
Diagrams showing how the EA Ratio was calculated follow.



This image shows the siding elevation of the same house: it's EA Ratio is 0.57.

**SURFACE AREA**  
(1,041 SF)

All wall, roof and fascia areas of an elevation. Essentially, the full outline of each elevation, less areas of the porch that do not cover the building facade.



**FULL CREDIT AREA**  
**PORCH/DECK AREA**  
(362 SF)

- Porch and deck roofs
- All areas of a elevation covered beneath a porch or deck roof
- Patio and deck areas beneath un-roofed decks
- Railing areas of uncovered decks
- Juliet railings



**FULL CREDIT AREA  
FENESTRATION AREA  
(143 SF)**



- Windows and doors, except garage doors
- Garage door window area
- Vents, shutters and windowboxes
- Window, door and vent trim
- Permanent sunshade or lattice devices
- Canopy roofs above windows or doors (additive forms that are distinct from other rooflines)

**FULL CREDIT AREA  
MASONRY AREA  
(248 SF)**



- All brick or stone, including rowlocks, drip caps, etc. that are not obscured by other building elements
- Courtyard walls, if they block the view of portions of the house from the sidewalk

**FULL CREDIT AREA  
BAY/DORMER AREA  
(29 SF)**



- Bays and bay roofs
- Dormers and dormer roofs, provided that they are less than 12'-0" wide, symmetrical and have a single roof form

**PARTIAL CREDIT AREA  
SPECIAL MATERIALS AREA  
(76 SF)**



- Board & Batten siding
- Shingle siding
- Paneled areas
- Fishscale siding
- Corrugated steel siding
- Metal roofing

**EXTRA ARTICULATION CREDIT  
(0.03)**



- 0.01 16" or greater boxed soffit
- 0.02 Corbelled soffit
- 0.01 Window muntins
- 0.04 Total Extra Articulation Credit

Credit	Item
0.01	Two 6" or 9" wide garage doors in lieu of one 16' wide door (must enter the same unit)
0.02	Wood garage door(s)
0.01	1 to 3 roof brackets
0.02	4 or more roof brackets
0.01	Sloped soffit on all main roof forms
0.01	16" or greater boxed soffit on all main roof forms
0.02	Corbelled soffit on all main roof forms, 3'-6" or less on center
0.02	Exposed rafter tails, 2'-0" or less on center
0.01	Window muntins that match the architectural style (must be present on all windows)
0.01	Belly band or other horizontal trim board that is not associated with paneling
0.02	Building plane offset, not including bays or porches, of 6'-0" or more on a Single Family Detached building
0.02	Building plane offset, not including bays or porches, of 3'-0" or more on a Single Family Attached or Multi-family building
0.04	Covered entry (each unit can either receive area credit for a porch or extra articulation credit for a covered entry)
0.10	No garage door on the façade
0.10	A garage door set 4'-0" or more behind the front plane of the closest portion of the house; a porch is not considered "house" for this credit

Add the credits together for the total Extra Articulation Credit. Credits are given for each type, not each occurrence of each item. EC: credit is given if an elevation contains a trim band, but each band is not counted individually.



*EA Ratio for Single-Family Detached Buildings*

The EA Ratio for single-family detached homes has the following requirements based on house size:

EAR Requirements	Single Family Detached House Area				
	Under 1700SF	1701-2100 SF	2101-2500 SF	2501-3100 SF	3101 and up
Front and Exposed Elevation minimum	0.38	0.42	0.46	0.50	0.54
Side(s) EA Ratio minimum	0.26	0.28	0.30	0.32	0.34
Passive Side EA Ratio minimum	0.22	0.23	0.24	0.25	0.26
Rear EA Ratio minimum - Street Load	0.32	0.34	0.36	0.38	0.40
Rear EA Ratio minimum - Alley Load	0.16	0.20	0.23	0.26	0.30
<b>Materials</b>					
Exposed foundation at 2:12 or shallower slopes	Up to 12"	Up to 8"			
Exposed foundation at slopes greater than 2:12	Up to 24"	Up to 16"			
Minimum Fenestration Area per elevation	60	75	90	105	120
Roofing warranty requirements	25-year	30-year		40-year	
<b>Window Materials</b>					
Allowable	Aluminum, Vinyl	Vinyl, Wood			
Prohibited	(none)	Aluminum			
<b>Window operation</b>					
Allowable	All operations		Fixed, Single-hung, Double-hung, Awning, Casement		
Prohibited	(none)		Sliding windows		

*EA Ratio for Other Residential Buildings*

The EA Ratio for single-family attached, multi-family and community buildings has the following requirements based on building type and size:

EAR Requirements	Building Type									
	Townhomes		Townhomes						Multi-family	Community Buildings & Clubhouses
	Front Load	Rear Load	Street Load		Attached Alley Load		Detached Alley Load			
		<1700 SF	≥1700 SF	<1700 SF	≥1700 SF	<1700 SF	≥1700 SF			
Front and Exposed Elevation minimum	0.40	0.52	0.38	0.46	0.52	0.60	0.52	0.60	0.60	0.4E
Side(s) EA Ratio minimum	0.30		0.30	0.32	0.30	0.32	0.30	0.32	0.32	
Hidden Side Elevation EA Ratio minimum	0.24		0.24	0.25	0.24	0.25	0.24	0.25	0.25	n/a
Rear EA Ratio minimum	0.36	0.34	0.34	0.38	0.28	0.34	0.14	0.16	0.40	0.4E
<b>Materials</b>										
Exposed foundation at 2:12 or shallower slopes	Up to 8"		Up to 12"							
Exposed foundation at slopes greater than 2:12	Up to 16"		Up to 24"							
Minimum Fenestration Area per elevation	105 SF									
Roofing warranty requirements	40-year									
<b>Window Materials</b>										
Allowable	Vinyl, Wood									
Prohibited	Aluminum									
<b>Window operation</b>										
Allowable	Fixed, Single-hung, Double-hung, Awning, Casement									
Prohibited	Sliding windows									

**4.3 LANDSCAPE GUIDELINES**

**4.3.1 General Landscape Character**

The overall landscape concept for Oquirrh Mountain Ranch is based on the creation of a unified landscape that is sustainable, attractive, and complimentary to the natural and man-made elements within the community. The landscape will create an environment that evokes the rural Utah town and country landscapes commonly associated with this region through the use of specific plant species, arrangements of plants, landscape berms, walls and other landscape features.

Use of xeriscape principles is encouraged throughout Oquirrh Mountain Ranch to promote self-sustaining landscape zones and to reduce water and maintenance requirements. A critical element that integrates xeric principles into the Oquirrh Mountain Ranch landscape is the use of native grasses, seen frequently in the valleys of Utah, in conjunction with a limited amount of irrigated turf, which will provide green highlights.

### ***Town and Country Landscape***

TOWN: Within core areas of Oquirrh Mountain Ranch and its neo-traditional neighborhoods, the landscape utilizes an indigenous plant palette and plants are arranged with a formal structure. Streets are defined by a relatively uniform placement of deciduous shade and ornamental trees, either in tree lawns between the street and the sidewalk, or near the back of the walk. Ornamental shrubs and flowers are planted in defined beds, often in geometric patterns and grouped to provide four season interest.

COUNTRY: Plant materials are grouped in masses and placed to provide interest and create focal points at key locations within the community. Along development edges, major streets and parkways, in open spaces and natural areas, and on properties where there are large landscaped areas, landscape designs will imitate natural patterns, with large informal groupings of trees, shrubs and flowering plants, and sweeps of lawn and ornamental grasses.

Aesthetic considerations for Town and Country landscape plans include:

- Use of a "Utah Town and Country" theme featuring native and complimentary plant materials
- Creation of landscapes with a central focus (courtyard, plaza, square), especially within higher-density neighborhoods in the heart of the mid- and upper valleys
- Enhanced landscaping at neighborhood entry areas and public gathering areas
- Consideration of sculpture, public art, unique plantings, and water features in key areas
- Special lighting, pavement and furnishings in public open spaces
- Use of seasonal color in the landscape as focal points
- Creation of landscapes that provide interest during all four seasons

In addition to utilizing traditional Utah Town and Country elements, the landscape concept incorporates several important ideas that are essential to the long term viability of the landscape. These ideas form the basic direction necessary to integrate landscape designs into the natural setting within Oquirrh Mountain Ranch:

- Landscape development will be efficient. That is, it will concentrate resources in those areas receiving the most intense human use, such as parks and recreation facilities. Areas intended primarily for passive or visual amenity will require fewer water and maintenance resources.
- Landscape areas will be designed with the objective of reducing long-term water use. Irrigation standards will be directed to gradually weaning plants from watering as they mature, so that water use can be significantly reduced over time.
- The landscape will be designed to minimize long-term maintenance for the majority of landscaped areas. This will be achieved by limiting areas of highly irrigated turf, clipped hedges, and ornamental plants to key locations where they can be emphasized.

### **4.3.2 Site Considerations**

Landscape improvements should minimize the disturbance of existing terrain and vegetation, and should minimize the disturbance of natural drainage patterns when feasible. Landscapes should be considered an extension of living space for the community, and the design of such spaces should coordinate with adjacent building construction and design, extending similar or complimentary materials where feasible, and using creative paving compatible in color and texture to the residence (i.e. brick, concrete, pavers, and treated wood).

The following design elements should be considered by the landscape architect when preparing landscape plans for Oquirrh Mountain Ranch:

- Solar orientation of landscape areas
- Separation of functional uses and creation of exterior "rooms"
- Clear identification and separation of vehicular and pedestrian traffic; maintaining required sight distances
- Reinforcement of the circulation system with plantings
- Climatic mitigation of pedestrian spaces and corridors (e.g., wind-row plantings for warming in the winter; canopy trees for sun protection in the summer)
- Shelters from traffic noise and hazards
- Maximizing long-term ease of maintenance and optimizing water conservation
- Compatibility with size and type of existing vegetation onsite or adjacent to the site

### **4.3.3 Landscaped Slopes, Grading and Berming**

Significant portions of the Oquirrh Mountain Ranch community contain steep slopes that must be accommodated in the landscape. The Oquirrh Mountain Ranch Master Plan attempts to minimize overlot or mass grading by keeping the areas with the most dramatic topography as open space and trail corridors. However, where there are steep areas in development pods, proper treatment to address slope stability issues will be required. In general, landscapes should be graded to harmonize with the natural lay of the land. Gentle earth mounding and berms are encouraged as techniques that reflect and enhance the natural landscape.

Planting beds shall not exceed a 3:1 slope and shall be 50% covered by plant material at the time of installation. Retaining walls shall be used when 3:1 slopes are otherwise exceeded. In certain circumstances, native turf, sod, and shrubs may also be used in areas where the slope exceeds 3:1, subject to Oquirrh Mountain Ranch DRC approval.

Open areas not covered with seed, sod, or plants will be covered by shredded wood or rock mulch and kept free of weeds.

During and subsequent to all site construction, techniques to control site erosion and to protect adjacent properties are mandatory and must conform to City requirements. Control techniques include the use of sedimentation basins, filtration materials, such as straw bales or permeable geotextiles, and slope stabilization fabrics or tacking agents.

### **4.3.4 Accent Walls & Retaining Walls**

#### **4.3.4.1 *Walls adjacent to Community Parkways/Collectors, Parks and Open Space***

Where retaining walls are required or accent walls are desired to terrace a slope, and the area is visible from the community parkways, collector streets, parks, or open space, walls must be constructed of quality interlocking masonry wall units, at a minimum. Cast concrete walls with a stucco or masonry face are also allowed. Dry-stacked natural or cultured stone walls are preferred. Walls made of landscape timbers or railroad ties are not acceptable. Colors should be soft earth tones from an approved palette, as opposed to a variety of contrasting colors and patterns.

No single wall shall exceed four feet (4') in height unless unique site conditions shall require otherwise. When more than four feet needs to be taken up, a series of walls with planting between the walls is preferred. These tiered walls should be separated by a minimum of four feet (4') to allow for planting of evergreen and deciduous plants. Retaining walls greater than twenty feet (20') in length must have breaks or jogs at regular intervals.

#### 4.3.4.2 *Walls within or between Interior Lots*

For walls not visible from community parkways, collector streets, parks, or open space, interlocking masonry wall units in grays, tans or browns are the minimum acceptable. Natural stone or cultured stone walls will be considered an upgrade. No walls with high contrast colors or patterns will be allowed. Landscape timber or railroad tie walls are not acceptable.

Samples of proposed walls indicating materials and color must be submitted to the Oquirrh Mountain Ranch DRC for approval before construction.

Sidebar text:

Unless otherwise specifically stated, drawings of plans for a proposed improvement must be submitted to the Oquirrh Mountain Ranch DRC and the written approval of the Oquirrh Mountain Ranch DRC obtained before the improvement is made.

#### 4.3.5 Plant Palette & Material Standards

All plant materials (trees, shrubs, ground cover, grasses, etc.) shall be high-quality nursery stock suitable for the growing conditions found in the Utah Valley and bench areas, as applicable. Use of plants from the list of Oquirrh Mountain Ranch Approved Plant Materials is encouraged (See Appendix \_\_\_\_).

Trees with vigorous, shallow root systems such as willows and cottonwoods are not permitted within ten feet (10') of building foundations, driveways, curbs and utility easements. Care should be used in the placement of trees, in particular, and other plant material so that access and visibility are unhindered along sidewalks, roadways and intersections, and at building entrances and utility easements.

#### 4.3.6 Landscape "Edges"

The transition between areas of distinct uses should be as smooth and continuous as possible, with the goal of "visual compatibility" occurring from publicly-viewed areas to any abutting land use. A graduated transition, featuring enhanced landscape plantings and berms will be required where the residential neighborhoods and commercial developments can be seen from parks, open space, community parkways and collector streets.

#### 4.3.7 Fencing

The fencing for Oquirrh Mountain Ranch is designed to provide a consistent and unified image throughout the community's neighborhoods, reinforcing the Oquirrh Mountain Ranch landscape theme while satisfying the functional and privacy needs of residents. Fencing use and materials shall be approved by the DRC prior to installation and will follow the following guidelines:

- Materials
  - Chain link fencing is prohibited, with the only exception that dark color-vinyl coated chain link fencing may be used in a limited fashion around athletic facilities, school sites, and other areas for security.
  - In residential areas, wood or plastic varieties of open rail or picket fencing are preferred
  - In commercial areas, architectural metal fencing (ornamental iron or similar) is required in highly visible areas. "Highly visible area" is defined as along private or public open space areas, community parkways and collector streets.
- Height Dimensions
  - Fences shall be a maximum of 6 feet tall in residential areas.

- In non-residential areas, fences may be a maximum of 8 feet tall, except as associated with sports facilities.

- Buffering and Landscaping

- In areas visible to the public, fencing is encouraged to be buffered with landscaping to ensure an attractive development. Buffering should be accomplished with a mixture of evergreen trees, shrubs, ornamental or deciduous canopy trees, and berms.
- Front yard fencing may be installed in neo-traditional and “cluster home” neighborhoods, with the approval of the Oquirrh Mountain Ranch DRC. When used, front yard fences shall be a minimum of 40% open, and no more than 42 inches in height.
- Optional mow strip is allowed between the fence and sidewalk or alley.

#### **4.3.7.1 Residential Fences**

A detailed fencing plan will be adopted and enforced through the CCRs for all residential fencing within each neighborhood and will conform to all requirements and guidelines and shall be approved by the Oquirrh Mountain Ranch DRC.

#### **4.3.7.2 Privacy Fences**

Privacy fences shall not protrude into the front yard areas of any residential lot. Privacy fencing may not start any closer than six feet (6') behind the front corner of the home which is furthest from the street that the home faces.

Special privacy fencing rules apply for corner lots and for lots adjacent to any public open space such as a park or trail corridor, parkway road, or community center. Privacy fencing for corner lots must comply with the City's “Line of Sight” ordinance.

For corner lots, privacy fencing may include a 6-foot fence on the side yard beginning at a point which is 10 feet behind the front corner of the house, extending toward the side property line or sidewalk no more than 3-feet from the sidewalk, then turning parallel to the side property line until the fence meets the rear property line. This 45° angle will not create front yard fencing for the home behind yours.

Privacy fencing on corner lots is subject to “Line of Sight” regulations implemented by Eagle Mountain City.

#### **4.3.7.3 Alley Fences**

Alley fencing is defined as the fencing enclosing all of the sides of the back and side yards between the alley and the residential structure.

Fences that parallel an alley shall be set back a minimum of two feet (2') behind the back of the alley curb. Alley fencing is not required if the fence is set back a minimum of eleven feet (11') from the back of the alley curb; in such situations, six-foot (6') privacy fencing will be allowed.

Alley fencing for corner lots must comply with the City's “Line of Sight” ordinance.

#### **4.3.7.4 Residential Areas of Limited Fences**

In some areas, the Oquirrh Mountain Ranch Master Plan minimizes or limits fencing all together. Homes that are clustered or constructed adjacent to common open areas or in “garden courts” may have fencing limited to a private courtyard or patio area directly adjacent to the building. Common areas shall not be fenced.

#### **4.3.7.5 Commercial Fences**

Commercial fencing shall conform to the fencing guidelines of its perspective neighborhood design and CCRs. "Highly visible area" is defined as along private or public open space areas, community parkway or collector streets.

#### **4.3.7.6 Fences along Parkways and Open Spaces**

Open rail fencing shall be used where residential lots abut trail corridors, parks and open space, community parkways and collector streets.

Open rail fencing may have pet mesh (hogwire) attached to the inside, but should otherwise remain visually open.

#### **4.3.8 Irrigation and Water Use**

Automatic irrigation systems are required for all landscapes. It is recommended that homeowners create a complete landscape irrigation plan for their lot, preferably designed by a landscape irrigation specialist. All systems shall be designed to minimize overspray and water waste. The use of drip irrigation systems is encouraged to reduce water usage and evaporation.

##### **4.3.8.1 Spray irrigation**

A spray irrigation system is recommended for turf and lawn areas.

##### **4.3.8.2 Drip irrigation**

Drip irrigation is recommended to water annual and perennial flower beds, shrubs and trees.

#### **4.3.9 Mulch**

Weed barrier in areas with wood mulch is encouraged. A 3- to 4-inch depth of mulch is typically suitable to prevent most weed growth. An approved pre-emergent herbicide must be applied prior to all mulch applications.

Acceptable mulches are:

- Crushed gravel (+1 inch), river rock, or river cobble, in the tan, brown and gray color range
- Sandstone quarry tailings
- Wood mulch (pine/fir and other regionally produced products is preferred)
- No white, black, pink, red, green or other artificially-colored rock or dyed wood mulch is allowed

#### **4.3.10 Xeriscaping**

Xeriscape principles, including the appropriate selection of plants, amending the soil, mulching landscape planting beds, the use of semi-irrigated "native" turf, and drip irrigation shall be utilized where practical.

#### **4.3.11 Landscape Maintenance**

Well-maintained landscapes are critical to the overall image and appearance of the Oquirrh Mountain Ranch community. However, maintenance practices need not negatively impact the environment or budget. The following landscape maintenance principles should be followed:

- Limit the use of pesticides and fertilizers to the minimum required to establish and sustain plants.
- Reduce the need for mowing by minimizing the amount of turf grass used in landscapes to areas that receive the heaviest use.

- The Oquirrh Mountain Ranch Homeowners' Association shall maintain trees, lawns, sidewalks, and plantings along Oquirrh Mountain Ranch Parkway and Mid-Valley Parkway, and for common open space, parks and trailheads throughout the development. Maintenance of all other landscape areas is the responsibility of the adjacent property owner unless special arrangements are made with the Oquirrh Mountain Ranch Homeowners' Association.

Homeowners must maintain their entire lot on a regular basis, including lawn cutting, tree and shrub pruning, removal of weeds and dead plant material, and general removal of trash and lawn debris.

#### **4.3.11.1 *Snow Removal***

Residents shall be responsible for snow removal and snow storage on single-family detached residential lots. The Oquirrh Mountain Ranch Homeowners' Association, or appropriate sub-association, shall be responsible for snow removal and snow storage on each single-family attached and multifamily residential lot. Pushing snow into the street or street medians is not permitted.

#### **4.3.12 *Community Landscapes***

An overall landscaped plan that carries a consistent design and theme throughout the entire Oquirrh Mountain Ranch Masterplan will be adopted and enforced by the Oquirrh Mountain Ranch DRC.

##### **4.3.12.1 *Community Entries***

All community and neighborhood entries will be required to incorporate distinctive landscape areas at entries, roundabouts and intersections. These community and neighborhood entries shall be of a consistent design throughout Oquirrh Mountain Ranch and shall follow the community landscape designs approved by the Oquirrh Mountain Ranch DRC. Plant species shall consist of specimens having a high degree of visual interest during all seasons. At neighborhood entrances, a planting bed with a mixture of shrubs, ornamental trees, flowers and/or groundcovers shall be planted.

##### **4.3.12.2 *Streetscapes***

Streetscapes shall have a consistent design throughout the community.

The landscape along Oquirrh Mountain Ranch Parkway and the Mid-Valley Parkway is inspired by the vegetation and land forms of the native hillsides that surround the community. Gentle earth mounding and native plant materials should be used along the parkways to transition and screen abutting neighborhoods. Native junipers shall be planted in sparsely located groves so as not to block views and to keep the natural planting concept intact.

Trees along residential streets shall be selected for a mature size that is compatible with the width of the adjacent street and on the Approved Plant List (See Appendix 6.3).

##### **4.3.12.3 *Parks***

Parks and site furnishings, including picnic shelters and park benches, shall be designed in a consistent fashion, so as to provide continuity throughout the Oquirrh Mountain Ranch community. All site furnishings and street furniture should be constructed of high-quality materials and installed by the developer.

##### **4.3.12.4 *Open Space and Trails***

The large open spaces surrounding Oquirrh Mountain Ranch are key components defining the landscape character of the Oquirrh Mountain Ranch community. Generally, open space should be left in its native condition, preserving the rugged natural environment.

The development of recreational trail corridors with viewing platforms and/or resting areas with shade structures consistent with the Oquirrh Mountain Ranch Master Plan will allow the native open space to be used as a recreational amenity. Trailheads shall be constructed to provide access to the open space from all parks and neighborhoods that are adjacent to open space.

#### 4.3.13 Residential Landscapes

Front and rear yard landscaping shall be in accordance with the Oquirrh Mountain Ranch CCRs and the CCRs of the applicable development. All residential parcels are required to have a basic landscape package installed by the owner and/or builder. This landscape will define the edges of neighborhoods, the streetscapes within them, and become the base planting for the overall development parcel.

Production builders are required to provide front yard landscapes for all residences to insure a quality streetscape.

The front yard of a lot is defined as the area of the lot beginning at the back of the curb on any adjacent street or roadway to a distance at least to the rear most part of the residence and/or privacy fencing from such street or roadway.

In single-family detached neighborhoods, a list of appropriate plant materials (See Appendix 6.3) shall be provided to homeowners to install additional plantings that are complementary to the plantings installed by the developer or builder in common landscaped areas.

Landscaping, executed in accordance with a previously approved landscape plan, shall be completed no later than one hundred twenty (120) calendar days following the completion of construction of any dwelling on any lot, or the occupancy of such dwelling, whichever occurs first. If completion of construction or occupancy occurs during winter months (October - March), landscaping must be completed by the next July 1<sup>st</sup> to occur.

All front yards and, in some cases, other areas shall be landscaped in accordance with plans approved by the Oquirrh Mountain Ranch DRC and thereafter properly maintained.

The following requirements apply to all residential landscapes:

- Production builders are required to provide a front yard landscape and shall submit a typical landscape plan for review.
- The developer, builder, or homeowner shall select plant materials from the approved plant list (See Appendix 6.3).
- Corner lot sightlines shall not have any year-round plant material exceeding 30 inches in height at mature growth. Deciduous trees planted within sightlines shall be pruned up to a minimum of five feet from grade.
- Irrigation systems for lawns and beds shall be required.
- Drought tolerant turf grass species such as improved fescues or buffalo grass are strongly encouraged.
- Street Trees:

- Each lot shall have a minimum requirement of one (1) street tree per lot to be planted in the tree lawn/park strip (or just behind the walk if no tree lawn/park strip). Lots shall meet the following street tree requirement, according to lot size:

Over 5,000 square feet	2 Street Trees
Over 10,000 square feet	3 Street Trees
Over 15,000 square feet	4 Street Trees
Over 20,000 square feet	5 Street Trees



- Corner lots shall have a minimum of 3 street trees; lots that exceed 5,000 square feet shall plant one (1) tree per additional 40 feet of combined street frontage.
- When planted, all street trees shall be 2" caliper or greater (as measured 8" from the root ball).
- Planting coverage:
  - Front yards shall have a maximum turf coverage of 80 percent.
  - Corner lots may have up to 75 percent turf coverage
  - Planting beds shall be 50 percent covered by plant material at the time of installation. Seasonal flowers shall qualify as cover.
  - Planting beds shall include the two feet adjacent to the foundation of each home. Turf shall not be installed up to the foundation of the home.
  - Open areas not covered with plants shall be covered with wood or rock mulch.
  - No marble chips, volcanic rock, or high-contrast stone patterns shall be used.
- Soil Amendment:
  - The addition of soil amendments to existing soil is required. A typical specification for soil amendments includes three (3) cubic yards of amendment per 1,000 square feet of area.
  - Builders and owners should contact local nurseries for specific recommendations.
  - A site specific horticultural solids test can provide specific soils information.

#### **4.3.13.1 Pests and Plant Diseases**

All lots shall be kept free from any plant materials infected with noxious insects or plant diseases which in the opinion of the Oquirrh Mountain Ranch DRC are likely to spread to other property. The provisions of this section apply to all dwellings built on any lot whether sold or unsold. The builder or such other original property owner will be held responsible for the completion of landscaping within the time limit specified herein. Violation of the requirements specified herein will be subject to a daily fine as determined by the Oquirrh Mountain Ranch DRC, calculated from the due date of completion, as specified herein, to the actual date of completion.

#### **4.3.13.2 Shared Common Areas**

Shared common areas in cluster developments, single-family attached and multifamily neighborhoods shall be installed by the builder/owner according to approved landscape plans. These areas should be installed at the time of the first Certificate of Occupancy of a residence inside any such development.

#### **4.3.13.3 Storage Sheds**

Storage sheds shall be allowed in the rear yards of single-family detached and attached homes where a private back yard is provided. Such sheds should be integrated into the landscape and match the color palette of the primary residence with which they are associated. Sheds shall not extend more than 30 inches above the top of the privacy fence.

#### **4.3.13.4 Mailboxes**

Mailboxes for single-family residences shall consist of either a single box or two boxes grouped together, subject to a design review by the Oquirrh Mountain Ranch DRC. Individual neighborhoods are allowed only one style per neighborhood. Grouped mailboxes that accommodate a maximum of nine mail slots shall be considered. All single-family residence mailboxes must be U.S. Postal Service approved.

Mail delivery in the multi-family neighborhoods of Oquirrh Mountain Ranch shall be made to grouped mail box units supplied by the U.S. Postal service. No individual mail boxes shall be permitted in multi-family neighborhoods. Clustering of mail box units is encouraged and placement should be sensitive in order to

minimize the impacts to automobile circulation and the overall streetscape. Mailbox shelters are encouraged and shall be constructed in accordance with the approved design for each neighborhood.

#### **4.3.13.5 *Play Equipment***

Play equipment will be allowed in private back yards and designated recreational areas in single-family attached and multifamily developments, but is subject to approval by the Oquirrh Mountain Ranch DRC. To minimize the visual impact of such equipment, effort should be taken to screen the play equipment from view of adjacent public areas and streets.

#### **4.3.13.6 *Satellite Dishes***

The installation and placement of satellite dishes shall be permitted in locations approved by the Oquirrh Mountain Ranch DRC. Care should be taken to screen or otherwise minimize the visual impact of such features on neighbors and the community.

### **4.3.14 Commercial/Public/Community Building Landscapes**

#### **4.3.14.1 *Building Perimeter Landscape***

All commercial developments facing public streets, transportation corridors, public open space, entrance doors or residential neighborhoods shall provide perimeter-building landscaping.

- Provide one tree equivalent for each 40 linear feet of elevation (building face) length.
- Landscaping shall be planted within 20 feet of the building (unless prevented so by loading docks).
- Such building landscaping shall be installed in plant beds, raised planters or plant vaults covered by tree grates.
- Plant beds shall be a minimum of ten feet wide, planters a minimum of six feet wide, and tree grates four feet by four feet.

#### **4.3.14.2 *Landscape Screening/Buffers***

Along parkways, where parking areas are located between the street and a commercial or public building, these parking areas must be screened from view. Where screening is not accomplished by an architectural element, a 2 ½ to 3-foot high earth berm with maximum 4:1 slope, in combination with shrubs and street trees, is required. At least 50% of the shrubs shall be flowering deciduous species.

#### **4.3.14.3 *Trash Receptacles and Enclosures***

Trash receptacles should be fully enclosed by wood or decorative masonry walls consistent with project architecture and equipped with solid metal or wood gates. Enclosures should be softened with landscaping on their most visible sides. Recommended locations include parking courts or at the end of parking bays. Locations should be conveniently accessible for trash collection and maintenance.

## **4.4 SIGNAGE AND WAYFINDING GUIDELINES**

These signage guidelines are intended to create a strong image and reduce visual clutter, while allowing for signs that inform occupants, residents and visitors of the various amenities, services and products, and regulations within the community.

The size, placement and design details of all signs are considered to be an integral part of the site development approval process. An overall signage package which includes all signs on the site or building exterior is

required for each development site. All exterior signs and graphic systems are to be designed so that they are compatible with the character of Oquirrh Mountain Ranch.

Signage proposals will be reviewed for appropriateness within the content of the proposed application. Adherence to the following minimum or maximum parameters does not necessarily assure Oquirrh Mountain Ranch DRC approval. The DRC reserves the right, at its sole discretion, as long as such waiver is not arbitrary and capricious, to waive any of the provisions outlined in the Guidelines at any particular time.

#### **4.4.1 Regulations Applicable to All Signs**

All proposed plans for signs, including details of design, materials, location, size, height, color, and lighting, must be approved in writing by the Oquirrh Mountain Ranch DRC prior to obtaining a sign permit from the City and/or construction or installation of the sign.

#### **4.4.2 Sign Area Calculation and Setbacks**

Sign areas and setback locations are required to be in compliance with the City standards.

#### **4.4.3 Prohibited Signs**

*The following signs are prohibited unless specifically approved in writing by the Oquirrh Mountain Ranch DRC on a case-by-case basis:*

- Animated, moving, rotating, or sound-emitting signs
- Billboards signs painted on building exteriors; signs in trees; signs on utility poles, traffic signs, traffic devices; or signs in the public right of way
- Signs affixed to or installed on benches, fences, recreation amenities or trailhead structures, with the exception of wayfinding signage
- Formed plastic or injection-molded plastic signs
- Hand-lettered signs executed in the field
- Paper or cardboard signs attached to or temporarily placed within the windows of buildings and/or affixed to the exterior or interior of doors
- Plastic-faced sign cabinets with illuminated backgrounds, with the exception of convenience stores
- Portable signs which are not permanently affixed to any structure on the site or permanently mounted to the ground
- Roof-mounted signs or signs which project above the highest point of the roof line of the fascia of the building
- Signs attached to a building which project perpendicular a distance of more than 18 inches from the building
- Signs attached parallel to the wall of a building but mounted more than 18 inches from the wall
- Signs mounted, attached or painted on motor vehicles, trailers or boats when used as additional advertising signs on or near the premises and not used in conducting a business or service

#### **4.4.4 Construction and Installation Requirements**

- Exposed conduits, raceways, ballast boxes or transformers will not be allowed.
- No labels will be permitted on surfaces, except those required by ordinances. Where necessary, labels will be placed in inconspicuous locations.
- All metal surfaces shall be uniform and free from dents, warps and other defects. Painted surfaces shall be free of particles, drips and runs.

- Exposed screws, rivets or other fastening devices shall be flush with the surrounding surface and finished as to be unnoticeable.

#### **4.4.5 Community Entry Monuments and Neighborhood Entry Markers**

Monumentation shall be located along Pony Express Parkway at the entries to Oquirrh Mountain Ranch, announcing entrance to Oquirrh Mountain Ranch. The community entry monumentation shall be of a consistent size and design as submitted by each developer builder and approved by the Oquirrh Mountain Ranch DRC and substantial in size.

Individual neighborhoods located within Oquirrh Mountain Ranch will be identified through the use of smaller, neighborhood markers of a consistent design that complements the community entry monumentation.

Project signage and monumentation will be installed in compliance with plans, agreements, City regulations, and as approved by the Oquirrh Mountain Ranch DRC.

#### **4.4.6 Commercial Signs**

All signs shall be architecturally integrated with their surroundings in terms of size, shape, color texture, and lighting so that they are complementary to the overall design of the buildings. Signs should reflect the character of the building, its use and the immediate context of the building, as well as the overall character of Oquirrh Mountain Ranch.

Commercial signs should comply with the following guidelines:

- Signs should be designed with the purpose of promoting retail and street activity, while enhancing the pedestrian experience, and should be limited in number to the fewest number necessary to clearly identify the businesses located within.
- Architectural features should be considered when determining the size of a sign.
- Signs will not be allowed to cover or obscure such features.
- Signs must comply with City regulations.

#### **4.4.7 Real Estate Signs**

Real estate signs are not allowed in the tree lawn/parkstrip area between the curb and sidewalk. These signs shall be located on the lot or in the front yard.

##### **4.4.7.1 Vacant Land “For Sale/Lease”**

Permissible sign elements are:

- One ground-mounted sign is allowed per direct street frontage.
- The maximum allowable size is 3’-0” x 6’-0” and 4’-0” above grade (single or double-faced).
- Permitted sign content includes:
  - Sales Entity name and/or logo (logo may not exceed 2’-0” x 3’-0”, name may not exceed 6-inch letters)
  - Site Available (may not exceed 5-inch letters)
  - Contact Name (may not exceed 3-inch letters)
  - Telephone Number (may not exceed 5-inch letters)

##### **4.4.7.2 Commercial/Retail “For Sale/Lease”**

Permissible sign elements are:

- One ground-mounted sign is allowed per direct street frontage.

- The maximum allowable size is 2'-6" x 6'-0" and 3'-6" above grade (single or double-faced).
- Permitted sign content includes:
  - Sales Entity name and/or logo (logo may not exceed 1'-6" x 2'-0", name may not exceed 4-inch letters)
  - Site Available (may not exceed 5-inch letters)
  - Contact Name (may not exceed 3-inch letters)
  - Telephone Number (may not exceed 4-inch letters)
- Sign may only be used when building occupancy is less than 90%.

#### **4.4.7.3 Loft Units "For Sale/Lease"**

Permissible sign elements are:

- One window-mounted temporary sign advertising individual loft unit property for sale or lease.
- The maximum allowable size is 4 square feet.
- Permitted sign content includes:
  - Sales Entity name or logo (logo may not exceed 1'-6" x 1'-6", name may not exceed 4-inch letters)
  - Site Available (may not exceed 5-inch letters)
  - Contact Name (may not exceed 3-inch letters)
  - Telephone Number (may not exceed 4-inch letters)

#### **4.4.8 Project Information Signs**

Project information signs include construction signs and signs and banners announcing special events of interest to the community. The design of these signs should be compatible with other Oquirrh Mountain Ranch signage and is subject to Oquirrh Mountain Ranch DRC approval.

##### **4.4.8.1 Special Event Signs and Banners**

- A banner or another approved concept with number and size as approved by the Oquirrh Mountain Ranch DRC.
- When a banner is ground-mounted, it shall not be higher than 22 feet above grade.
- When a banner is building-mounted, it shall be below parapet.
- Banners shall be used for retail/commercial developments only, installed up to a 90-day period for initial opening of the development.

##### **4.4.8.2 Construction Signs**

- One temporary construction sign, not to exceed 24 square feet, shall be permitted on each construction site.
- The sign may be free standing or affixed to the construction trailer, but in all cases shall be located within the construction property boundary.
- In order to facilitate the delivery of construction materials, the construction sign should be visible from the adjacent right-of-ways.
- All construction signs must be approved by the Oquirrh Mountain Ranch DRC prior to installation.
- The removal of construction signs shall be required prior to the issuance of a Temporary Certificate of Occupancy or Final Certificate of Occupancy.

#### **4.5 LIGHTING GUIDELINES**

Lighting provides a welcome dusk and nighttime atmosphere where entrances, destination points and features are highlighted. Outdoor gathering areas are inviting and travelled pathways are lighted to provide guidance and safety. The goal of the roadway lighting system is to provide low-glare lighting that provides excellent lighting for conflict zones like pedestrian crossings, parking lot entries and roadway intersections. The Guidelines establish sensitive lighting that limits light encroachment onto adjacent property and light pollution.

A consistent selection of lighting fixtures shall be followed throughout Oquirrh Mountain Ranch, and coordinated throughout the various neighborhoods to ensure a long-lasting quality, low-maintenance amenity. Lighting for the paths and trails (where used) will incorporate uniform wayfinding navigational lighting. The lighting must be safe and should make the user aware of hazards that may be present, such as pavement or grade changes or obstacles on the path. Walkways, paths and trails are lighted with varying light intensities and methods. This technique creates a greater depth to the entire community and forms a unifying feature between different neighborhoods.

Parking lot lighting will provide low-glare, uniform lighting to ensure a secure parking environment. The lighting will be designed as a transitional element that leads to commercial or residential areas, and will be compatible in design with the surrounding structures.

#### **4.5.1 Sports Field Lighting**

Guidelines for lighting sports fields include the following:

- Sports field lighting is prohibited in residential areas
- External floodlights should be equipped with both internal and external shielding
- Aiming angles above 60 degrees from vertical is not allowed
- Field lighting shall be controlled such that when fields are not in use, the lighting equipment is turned off. In no case shall sports field lighting be on after 11 p.m.

#### **4.5.2 “Night Sky” Preservation**

Environmentally sensitive lighting minimizes light encroachment and light pollution, and uses minimal energy through lighting equipment selection and operation. Light pollution is uncontrolled light that travels into the atmosphere, creating “sky glow.” Unshielded luminaires and excessively high lighting levels cause light pollution and should be avoided.

The key to quality exterior lighting is to place light only where it is needed, without causing glare. By not wasting light, smaller lamp wattages can be utilized to achieve superior effects. The most important result is improved visibility. Another benefit is reduced energy usage and improved maintenance. Design criteria include lighting levels, uniformity and brightness balance, as well as recommendations for reducing glare, light trespass and light pollution.

The following guidelines preserve the night sky:

- Use low wattage, shielded luminaires that are properly located and aimed
- High wattage luminaires with poor shielding are not permitted
- Excessive light levels with high amounts of reflected light are not permitted
- No lights shall negatively impact sensitive natural areas

## **CHAPTER 5 – Figures**

**5.1 OQUIRRH MOUNTAIN RANCH MASTER PLAN**

**5.2 OQUIRRH MOUNTAIN RANCH ROADWAY PLAN**

**5.3 OQUIRRH MOUNTAIN RANCH OPEN SPACE PLAN**

**5.4 OQUIRRH MOUNTAIN RANCH SLOPE PLAN**

## CHAPTER 6 – Appendix

### 6.1 DEFINITIONS

*The use of words or phrases in these Guidelines shall have the following defined meanings:*

**Applicant** – Any Owner or designated representative submitting improvement plans to the Oquirrh Mountain Ranch DRC.

**City** – Eagle Mountain City.

**City Engineer** – City engineer for Eagle Mountain City.

**Oquirrh Mountain Ranch CC&Rs** – Oquirrh Mountain Ranch Covenants, Conditions and Restrictions.

**Discouraged** – Not wanted and may not be approved; unlikely to be approved.

**Encouraged** – Preferred and most likely to be approved.

**Guidelines** – Oquirrh Mountain Ranch Community Design Guidelines.

**Oquirrh Mountain Ranch DRC** – Oquirrh Mountain Ranch Design Review Committee.

**Exception** – The allowance of a practice or design that is consistent with the general intent of these guidelines, but inconsistent with a specific provision of the guidelines. ***Granting an exception does not establish a precedent for future development.***

**May** – Compliance with a guideline using this term is important to the Oquirrh Mountain Ranch DRC, but ***IS NOT*** required.

**Owner** – Each person or entity that holds record title to a Unit or Lot.

**Shall** – Compliance with a guideline using this term ***IS*** required.

**Should** – Compliance with a guideline using this term is important to the Oquirrh Mountain Ranch DRC, but ***IS NOT*** required.

**Will** – Compliance with a guideline using this term ***IS*** required.

### 6.2 EXPLANATION OF TERMS

*The use of words or phrases in these Guidelines shall mean:*

**AASHTO** – The American Association of State Highway and Transportation Officials. A non-profit association that fosters the development and maintenance of transportation systems and establishes roadway design guidelines and criteria.

**ABS** – A type of plastic pipe commonly used in construction in non-pressurized applications (i.e. sewer systems).

**Accent color** – A contrasting color used sparingly for special emphasis on items such as the front door or, in some cases, shutters.

**Alley load garage** – A garage design in which the garage is accessed from the alley side (or rear) of the lot.

**Approval Notice** – Notice of approval of an application by the Oquirrh Mountain Ranch DRC.

**Arbor** – A framework or lattice used as a shade structure or landscape bower.

**Architect** – A design professional licensed by the State of Utah to practice architecture.



**Articulation** – An architectural design characteristic that distinctly varies an otherwise flat plane of a building. This may include repetitive architectural elements stepping in or out of the building plane, intersections of building elements, or other architectural devices meant to divide a large unbroken building plane.

**Applicant** – Any Owner or designated representative submitting improvement plans to the Reviewer.

**Balcony** – A projecting platform on an upper level of a building's exterior cantilevered from the building structure or supported by columns.

**Balustrade** – A handrail or guardrail system along a stair, porch, deck, balcony or terrace that consists of a top-rail, bottom-rail and balusters.

**Banner** – A hanging sign that is attached to a pole or structure on only one end. Banners are typically made of fabric.

**Bay** – A section of room projecting outward from the exterior wall. The projecting room area must contain at least one window, but may also be composed of wall surface.

**Block face** – One side of a street between two consecutive intersections. (i.e. a block face can be one side of a city block).

**Body color** – The dominant color of the building used for the primary cladding material.

**Bracket** – A member that projects from a structure that is designed to support, or visually give the impression of supporting, a vertical load.

**Builder** – The professional entity that constructs the improvements on a given lot.

**Building elements** – Building components used to refine building facades to a smaller scale; building elements include covered entries and porches, columns, railings, bays, doors, windows, roof forms, dormers, eaves, chimneys, decks, balconies, stairs and exterior fencing and walls.

**Building Envelope** – The portion of a home site which encompasses the area within which building may occur subject to the Guidelines and as delineated on the plat.

**Cementitious material** – A durable cement-based synthetic building material used for siding and trim applications, such as products manufactured by the James Hardie Corp. or equivalent.

**CMU** – Concrete masonry units.

**Clapboard** – A traditional type of horizontal siding for stick framed buildings. This may be produced from natural wood, fiber-cement or composition hardboard materials.

**Column** – A vertical structural member that carries the principal loads of building elements. A column is typically expressed architecturally with a base anchoring it to the ground or foundation, and a capital that transitions the load to a horizontal, overhead framing member.

**Community Fence** – An approved fence constructed along a lot and adjacent to a public right-of-way, open space or other public amenity.

**Covered entry** – A covered area adjoining an entrance to a building and usually having a separate roof. Within these guidelines, a covered entry pertains to all such areas less than eighty (80) square feet in size or those having a clear dimension of less than six feet (6'-0").

**Deck** – An open, unroofed outdoor space usually constructed of light framing above grade, and attached to the building.

**Detail** – Individual elements of architectural expression that can be either functional, ornamental or both that enhance the overall character of the improvement.

**Dormer** – An architectural element projecting from a roof form usually accommodating a window, ventilating louver or other opening in the vertical plane.

**E.I.F.S.** – Exterior Insulating Finish System, commonly referred to as "synthetic stucco" not to be confused with Stucco.

**EA Ratio** – Elevation Articulation Ratio (See Chapter 4 for a detailed explanation).

**Eaves** – The overhanging lower edge of a roof.

**Enhanced EA Ratio** – EA Ratio for structures within development parcels at or above an elevation of 5,280'.

**Excavation** – Any disturbance of the land (except to the extent reasonably necessary for planting of approved vegetation), including any trenching which results in the removal of earth, rock, or other substance from a depth of more than 12 inches below the natural surface of the land or any grading of the surface.

**Exposed Elevation** – Facades that face streets, open spaces or hillside locations or are visible from surrounding streets, regardless of whether or not they gain access from those streets.

**Facade** – Any face of a building.

**Fascia** – Any broad, flat horizontal surface at the outer edge of a cornice or roof.

**Fenestration** – The design proportioning and distribution of windows, doors, and other exterior openings of a building.

**Fiber Cement** – A durable cement-based synthetic building material used for siding and trim applications, such as products manufactured by the James Hardie Corp. or equivalent.

**Fill** – Any addition of earth, rock, or other materials to the surface of the land, which increases the natural elevation of such surface.

**Flush front load garage** – A street load garage design in which the face of the garage door is parallel to the street and is set flush with the front plane of the house (or porch) or set back less than 10 feet (10'-0") behind the front plane of the house (or porch).

**French door** – A door, usually one of a pair, of light construction with glass panes extending for most of its length.

**Front load garage** – A garage that is accessed from the primary street on which a residence is located and whose door is generally parallel with that street.

**HVAC** – Heating, ventilation and air conditioning system.

**Home site** – A parcel of land, together with any appurtenances, described as lots on the subdivision plat.

**Lap Siding** – A traditional type of horizontal siding for stick framed buildings. This may be produced from natural wood, fiber-cement or composition hardboard materials.

**Loggia** – A colonnaded or arcaded space on or in a building, that is open to the air on one or more sides.

**Lot** – Land platted as a home site that is held in private ownership.

**Masonry** – Stone, brick or other vitreous clay bonded by cementitious mortar for use in the construction of site and building elements.

**Massing** – An architectural design characteristic that refers to the overall three dimensional form of a building on its site. Massing encompasses the length, width, height, volume and overall shape of a building.

**Mile High Elevation** – A mile high building is one that has its lowest level finished floor elevation set 5,280 feet or greater above sea level. A Mile High Elevation is an elevation on a mile high building that is visible from the valley floor.

**Mullion** – The dominant vertical or horizontal framing member that is between the sashes or lights of a window unit.

**Muntin** – A vertical or horizontal glazing device which visually divides a larger window pane into smaller sections.

**Open Space** – Vacant land that may be subject to future development is not considered open space. There is no specified size range for open space, other than the minimum area needed to conserve a significant natural feature or encompass an amenity. Open space areas include all landscaped areas as well as sidewalks and other paved pedestrian areas, pools, and pool decks, recreational buildings and accessory structures associated with community amenities and associated improvements and all utility easements included therein.

**Paneling** – Smooth or wood textured flat cementitious or composite sheet good material applied with decorative battens, recessed channels, or double layered with finished edges.

**Parcel** – An area of land that will be further subdivided into lots.

**Passive Side Elevation** – When a cross-use easement or other mechanism is present, the side of house that faces an adjacent house's active exterior living space. Passive Side Elevation EA Ratio requirements allow for

less building articulation on such facades due to the presence of a cross-use easement and the design of houses having specific active and passive sides.

**Patio** – An outdoor semi-private space often paved, that is immediately adjacent to a home. It may be further defined by a low privacy wall.

**Pergola** – A colonnaded structure supporting an open roof that may be used to connect two or more building volumes.

**Pitch** – The degree of slope of a roof. Defined as a ratio of the vertical (rise) in inches of the slope to the horizontal (run) of one foot. EG: 12:12 pitch equals 45 degrees.

**Plate** – A double horizontal member in light frame construction that connects and terminates studs, columns or wall planes.

**Porch** or **Portico** – An architectural element attached to the exterior of a building that provides various degrees of shelter and enclosure as well as providing semi-public space at the building entry. Porches must have a minimum size of eighty (80) square feet and a minimum clear dimension of six feet (6'-0") in both directions to be recognized as a porch within these guidelines.

**Projecting front load garage** – A street load garage design in which the face of the garage door is parallel to the street and is set in front of the front plane of the house (or porch.)

**Pressed-Board** – (Or composition-board) a building material comprised of sawdust, wood fiber and glue fused together used to simulate wood siding and trim such as products manufactured by the Masonite Corp.

**Rake** – The inclined, roof overhang on a pitched roof.

**Recessed front load garage** – A street load garage design in which the face of the garage door is parallel to the street and is set between 10 feet (10'-0") behind the front plane of the house (or porch) and 40 feet (40'-0") behind the front property line.

**Residence** – The building or buildings, including any garage, or other accessory building, used for residential purposes constructed on a Home site, and any improvements constructed in connection therewith.

**ROW** – Right of way.

**Side drive garage** – A street load garage design in which the garage is located at the rear of the lot and the garage door is set back 40 feet (40'-0") or more behind the front property line.

**Side load garage** – A street load garage design in which the face of the garage door is perpendicular to the street. Houses with three garage bays are considered side load if two or more garage bays have doors perpendicular to the street. Corner lot houses are considered side load if the garage door does not face either street.

**Street load garage** – A garage design in which the garage is accessed from the street side (either front or side) of the lot.

**Streetscape** – An environment consisting of streets, sidewalks and buildings, and the landscaping that generally defines that street.

**Stucco** – A traditional exterior building material which consists of a layered cementitious veneer plaster. Not to be confused with E.I.F.S.

**Terrace** – A raised outdoor space or earthen platform adjacent to a building used to transition between areas of steep grade.

**Trellis** – An open framework or lattice on which plants will grow.

**Trim color** – The secondary color of the building, generally used for fascia, soffits, **columns**, railings, belly bands, shutters, window and door trim.

**Unit** – An individual residence or dwelling place.

**Xeriscape** – A method of landscaping, specifically utilizing native, drought tolerant, low maintenance plants and shrubs that once established, will thrive with local rainfall amounts.

### 6.3 APPROVED PLANT LIST

These plants are approved for use within Oquirrh Mountain Ranch:

#### Canopy Trees

<i>Acer x freemanii</i>	Autumn Blaze Maple	
<i>Acer platinoides hybrids</i>	Norway Maple	Plant sterile hybrids
<i>Acer pseudoplatanus</i>	Sycamore Maple	Drought tolerant
<i>Aesculus hippocastanum</i>	Common Horsechestnut	
<i>Albizia julibrissin</i>	Silk Tree	Drought tolerant
<i>Catalpa speciosa</i>	Catalpa/Umbrella Tree	Drought tolerant
<i>Fagus grandifolia</i>	American Beech	
<i>Fraxinus americana</i>	Autumn Purple Ash	
<i>Fraxinus anomala</i>	Single-leaf Ash	Utah's Choice selection
<i>Fraxinus pennsylvanica</i>	Green Ash	
<i>Fraxinus velutina</i>	Modesto Ash	
<i>Ginkgo biloba</i>	Ginkgo/Maidenhair	Plant male variety
<i>Gleditsia triacanthos</i>	Thornless Honeylocust	Drought tolerant
<i>Gymnocladus dioica</i>	Kentucky Coffeetree	Drought tolerant
<i>Liriodendron tulipifera</i>	Tulip Poplar/Tulip Tree	
<i>Morus alba</i>	Fruitless White Mulberry	
<i>Platanus x acerifolia</i>	London Planetree/Sycamore	Drought tolerant
<i>Populus simonii</i>	Simon Polar	
<i>Ptelea trifoliata</i>	Hop Tree	
<i>Quercus macrocarpa</i>	Bur Oak	Drought tolerant
<i>Quercus robur</i>	English/Crimson Spire Oak	Drought tolerant
<i>Quercus rubra</i>	Red Oak	
<i>Robinia neomexicana</i>	New Mexico Locust	
<i>Tilia americana</i>	American Linden	
<i>Tilia cordata</i>	Littleleaf Linden	Drought tolerant
<i>Tilia euchlora</i>	Crimean Linden	
<i>Tilia tomentosa</i>	Silver Linden	Drought tolerant
<i>Ulmus parviflora</i>	Lacebark/Chinese Elm	Drought tolerant
<i>Zelkova serrata</i>	Japanese Zelkova	Drought tolerant

#### Evergreen Trees (Most *not* suitable for parkstrips)

<i>Abies concolor</i>	White Fir	Utah's Choice selection
<i>Calocedrus decurrens</i>		Incense Cedar
<i>Cedrus atlantica glauca</i>	Blue Atlas Cedar	
<i>Cedrus libani</i>	Lebanese Cedar	
<i>Cupressus arizonica</i>	Arizona Cypress	
<i>Juniperus osteosperma</i>	Utah Juniper	
<i>Juniperus scopulorum</i>		Rocky Mtn Juniper
<i>Picea abies</i>	Norway Spruce	Dwarf varieties recommended
<i>Picea pungens</i>	Colorado Spruce	Dwarf varieties recommended
<i>Pinus aristata</i>	Bristlecone Pine	
<i>Pinus edulis</i>	Pinyon Pine	Utah's Choice selection
<i>Pinus flexilis</i>	Limber Pine	
<i>Pinus nigra</i>	Austrian Black Pine	Grows quickly

<i>Pinus ponderosa</i>	Ponderosa Pine	Needs room to grow
<i>Pinus strobes</i>	White Pine	Dwarf varieties recommended
<i>Pinus sylvestris</i>	Scotch Pine	Dwarf varieties recommended
<i>Pseudotsuga menziesii</i>	Douglas Fir	
<i>Thuja species</i>		Arborvitae

### Ornamental Trees

<i>Acer buergeranum</i>	Trident Maple	Drought tolerant
<i>Acer campestre</i>	Hedge Maple	
<i>Acer ginnala</i>	Amur Maple	Drought tolerant
<i>Acer grandidentatum</i>	Bigtooth Maple	Utah's Choice selection
<i>Acer griseum</i>	Paperbark Maple	
<i>Acer nigrum</i>	Black Maple	Drought tolerant
<i>Acer palmatum</i>	Japanese Maple	
<i>Acer tataricum</i>	Tatarian Maple	Drought tolerant
<i>Acer truncatum</i>	Shantung Maple	
<i>Amelanchier alnifolia</i>	Serviceberry	
<i>Betula x avalzam</i>	Avalanche Birch	
<i>Beatula occidentalis</i>	Western Water Birch	Moderate water needs
<i>Celtis reticulata</i>	Netleaf Hackberry	
<i>Cercis canadensis</i>	Eastern Redbud	Drought tolerant
<i>Corylus colurna</i>	Turkish Filbert	
<i>Cotinus obovatus</i>	American Smokebush	
<i>Crataegus douglasii</i>	Black Hawthorn	
<i>Crataegus laevigata</i>	English Hawthorn	Few thorns
<i>Crataegus lavalleyi</i>	Lavalle Hawthorn	Drought tolerant
<i>Crataegus phaenopyrum</i>	Washington Hawthorn	
<i>Koelreuteria paniculata</i>	Golden Raintree	Drought tolerant
<i>Laburnum watereri</i>	Golden Chaintree	
<i>Malus hybrids</i>	Crabapple	New varieties recommended
<i>Persica Parrotia</i>	Persian Ironwood	
<i>Prunus x blireiana</i>	Flowering Plum	
<i>Prunus padus commutata</i>	Mayday Tree	Fruit stains concrete
<i>Prunus serrulata</i>	Flowering/Kwanzan Cherry	Drought tolerant
<i>Prunus virginiana</i>	"Canada Red" Chokecherry	
<i>Pyrus hybrids</i>	Flowering Pear	New varieties recommended
<i>Quercus gambelii</i>	Gambel Oak	Utah's Choice selection
<i>Sophora japonica</i>	Japanese Pagodatree	Messy; late summer flower
<i>Sorbus americana</i>	Mountain Ash	
<i>Syringa reticulata</i>	Japanese Tree Lilac	

### Deciduous Shrubs

#### Full Sun

<i>Amelanchier utahensis</i>	Utah Serviceberry	Utah's Choice selection
<i>Amorpha canescens</i>	Lead Plant	
<i>Amorpha nana</i>	Dwarf Lead Plant	
<i>Artemisia tridentate vaseyana</i>	Mountain Big Sagebrush	Utah's Choice selection
<i>Atriplex confertifolia</i>	Shadscale	Utah's Choice selection

<i>Berberis</i> species	Barberry	Thorns
<i>Buddleia davidii</i>	Butterfly Bush	
<i>Caragana</i> species	Siberian Peashrub	
<i>Caryopteris x clandonensis</i>	Blue Mist Spirea	
<i>Ceratoides lanata</i>	Winterfat	Very low water needs
<i>Cercocarpus</i> species	Mountain Mahogany	Utah's Choice selection
<i>Chamaebatiaria millefolium</i>	Fernbush	Utah's Choice selection
<i>Chrysothamnus nauseosus</i>	Rabbitbrush	Very low water needs
<i>Cornus stolonifera</i>	Red-twig Dogwood	Moderate water needs
<i>Cotinus coggygria</i>	Smokebush	
<i>Cowania mexicana</i>	Cliffrose	Very low water needs
<i>Cytisus scoparius</i>	Scotch Broom	Very low water needs
<i>Ephedra viridis</i>	Green Mormon Tea	Utah's Choice selection
<i>Euonymus alatus</i>	Burning Bush	Compact variety recommended
<i>Fallugia paradoxa</i>	Apache Plume	Utah's Choice selection
<i>Foresteria neomexicana</i>	New Mexico Privet	Low water needs
<i>Forsythia</i> species	Forsythia	
<i>Genista</i> species	Spanish Broom	Low water needs
<i>Kolkwitzia amabilis</i>	Beauty Bush	
<i>Ligustrum</i> species	Privet	Good for hedges
<i>Peraphyllum ramosissimum</i>	Squaw Apple	Low water needs
<i>Philadelphus microphyllus</i>	Littleleaf Mockorange	Utah's Choice selection
<i>Physocarpus</i> species	Ninebark	Low water needs
<i>Potentilla fruticosa</i>	Potentilla	Low water needs
<i>Prunus besseyi</i>	Western Sand Cherry	
<i>Prunus x cistena</i>	Purple-leaf Sand Cherry	
<i>Prunus virginiana</i>	Common Chokecherry	
<i>Purshia mexicana</i>	Cliffrose	Utah's Choice selection
<i>Quercus turbinella</i>	Shrub Live Oak	Low water needs
<i>Rhus trilobata</i>	Oakleaf Sumac	Utah's Choice selection
<i>Ribes aureum</i>	Golden Currant	Utah's Choice selection
<i>Rosa woodsii</i>	Woods Rose	Low water needs
<i>Salvia dorrii</i>	Desert Sage	Utah's Choice selection
<i>Sambucus nigra cerulean</i>	Blue Elderberry	
<i>Shepherdia argentea</i>	Silver Buffaloberry	Very low water needs
<i>Sorbaria sorbifolia</i>	False Spirea	
<i>Spiraea</i> species	Spirea	
<i>Syringa vulgaris</i>	Lilac	Low water needs
<i>Viburnum lantana</i>	Wayfaring Tree	
<i>Yucca harrimaniae</i>	Dwarf Yucca	Utah's Choice selection

### **Shade**

<i>Holodiscus dumosus</i>	Mountain Spray
<i>Kerria japonica</i>	Japanese Kerria
<i>Symphoricarpus</i> species	Snowberry
<i>Viburnum rhytidophyllum</i>	Leather-leaf Viburnum
<i>Viburnum x rhytidophylloides</i>	Blackhaw

### **Evergreen Shrubs**

<i>Cotoneaster</i> species	Cotoneaster	
<i>Juniperus</i> species	Juniper	Very low water needs
<i>Mahonia fremontii</i>	Utah Holly	Very low water needs
<i>Mahonia aquifolium</i>	Oregon Grape	Prefers shade
<i>Pinus mugo</i>	Mugo Pine	Low water needs
<i>Euonymus fortunei</i> 'Coloratus'	Purpleleaf Wintercreeper	

## Perennials

### Sun

<i>Achillea</i> species	Yarrow	Very low water needs
<i>Aethionema schistosum</i>	Stonecress	
<i>Agastache</i> species	Hyssop	Very low water needs (except <i>Agastache foeniculum</i> )
<i>Allium</i> species	Ornamental Allium	Low water needs
<i>Amsonia tabernaemontana</i>	Blue Star	
<i>Anacyclus depressus</i>	Mount Atlas Daisy	
<i>Anaphalis margaritacea</i>	Pearl Everlasting	
<i>Antennaria</i> species	Pussy Toes	
<i>Arabis caucasica</i>	Rock Cress	
<i>Arenaria macradenia</i>	Showy Sandwort	Utah's Choice selection
<i>Armeria maritime</i>	Sea Pinks/Sea Thrift	
<i>Asclepias tuberosa</i>	Butterfly Weed	
<i>Aster</i> species	Aster	
<i>Astragalus utahensis</i>	Utah Lady Finger	Utah's Choice selection
<i>Aurinia saxatilis</i>	Basket of Gold	
<i>Baileya multiradiata</i>	Desert Marigold	Low water needs
<i>Ballota pseudodictamnus</i>	Horehound	
<i>Berlandiera lyrata</i>	Chocolate Flower	
<i>Brodiaea</i> species	Brodiaea	
<i>Callirhoe involucrata</i>	Poppy Mallow/Wine Cups	Low water needs
<i>Calylophus</i> species	Sundrops	
<i>Campanula</i> species	Bell Flower	
<i>Castilleja chromosa</i>	Indian Paintbrush	Utah's Choice selection
<i>Catananche caerulea</i>	Cupid's Dart	
<i>Centranthus ruber</i>	Jupiter's Beard/Red Valerian	Low water needs
<i>Colchicum autumnale</i>	Autumn Crocus	
<i>Coreopsis verticillata</i>	Thread-leaf Coreopsis	
<i>Crocus</i> species	Crocus	
<i>Dianthus x allwoodii</i>	Dianthus/Pinks	
<i>Dianthus deltoids</i>	Dianthus/Pinks	
<i>Dianthus gratianopolitanus</i>	Dianthus/Pinks	
<i>Dianthus plumaris</i>	Dianthus/Pinks	
<i>Diascia integerrima</i>	Twinspurs	
<i>Dicamus albus</i>	Gas Plant	
<i>Echinacea</i> species	Cone Flower	
<i>Echinops ritro</i>	Globe Thistle	
<i>Erigeron</i> species	Fleabane	
<i>Eriogonum</i> species	Buckwheat	Low water needs
<i>Eriogonum umbellatum</i>	Sulfurflower Buckwheat	Utah's Choice selection

<i>Erygium amethystinum</i>	Sea Holly	
<i>Gallardia species</i>	Blanket Flower	
<i>Gaura lindheimeri</i>	Gaura	
<i>Geranium viscosissimum</i>	Sticky Geranium	Utah's Choice selection
<i>Geum species</i>	Geum	
<i>Gypsophila paniculata</i>	Baby's Breath	
<i>Hedysarum boreale</i>	Utah Sweetvetch	Utah's Choice selection
<i>Helenium hoopesii</i>	Helen's Flower/Sneezeweed	
<i>Helianthemum nummularium</i>	Sunrose	
<i>Hemerocallis x species</i>	Daylilies	
<i>Hesperaloe parviflora</i>	Red Yucca	
<i>Hymenoxis aucalis</i>	Sundancer Daisy/Perky Sue	Utah's Choice selection
<i>Iberis sempervirens</i>	Candytuft	
<i>Iliamna rivularis</i>	Maple Mallow	Utah's Choice selection
<i>Iris, Bearded hybrids</i>	Bearded Iris	Low water needs
<i>Kniphofia uvaria</i>	Red Hot Poker	
<i>Lavandula augustifolia</i>	Lavender	
<i>Leucanthemum x superbum</i>	Shasta Daisy	
<i>Leucojum aestivum</i>	Snowflake	
<i>Liatris spicata</i>	Liatris/Gayfeather	
<i>Limonium latifolium</i>	Sea Lavender	
<i>Linum species</i>	Flax	
<i>Melampodium leucanthum</i>	Blackfoot Daisy	
<i>Mirabilis multiflora</i>	Desert Four O'Clock	Utah's Choice selection
<i>Monardella odoratissima</i>	Little Beebalm	Utah's Choice selection
<i>Narcissus species</i>	Daffodils/Narcissus	
<i>Nepeta x faassenii</i>	Catmint	
<i>Oenothera marcocarpa</i>	Evening Primrose	Low water needs
<i>Oenothera pallida</i>	Evening Primrose	Low water needs
<i>Oenothera caespitosa</i>	Fragrant Evening Primrose	Utah's Choice selection
<i>Origanum species</i>	Oregano	
<i>Papaver orientale</i>	Oriental Poppy	Low water needs
<i>Penstemon cyananthus</i>	Firecracker Penstemon	Utah's Choice selection
<i>Penstemon palmeri</i>	Palmer Penstemon	Utah's Choice selection
<i>Penstemon utahensis</i>	Utah Penstemon	Utah's Choice selection
<i>Penstemon whippleanus</i>	Whipple Penstemon	Utah's Choice selection
<i>Perovskia atriplicifolia</i>	Russian Sage	Low water needs
<i>Phlomis species</i>	Jerusalem Sage	
<i>Potentilla species</i>	Cinquefoil	
<i>Psilostrophe tagetina</i>	Paper Flower	
<i>Pulsatilla vulgaris</i>	Pasque Flower	
<i>Ratibida columnifera</i>	Mexican Hat	
<i>Rudbeckia species</i>	Black-eyed Susan	
<i>Salvia species</i>	Salvia/Sage	
<i>Salvia x sylvestris 'May Night'</i>	May Night Salvia	
<i>Santolina species</i>	Santolina/Lavender Cotton	
<i>Scabiosa caucasica</i>	Pincushion Flower	
<i>Sedum species</i>	Sedum/Stonecrop	Low water needs
<i>Sempervivum tectorum</i>	Hens and Chicks	
<i>Sphaeralcea species</i>	Globemallow	
<i>Sphaeralcea grossulariifolia</i>	Gooseberryleaf Globemallow	Utah's Choice selection



<i>Teucrium chamaedrys</i>	Germander	
<i>Thymus</i> species	Thyme	
<i>Tithonia rotundifolia</i>	Mexican Sunflower	
<i>Tulipa</i> species	Tulips	
<i>Veronica spicata</i>	Spike Speedwell Veronica	
<i>Viguiera multiflora</i>	Showy Goldeneye	Low water needs
<i>Yucca filamentosa</i>	Yucca/Adam's Needle	Low water needs
<i>Zauschneria latifolia</i>	Firechalice	Utah's Choice selection
<i>Zinnia grandiflora</i>	Desert Zinnia	Low water needs
<i>Zizophora clinopodioides</i>	Blue Mist Bush	

### **Shade**

<i>Aquilegia</i> species	Columbine
<i>Bergenia cordifolia</i>	Bergenia
<i>Corydalis lutea</i>	Yellow Corydalis
<i>Epimedium</i> species	Barrenwort/Epimedium
<i>Geranium endressii</i>	Cranesbill
<i>Geranium sanguineum</i>	Cranesbill
<i>Geranium viscosissimum</i>	Cranesbill
<i>Heuchera</i> species	Coral Bells
<i>Smilacina racemosa</i>	False Solomon Seal

### **Ornamental Grasses**

#### **Full Sun**

<i>Andropogon gerardii</i>	Big Bluestem	
<i>Aristida purpurea</i>	Three Awn Grass	
<i>Bouteloua curtipendula</i>	Side Oats Grama Grass	Utah's Choice selection
<i>Bouteloua gracilis</i>	Blue Grama Grass	
<i>Calamagrostis acutiflora</i>	Feather Reed Grass	
<i>Erianthus ravennae</i>	Ravenna Grass/Hardy Plume Grass	
<i>Festuca ovina glauca</i>	Blue Fescue	
<i>Helictotrichon sempervirens</i>	Blue Oat Grass/Blue Avena	
<i>Leymus cinereus</i>	Great Basin Wildrye	Utah's Choice selection
<i>Miscanthus sinensis</i>	Maiden Grass	
<i>Panicum</i> species	Switch Grass	
<i>Schizachyrium scoparium</i>	Little Bluestem	Utah's Choice selection
<i>Sorghastrum nutans</i>	Indian Grass	
<i>Sporobolus airoides</i>	Alkali Sacaton Grass	Utah's Choice selection
<i>Stipa comata</i>	Needle and Thread Grass	
<i>Stipa hymenoides</i>	Indian Rice Grass	Utah's Choice selection
<i>Stipa tenuissima</i>	Mexican Grass	

#### **Shade**

<i>Dechampsia caespitosa</i>	Tufted Hair Grass
<i>Molina caerulea</i>	Purple Moor Grass

### **Groundcovers**

<i>Antennaria</i> species	Pussy Toes
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<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	
<i>Buchloe dactyloides</i>	Buffalograss	Low water needs
<i>Cerastium tomentosum</i>	Snow-in-Summer	
<i>Delosperma</i> species	Ice Plant	Low water needs
<i>Helianthemum nummularium</i>	Sun Rose	
<i>Hypericum calycinum/reptans</i>	St. Johnswort	
<i>Juniperus horizontalis</i>	Horizontal Juniper	Low water needs
<i>Mahonia repens</i>	Creeping Mahonia	Utah's Choice selection
<i>Phlox subulata</i>	Creeping Phlox	
<i>Sedum</i> species	Sedum	Low water needs
<i>Stachys byzantine</i>	Lamb's Ear	Low water needs
<i>Teucrium chamaedrys</i>	Germander	
<i>Thymus</i> species	Thyme	Low water needs
<i>Veronica liwanensis</i>	Turkish Veronica	
<i>Veronica rupestris</i>	Creeping Veronica	

### Vines

<i>Campsis radicans</i>	Trumpet Vine	Extremely vigorous
<i>Clematis tangutica</i>	Clematis	
<i>Polygonum aubertii</i>	Silverlace Vine	
<i>Wisteria</i> species	Wisteria	

### Trees to be planted in naturalized areas

<i>Acer glabrum</i>	Rocky Mountain Maple	Plant at higher elevations
<i>Acer grandidentatum</i>	Bigtooth Maple	
<i>Chilopsis linearis</i>	Desert Willow	
<i>Juniperus osteosperma</i>	Utah Juniper	
<i>Juniperus scopulorum</i>	Rocky Mtn Juniper	Plant at higher elevations
<i>Pinus aristata</i>	Bristlecone Pine	
<i>Pinus edulis</i>	Pinyon Pine	
<i>Pinus flexilis</i>	Limber Pine	
<i>Populus</i>	Poplar	
<i>Populus fremonti</i>	Cottonwood	
<i>Quercus gambelii</i>	Gambel Oak	

### Unacceptable Trees and Shrubs

<i>Acer negundo</i>	Box Elder	Volunteers easily; messy
<i>Acer saccharinum</i>	Silver Maple	Needs too much water
<i>Ailanthus</i>	Tree of Heaven	Volunteers easily; messy
<i>Betula</i> species	White Birch	Disease prone
<i>Celtis occidentalis</i>	Common Hackberry	Invasive on Wasatch Front
<i>Elaeagnaceae angustifolia</i>	Russian Olive	Volunteers easily; messy
<i>Populus tremloides</i>	Quaking Aspen	Disease prone
<i>Pyracantha</i>	Firethorn Shrub	Grows aggressively
<i>Robinia pseudoacacia</i>	Black Locust	Volunteers easily; messy
<i>Salix</i> species	Willow	Needs too much water
<i>Ulmus Americana</i>	American Elm	Disease prone
<i>Ulmus pumilla</i>	Siberian Elm	Volunteers easily; messy

## 6.4 DESIGN REVIEW CHECKLIST

*[To be attached]*

### CHAPTER 7 – Commercial Development Areas

The original Oquirrh Mountain Ranch master plan does not include commercial development areas, but it may be deemed advisable in the future to include some form of commercial development. Commercial developments in Oquirrh Mountain Ranch may take a variety of physical forms depending on location and the type of businesses located within.

#### *Types of Development*

Commercial development is may include neo-traditional neighborhood commercial developments that are pedestrian oriented and primarily serve individual neighborhoods as well as traditional commercial strips and pad sites that serve the entire Oquirrh Mountain Ranch community. Depending on the location and type of development, vertical and horizontal mixed uses may be included, and are encouraged to increase the vitality of the community.

#### *Building Orientation*

Buildings should be oriented toward the primary street on which they are located, and set close to the street in order to frame the street and create a pleasant pedestrian environment.

#### *Parking*

Parking lots shall be designed to be safe, efficient, convenient and attractive, but should not visually dominate a site. When possible, parking lots should be located to the rear or sides of buildings.

- The number and dimensions of parking spaces will be per City standards.
- Landscaped islands shall be used to define parking lot entrances, the ends of all parking aisles, and the location of access drives, and to provide pedestrian refuge areas and walkways.
- Parallel and/or angled parking is encouraged along the fronts of buildings to promote walking and reduce the impact of large parking lots.
- Parking lots shall be screened from adjacent streets and public areas with vegetation, berms, and/or landscape walls.

#### *Service Areas*

Loading and service areas, including trash collection and storage facilities, shall be located to minimize the visual impact from public thoroughfares, primary building entries and neighboring properties. Rear building loading is preferred, but side loading will be allowed if properly designed and screened.

- Service areas on the fronts of buildings are prohibited. When rear service areas are not provided, oversized front doors may be used to service commercial establishments.
- Rear and side service and delivery activities should be separated from public access and screened from public view with walls, fences, and/or landscaping of sufficient height and density. Walls and fencing shall be compatible with the primary structure. Chain link fencing is not allowed.

**Service areas should not be visible from public thoroughfares or adjacent residential properties.**

## **Mixed Use and Civic Building Guidelines**

Although important, the commercial and civic buildings are not the predominant building types within Oquirrh Mountain Ranch. As such, they will be closely monitored by the Oquirrh Mountain Ranch DRC to ensure that these buildings do not detract from the residential neighborhoods. These guidelines are intended to provide a baseline for good architecture and a building should surpass these standards for great design. All exterior architecture in Oquirrh Mountain Ranch shall be designed specifically for its location; “stock” plans and elevations must meet all guideline criteria.

### ***Site Relationships***

#### *Special Locations*

Similar to residential buildings, commercial and civic buildings located on prominent corners, parkways or open spaces should recognize their special locations within the neighborhood by having enhanced architecture.

- Buildings located at intersections with gateways to neighborhoods shall be defined with prominent architectural features incorporating strong massing elements to create interest and frame views. Using massing and architectural elements to add emphasis to building corners is required.
- Buildings that form a thoroughfare, square or special intersection shall relate to each other through color, material and/or form.
- All Exposed Elevations shall have articulation that is similar to a front elevation in design. Buildings on corner lots shall address both thoroughfares with similarly designed architectural features and materials.

#### *Streetscape and Pedestrian Oriented Design*

The emphasis on neighborhood living should be carried over to the commercial and civic areas of Oquirrh Mountain Ranch by implementing the principles of walkability, defined spaces and streetscapes with variety and harmony. Inviting, visually interesting building facades, street-oriented entries and human scaled detailing provide an active pedestrian experience.

- Streetscapes shall be designed with attention to detail and human-scale proportions.
- Building design and site location shall facilitate pedestrian access between buildings.
- Buildings should relate to each other and to the residential architecture of Oquirrh Mountain Ranch in scale, materials and details. Diverse building types can be related through similarities in material, form, fenestration, cornice lines or other architectural features.
- Decorative features should be utilized to create interest and scale along all public frontages of the building.
- Where practical buildings shall be designed so as to block views of parking lots.

### ***Exterior Architecture***

#### *Building form*

#### Building massing

Building massing should enhance entrances into the site, create interesting streetscapes and punctuate important corners.

- Buildings should change in architectural expression at modules of 20 feet and overall rhythms of 40 to 60 feet to promote diversity, interest, and a fine grained character.
- Individual designs should be balanced with common themes to result in an identity for the area.

- Individual building height and massing within the civic and commercial areas shall focus on breaking up the horizontal profile and overall massing effect of each building and work to create interesting spaces between buildings.
- In some cases, massing strategies can be used to reduce the perceived scale of a building, giving the impression of several buildings placed side by side.
- Gable and shed roofs may be integrated with flat roofs and parapets to create interest and to break the horizontal profile of the building as necessary.
- Cornice treatments shall be reinforced by plane and/or material changes (e.g. painted cornice lines are prohibited).
- Portions of buildings having functions that restrict the use of glazing shall use other architectural features or methods to reduce their scale.
- Signage shall play a secondary role in the building facade.

#### Visual Balance and Scale

- The building's special architectural features and treatments shall not be restricted to a single façade. All sides of a building open to view by the public shall display similar levels of quality and architectural interest.
- Smaller building components should be balanced while retaining the primary massing of the overall building.
- Each building taller than 30' in height shall be designed with a base additionally articulated to provide human scale and include a highly visible entrance feature.
- Buildings shall use horizontal and/or vertical variation as a tool to break down the building mass.

#### *Building styles*

There are no prescribed building styles for the civic and commercial sectors of Oquirrh Mountain Ranch; the Oquirrh Mountain Ranch DRC will have full control over what may be approved.

#### *Service Areas and Mechanical Equipment*

Service areas and mechanical equipment shall have a secondary role in the perception of the building.

- Utility meters, transformers, phone and cable boxes, air conditioning units, and evaporative coolers shall be screened from public view. Screen walls and/or landscaping are required treatments.
- Loading docks, on-site equipment and other service areas shall be located so that they are not visible from the streets or open spaces. A combination of building design, walls and landscaped areas can be used to prevent visibility.
- Screening of rooftop equipment shall be done with either extended parapet walls or freestanding screen walls.
- All screen walls shall be built of materials and colors that match or are compatible with the dominant materials and colors found on the building.
- If present, passive and active solar energy systems visible from the street shall be integrated into the architecture of the building.

#### *Building Elements*

Building elements shall be used to break down the scale of larger buildings.

- All building elements and their related trim and materials shall reinforce and be appropriate to the architectural style of the building.
- Building elements should be integral to the building's form and shall not give the perception of a fake or "applied" façade element.

- All building elements, including but not limited to entries, bays and columns shall be properly proportioned for the façade.
- Principal building entries shall be emphasized by the building design. The principal entries shall be oriented toward the principal thoroughfare, easily identified and well detailed. Secondary access points may also be defined as necessary.
- Plane changes and/or material or color changes at entries are encouraged.
- Glazing is a fundamental building element and shall be used responsibly:
  - Glazing shall be used to reinforce the massing concept for the building as well as emphasize human scale.
  - Utilizing traditional fenestrations is encouraged, such as windows with operable sections, clean lines that allow the interior to be naturally day-lit, and proportions that reflect the building form and uses and further emphasize human scale.
  - Clear, low-E insulated glazing is encouraged. Highly reflective glazing is prohibited.
  - Shading devices that supplement the orientation of the buildings are highly encouraged.
- Decks and Balconies should be integrated into the form of the building so as to avoid a multitude of ill-composed cantilevered elements.

### ***Building Materials & Colors***

#### *Building Materials*

Materials provide an opportunity to reinforce and elaborate building design. The Residential Guideline Exterior Building Materials provisions shall also apply to non-residential buildings. In addition to those provisions, the following criteria apply:

- All materials and colors shall reinforce and be appropriate to the architectural style of the building.
- Commercial and civic building materials shall be selected for their appearance and durability in order to promote a high quality atmosphere for an extended period of time.
- Quality accent materials and attention to detail shall be employed along high pedestrian contact areas and particularly along ground level storefront areas. High quality, durable materials such as masonry, architectural concrete masonry units, architectural pre-cast, stone, and architectural metal panels and glass should be used for street facing facades and primary entrances.
- Large walls of monolithic glass are discouraged. Instead, large glass areas should incorporate a variety of mullion patterns, bay dimensions and other detailing to provide human scale.
- All visible roof areas shall be surfaced with attractive and durable commercial materials.
- Permitted wall cladding materials include, but are not limited to:
  - Brick
  - Stone
  - Synthetic or hardcoat stucco—Synthetic stucco (or EIFS) shall not be used where it comes into regular contact with people or vehicles to prevent the finish from being susceptible to damage. If synthetic stucco or EIFS is used as an exterior cladding system, then all necessary subsurface ventilation and drainage shall be provided to prevent deterioration of finish or structure.
  - Cementitious siding
  - Metal
  - Architecturally finished concrete
  - Storefront window systems
- Prohibited Materials
  - Tilt-up wall systems that are primarily "structural" in appearance (High quality architectural grade tilt-up may be considered).

- Common CMU materials are prohibited as primary wall construction unless painted. Colored and architectural grade CMU is encouraged.

### *Color*

The Residential Guideline Color provisions shall also apply to non-residential buildings.

### ***Additional Provisions by Building Type***

In addition to the general Commercial and Civic Guidelines concerning site relationships, exterior architecture, building elements, materials, and colors, specific building types shall meet to the following provisions.

#### *Retail, Commercial and Recreation Facilities*

These buildings shall be inviting to pedestrians. Design elements such as entries, windows, lighting, railings, and landscape plantings shall be provided along the streetscape. Elements that provide some shade such as trellises, awnings, arcades, or plantings are encouraged.

- Retail buildings shall have a maximum of 80% storefront glazing on street-facing facades. Bulkheads lower than two feet (2'-0") may be used in combination with the glazing.
- Windows and doorways shall provide functional transparency between the interior and exterior of the building and create enhanced pedestrian connections at the street level.
- Passageways and alleys shall be designed as a part of the pedestrian circulation element. These corridors shall be well maintained and designed to be functional yet interesting spaces.
- Plaza or seating areas are encouraged in addition to landscape requirements in the front of buildings; outdoor seating is encouraged for restaurants.

#### *Churches*

It is encouraged for churches to use architectural elements to evoke traditional church imagery. Churches shall have:

- A vertical element that will serve as a landmark
- A symmetrical gabled roof form facing the street
- An axis perpendicular to the street
- A front façade and an entrance facing the street
- Proximity to the street; parking lots shall be located only to the side or rear of the building

#### *Schools and Other Civic Buildings*

The integration of publicly used buildings is an asset to creating livable neighborhoods.

1. Buildings shall be community-oriented. They shall be integrated into the surrounding neighborhood and be designed and scaled appropriately.
2. Building design shall promote pedestrian access.
3. It is encouraged that buildings be designed for multiple uses.
4. Designs should be flexible to the communities changing needs in order to promote a lengthy community/civic partnership.
5. Schools shall also meet the following requirements:
  - Small schools are encouraged due the ease of integration into the neighborhood.
  - Schools shall be located such that the number of students that can walk or bike to the facility is maximized. Adjacency to large thoroughfares is discouraged, due to pedestrian conflict issues and traffic congestion.
  - Daylighting tactics shall be used to promote student performance.
  - Designs are encouraged to support community use of the school facilities after school hours.
  - Schools shall be located in proximity to the street; parking lots shall be located only to the side or rear of the building.



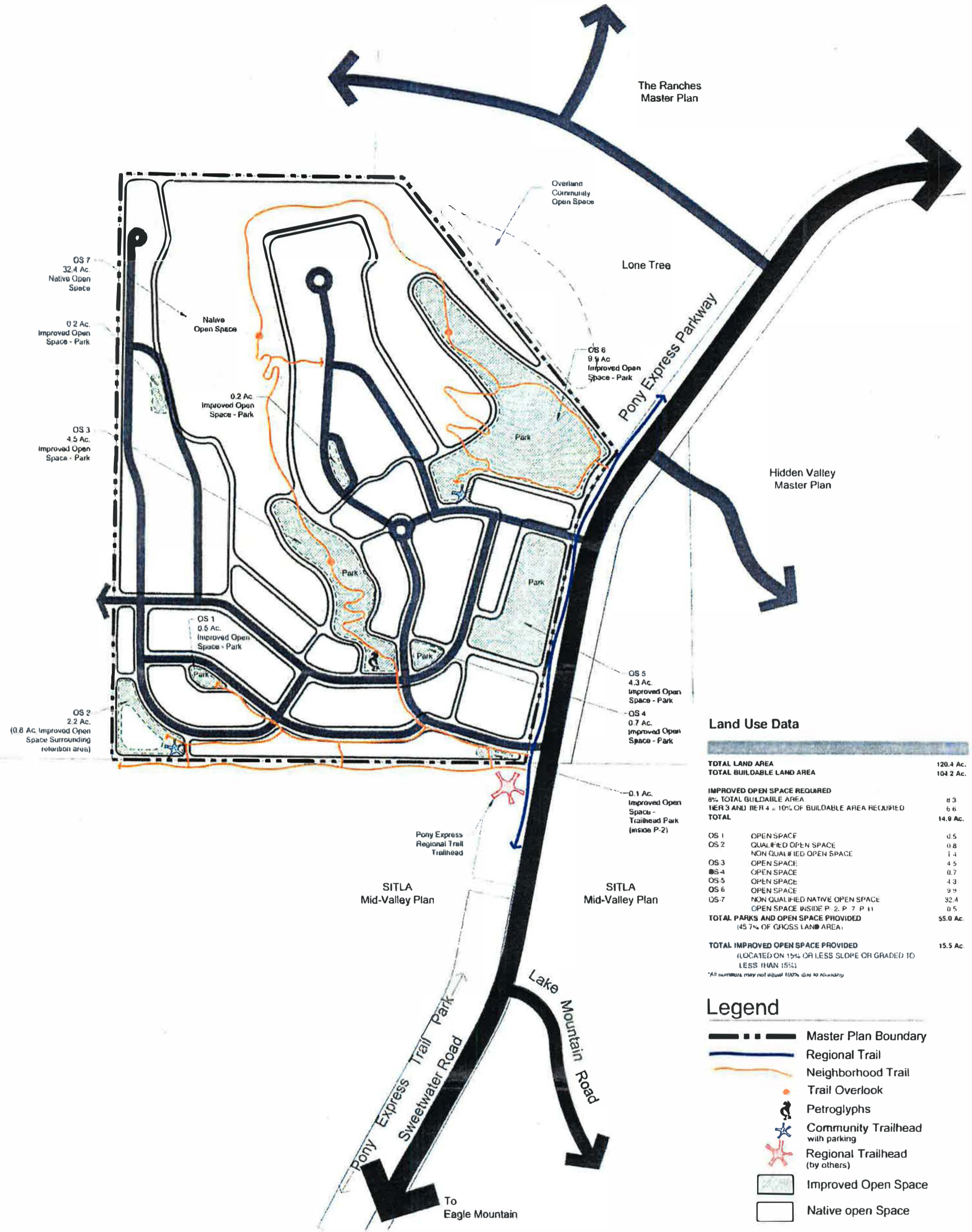


# **Exhibit F**

**[Parks and Open Space Plan]**

# Exhibit G

[Parks and Open Space Design Drawings]



**Land Use Data**

TOTAL LAND AREA	120.4 Ac.
TOTAL BUILDABLE LAND AREA	104.2 Ac.
<b>IMPROVED OPEN SPACE REQUIRED</b>	
8% TOTAL BUILDABLE AREA	8.3
10% OF BUILDABLE AREA REQUIRED	10.4
<b>TOTAL</b>	<b>14.9 Ac.</b>
OS 1 OPEN SPACE	0.6
OS 2 QUALIFIED OPEN SPACE	0.8
NON QUALIFIED OPEN SPACE	1.4
OS 3 OPEN SPACE	4.5
OS 4 OPEN SPACE	0.7
OS 5 OPEN SPACE	4.3
OS 6 OPEN SPACE	9.4
OS 7 NON QUALIFIED NATIVE OPEN SPACE	32.4
OPEN SPACE INSIDE P-2, P-7, P-11	0.5
<b>TOTAL PARKS AND OPEN SPACE PROVIDED</b>	<b>55.0 Ac.</b>
(45.7% OF GROSS LAND AREA)	
<b>TOTAL IMPROVED OPEN SPACE PROVIDED</b>	
(LOCATED ON 15% OR LESS SLOPE OR GRADED TO LESS THAN 15%)	15.5 Ac.

\*All numbers may not equal 100% due to rounding

**Legend**

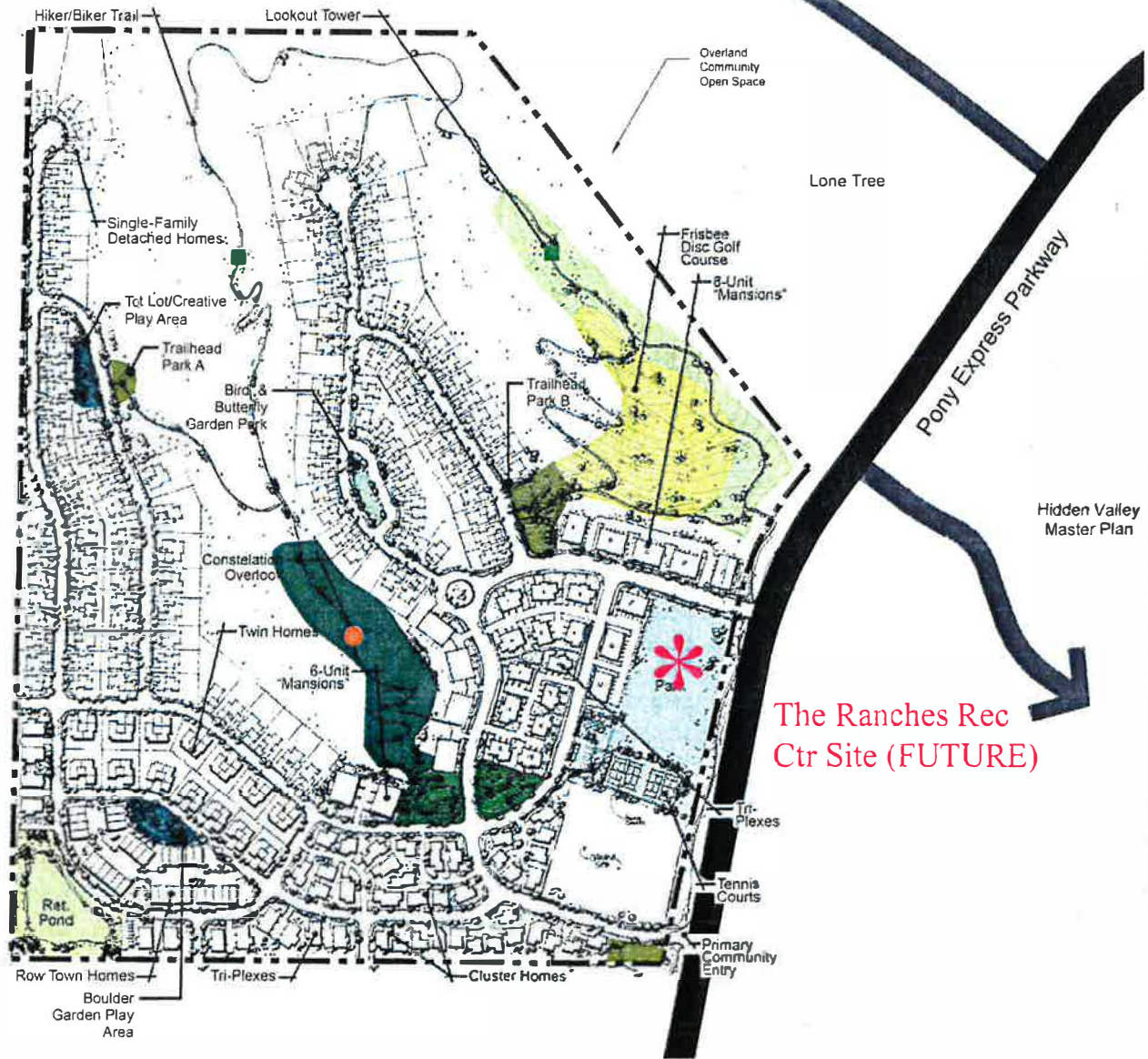
- Master Plan Boundary
- Regional Trail
- Neighborhood Trail
- Trail Overlook
- Petroglyphs
- Community Trailhead with parking
- Regional Trailhead (by others)
- Improved Open Space
- Native open Space

**Oquirrh Mountain  
Parks & Open Space Plan**

Scale: 1" = 100'  
July 22, 2016



-  Neighborhood Community Ctr/Pool
-  Neighborhood Park/Tot Lot
-  Garden Park/ Pocket Park
-  Petroglyph Park
-  Trailhead Park
-  Hilltop/Native Park
-  Active Park
-  Frisbee Golf Park
-  Tower Structure
-  Trail Overlook



Improved Parks and Open Space Plan

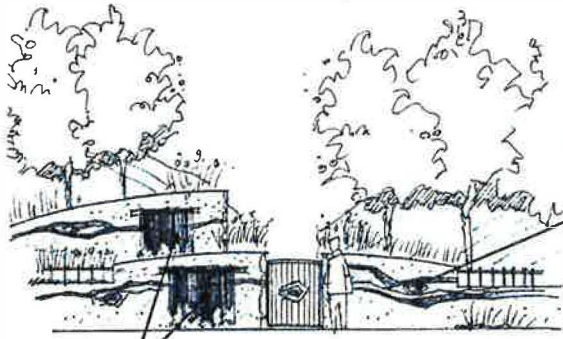
# Oquirrh Mountain Ranch

## Parks and Open Space



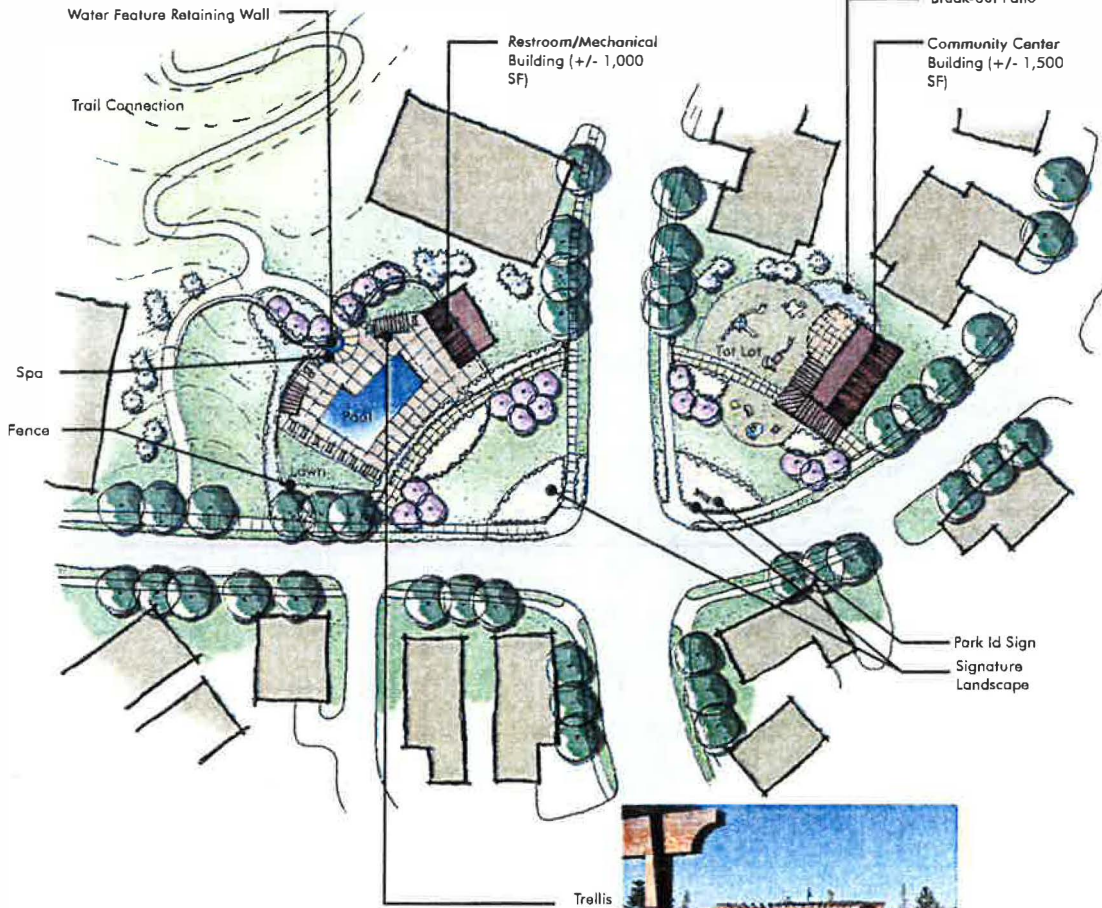
May 19, 2008





"Petroglyphs" or Pattern  
Incorporated into  
Wall and Gate

Water  
Cascades



Trellis

Scale: 1"=30'-0"  
0 15 30 60 NORTH

Community Center A/Tot Lot (East Side) and Pool Area (West Side)

# Oquirrh Mountain Ranch

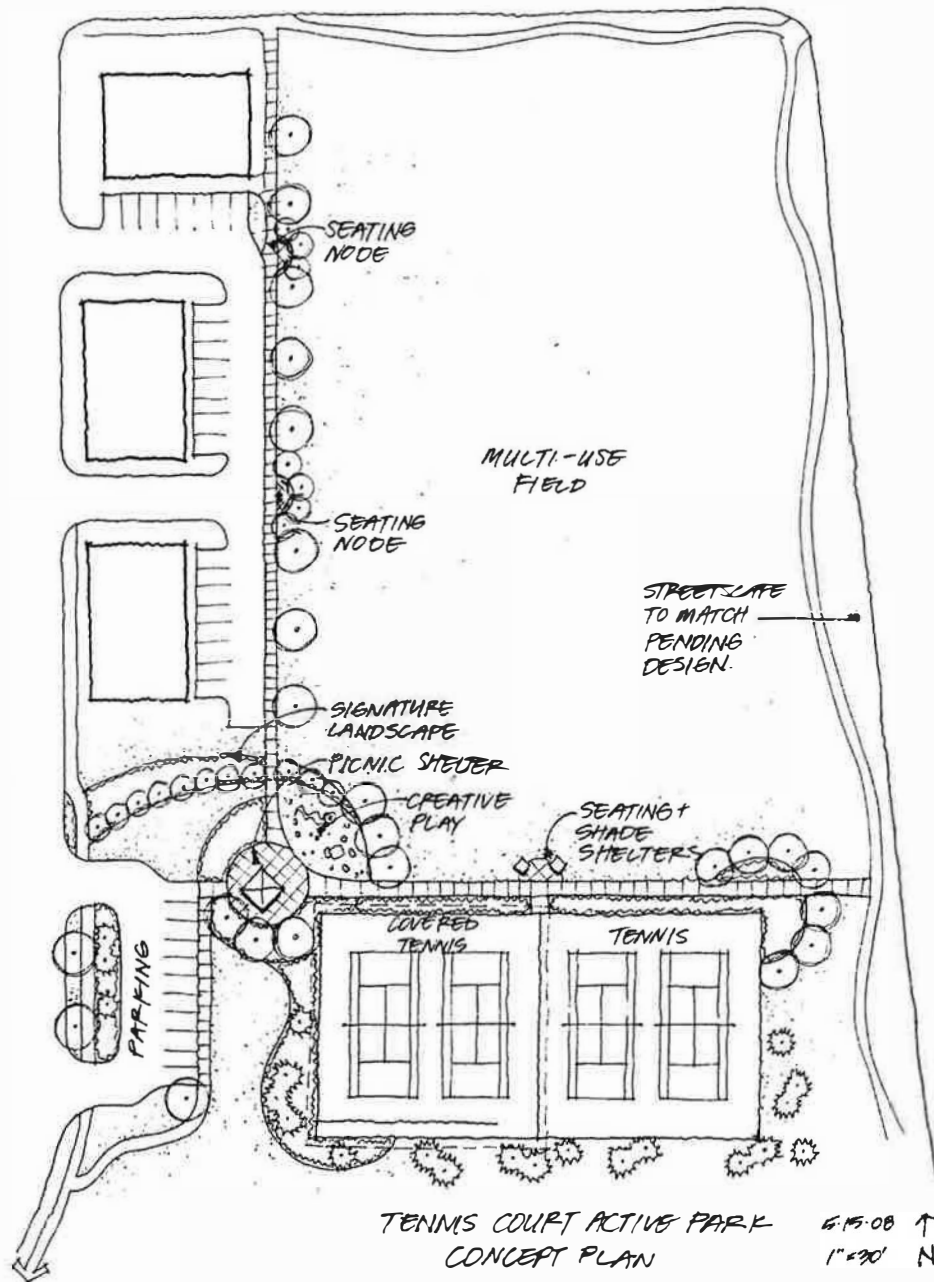
Parks and Open Space



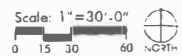
May 19, 2008



PAPER RANCH



Tennis Court Active Park

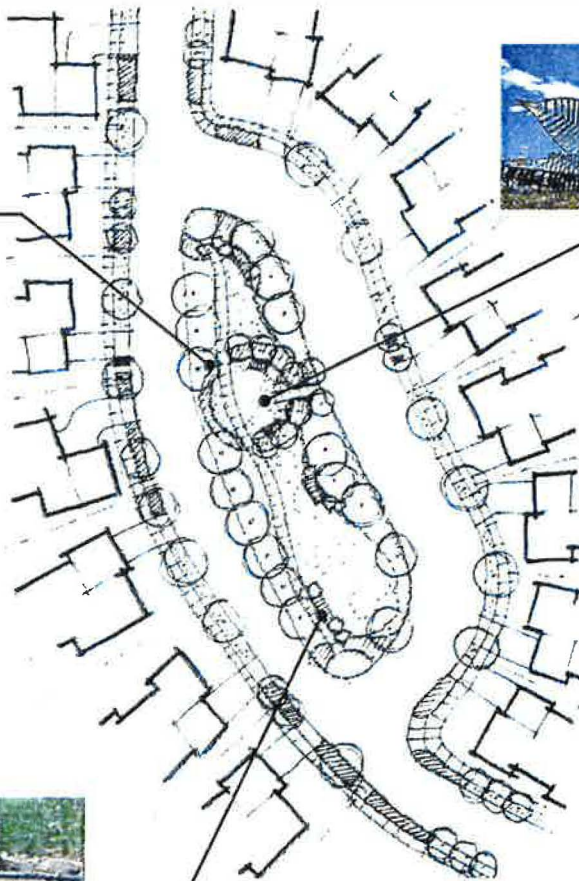




"Butterfly-friendly" Plant Palette  
(Butterfly Bush shown)



Bird & Butterfly Garden - with  
Sculptural Benches and Birdhouse  
Elements



3 Bench Seat/Stone Wall and Boulder  
"Outcroppings" located throughout the Garden Park

### Bird & Butterfly Garden Park (New "Eyebrow" Park)

Scale: 1" = 20'-0"  
0 10 20 40 NORTH

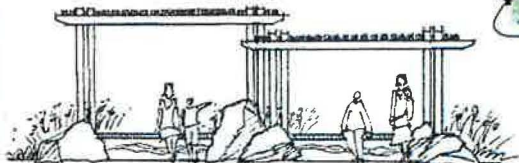
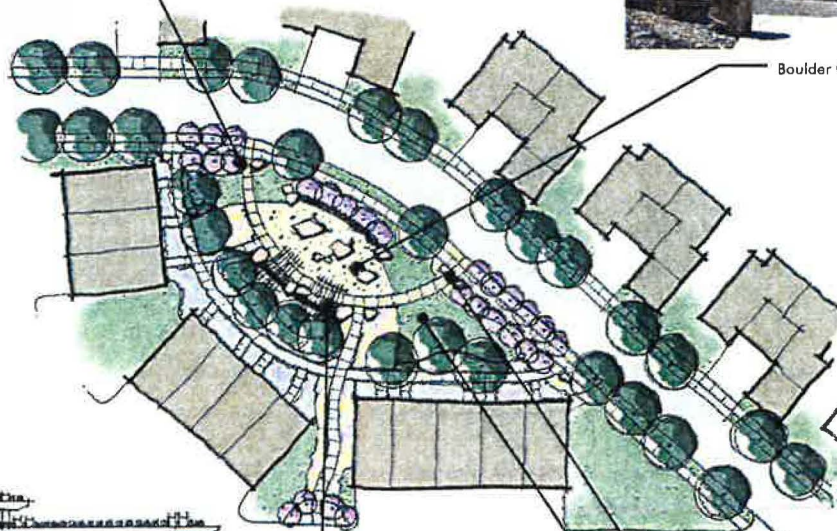




Informal Boulder Gateway and Signature Landscape



Boulder Garden/Play Area



Shade Structure with Stone + Bench Seating

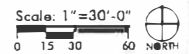
Informal Boulder Gateway and Signature Landscape

Play Lawn



Bench Seat Incorporated into Stone Wall and Boulder "Outcroppings"

### Boulder Garden Play Area

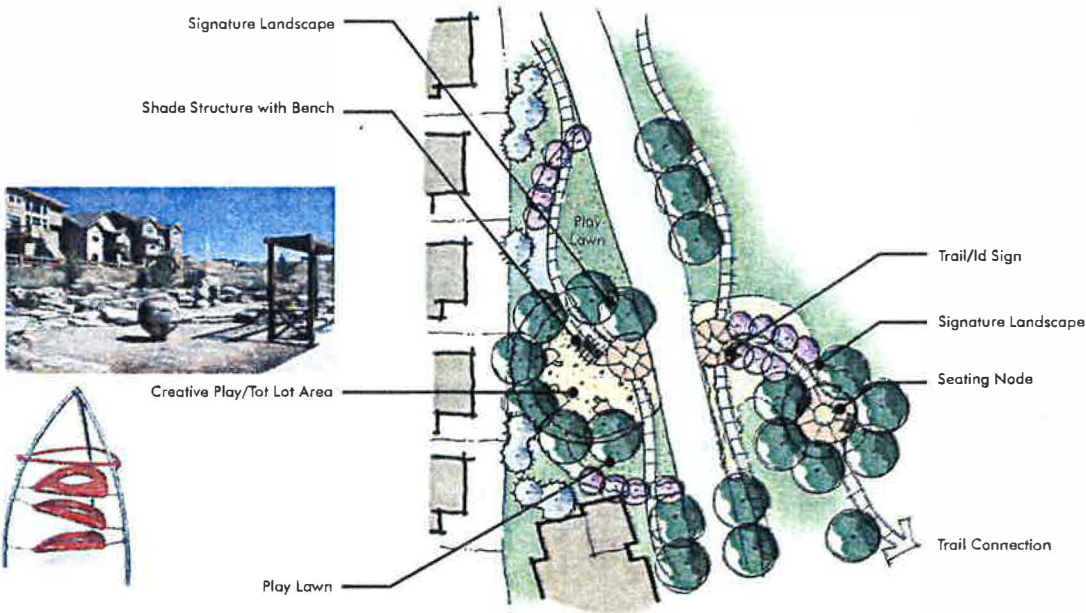


# Oquirrh Mountain Ranch

Farks and Open Space







Tot Lot/Creative Play Area (West Side) and Trailhead Park A

Scale: 1"=30'-0"  
 0 15 30 60 NORTH



Frisbee Golf Gateway



Picnic Shelter

Trail Connection

Signature Landscape

Picnic Lawn & Tables

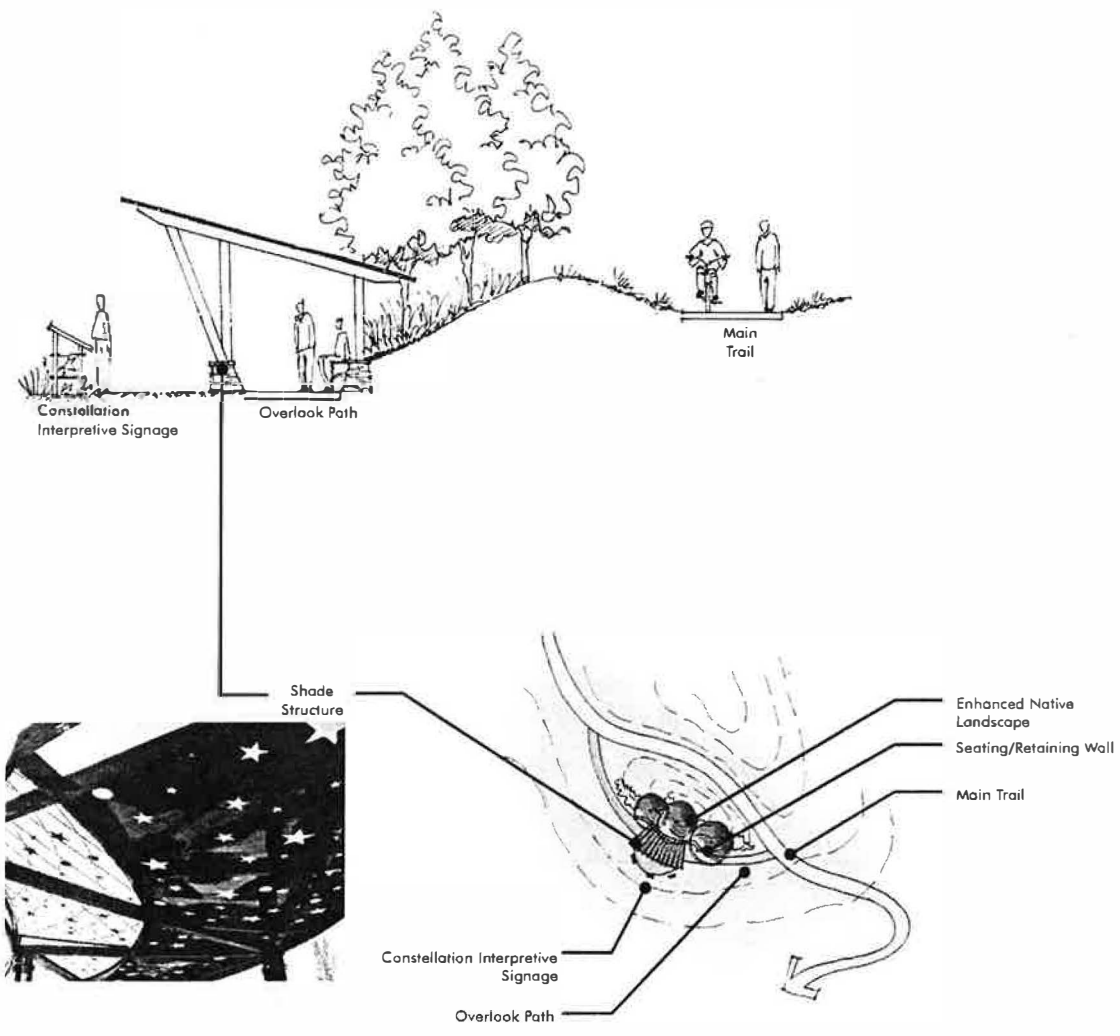


Trailhead Park B

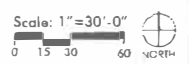
# Oquirrh Mountain Ranch Parks and Open Space

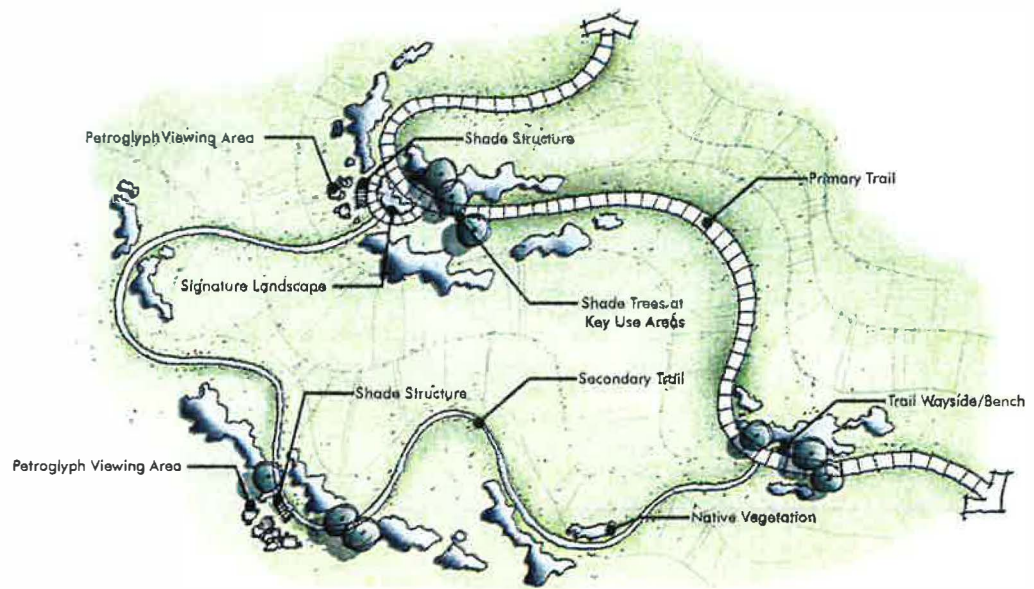


May 19, 2008

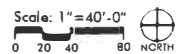


Constellation Overlook





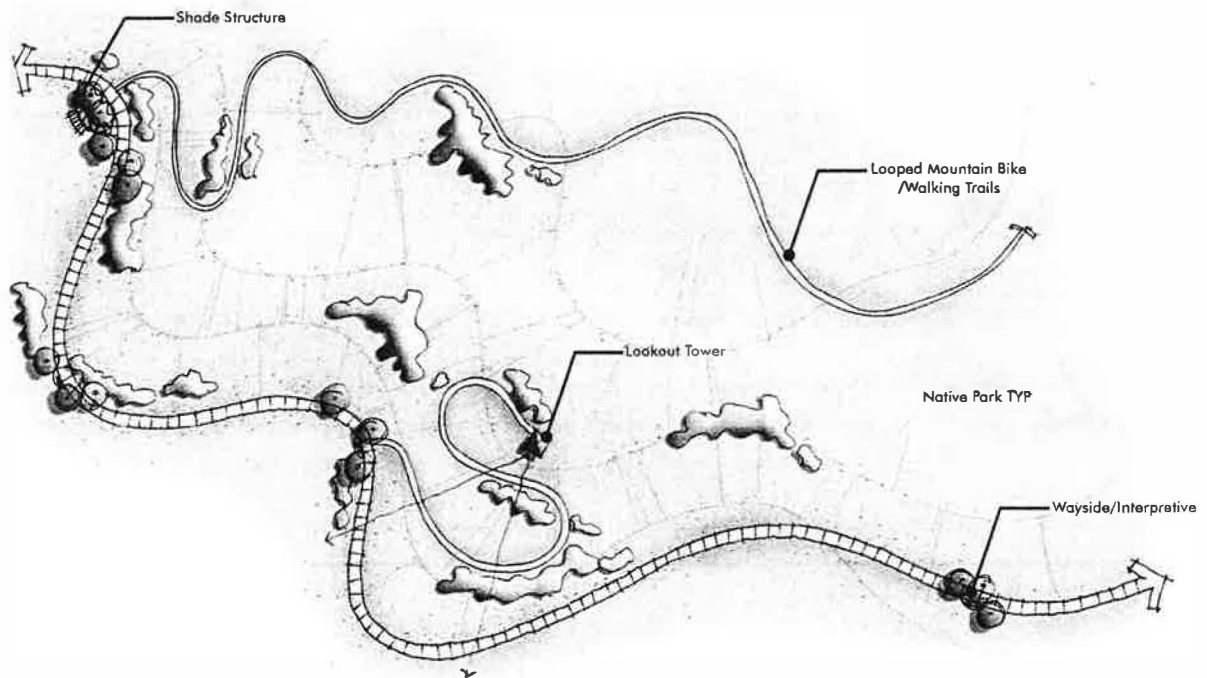
Petroglyph Park



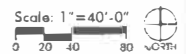
Oquirrh Mountain Ranch  
 Parks and Open Space

**SAGE**  
 COMMUNITIES  
 May 19, 2008





Hilltop Native Park



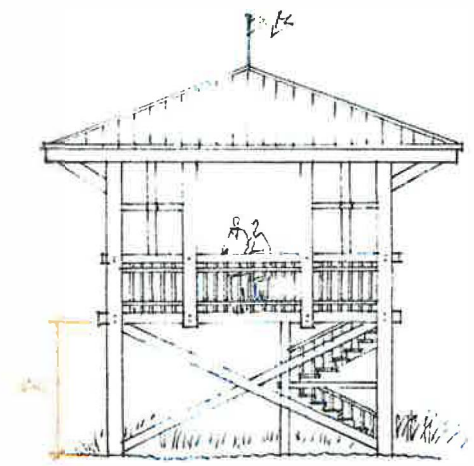
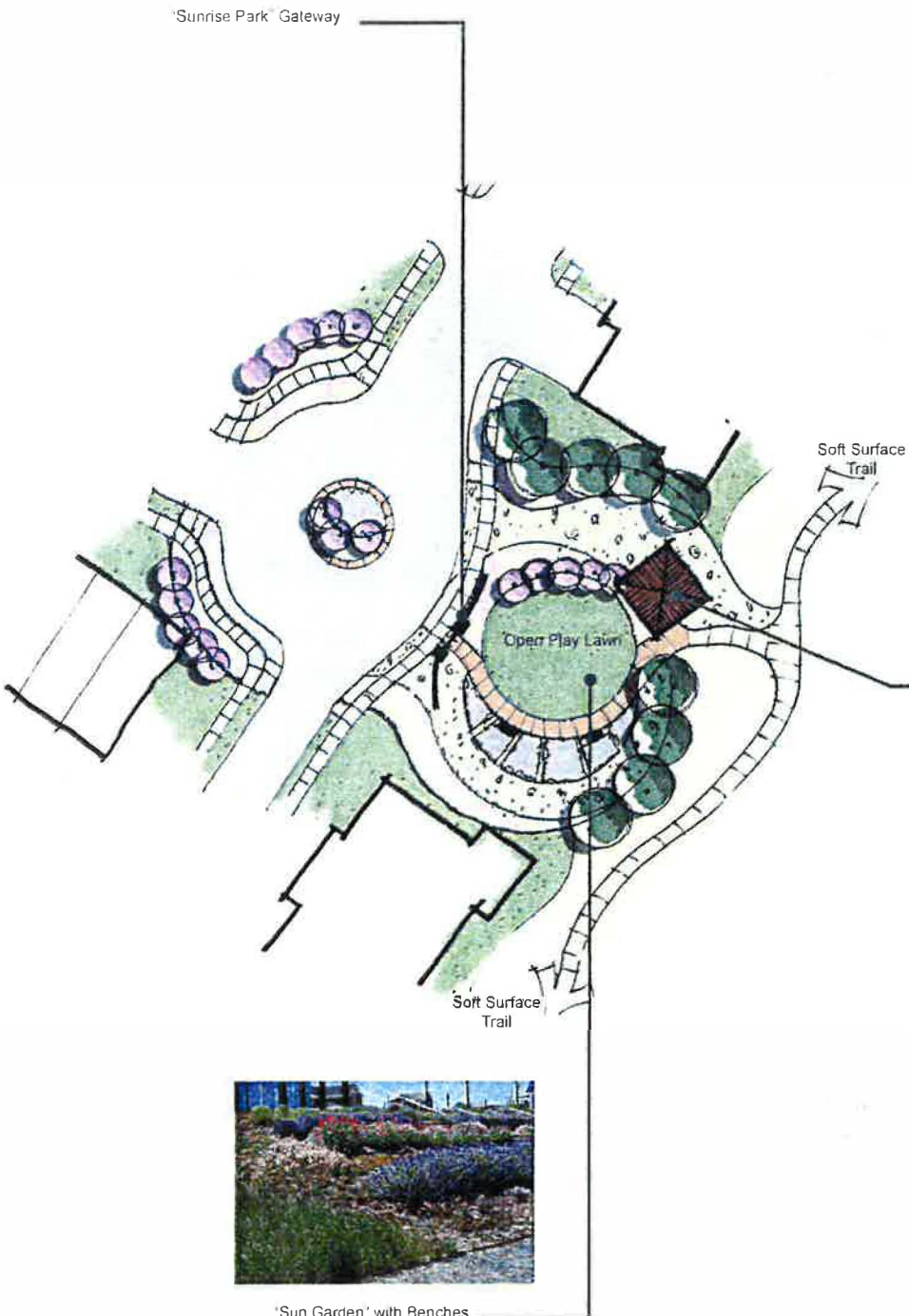
Oquirrh Mountain Ranch  
 Parks and Open Space



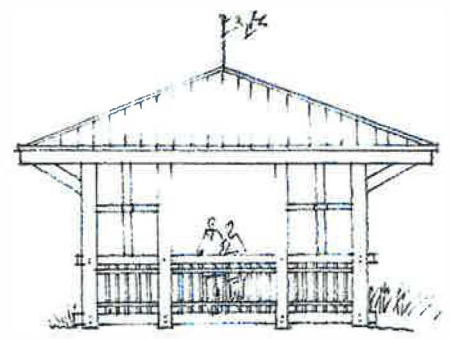
May 19, 2008

# **Exhibit H**

**[Lookout Tower Design Drawing]**



Revised Sage Communities Overlook Tower



Scenic Mountain Overlook Pavilion



Example of Fixed Metal Pennant

Sunrise Park

Illustrative graphics are conceptual and are subject to change.



# **Exhibit I**

**[Traffic Study]**



## MEMORANDUM

Date: November 23, 2007  
To: Sage Communities  
From: Ryan Hales, PE, PTOE, AICP  
Subject: **Eagle Mountain – Oquirrh Mountain Ranch TIS - Update**

UT07-025

---

### Purpose

This study addresses the traffic impacts associated with the proposed Oquirrh Mountain Ranch property (approximately 120 +/- acres of land located in Eagle Mountain, Utah. The project is located northwest of Pony Express Parkway and south of Lone Tree Parkway.

This study analyzed the traffic operations for existing conditions and plus project conditions (conditions after development of the proposed project) at key intersections and roadways in the vicinity of the site.

### Scope

The study area and scope were defined based on discussions with the Eagle Mountain Planner. This study was scoped to evaluate the traffic impacts at the following intersections:

- Lone Tree Parkway / Pony Express Parkway
- Pony Express Parkway / North Oquirrh Mountain Ranch Access
- Pony Express Parkway / South Oquirrh Mountain Ranch Access

### Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for unsignalized intersections.

The Highway Capacity Manual 2000 (HCM 2000) methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. For unsignalized intersections LOS is reported based on the worst approach. Hales Engineering has also

<b>Table 1</b>		
<b>Level of Service Descriptions</b>		
<b>Level of Service</b>	<b>Description of Traffic Conditions</b>	<b>Worst Approach Delay (seconds / vehicle)</b>
<b>UNSIGNALIZED INTERSECTIONS<sup>1</sup></b>		
A	Free Flow / Insignificant Delay	$0 \leq 10.0$
B	Stable Operations / Minimum Delays	$>10.0$ and $\leq 15.0$
C	Stable Operations / Acceptable Delays	$>15.0$ and $\leq 25.0$
D	Approaching Unstable Flows / Tolerable Delays	$>25.0$ and $\leq 35.0$
E	Unstable Operations / Significant Delays Can Occur	$>35.0$ and $\leq 50.0$
F	Forced Flows / Unpredictable Flows / Excessive Delays Occur	$> 50.0$
<b>Source:</b>		
1. Hales Engineering Descriptions, based on <i>Highway Capacity Manual, 2000 Methodology</i> (Transportation Research Board, 2000).		

calculated overall delay values for unsignalized intersections, which provides additional information and represents the overall intersection conditions rather than just the worst approach.

### Level of Service Standards

For the purposes of this study, a minimum overall intersection performance for each of the study intersections was set at LOS C. However, if LOS D, E or F for an individual approach at an intersection exists, explanation and / or mitigation measures will be presented.

An LOS C threshold is consistent with “state-of-the-practice” traffic engineering principles for rural intersections.

## EXISTING (2007) BACKGROUND CONDITIONS

### Purpose

The purpose of the existing (2007) background analysis is to study the roadways during average daily traffic conditions with current geometric conditions. Through this analysis, background traffic operational deficiencies can be identified and potential mitigation measures recommended.

## **Roadway System**

The study intersection is served by the following roadway(s) as described below:

- Pony Express Parkway – is a local road that extends from The Ranches area of Eagle Mountain to the Eagle Mountain City center and provides direct access to proposed site. In the vicinity of the proposed project, Pony Express Parkway runs primarily north / south and is composed of two travel lanes (one per direction) and a raised median with turn pockets at the major intersections.

## **Traffic Volumes**

Traffic counts were performed on a weekday p.m. (4:00 to 6:00) peak period at the following intersection(s):

- Lone Tree Parkway / Pony Express Parkway

The counts were performed on Wednesday, January 24, 2007 during the p.m. peak hours. Detailed count data is included in Appendix A for existing and plus project conditions.

The traffic counts were seasonally adjusted to represent volumes for an average day of the year. The traffic volume adjustments were based on seasonal adjustment factors published by Utah Department of Transportation (UDOT).

## **Level of Service Analysis**

Using the Highway Capacity Software (HCS) and the HCM 2000 methodology previously introduced, the p.m. peak hour LOS was computed for the study intersection (Lone Tree Parkway / Pony Express Parkway). The results of this analysis are reported in Table 2 (see Appendix B for a detailed LOS report).

<b>Table 2</b>						
<b>Existing (2007) p.m. Peak Hour Level of Service</b>						
<b>Intersection</b>		<b>Worst Approach</b>			<b>Overall Intersection</b>	
<b>Description</b>	<b>Control</b>	<b>Approach<sup>1</sup></b>	<b>Aver. Delay (Sec / Veh)<sup>1</sup></b>	<b>LOS<sup>1</sup></b>	<b>Aver. Delay (Sec / Veh)<sup>2</sup></b>	<b>LOS</b>
Lone Tree Pkwy. / Pony Express Pkwy.	Unsignalized <sup>3</sup>	Eastbound	10.6	B	1.1	A
<p>1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections</p> <p>2. This represents the overall intersection LOS and delay (seconds / vehicle)</p> <p>3. All unsignalized intersections were evaluated using the Highway Capacity Software</p>						
Source: Hales Engineering, January 2007						

### Mitigation Measures

- None are recommended at this time as the overall intersection is functioning adequately.

### PROJECT CONDITIONS

#### Purpose

The project conditions analysis explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in the Introduction.

#### Project Description

This study addresses the traffic impacts associated with the proposed Oquirrh Mountain Ranch property (approximately 120 +/- acres of land located in Eagle Mountain, Utah, see site plan in Appendix C. The project is located northwest of Pony Express Parkway and south of Lone Tree Parkway.

The proposed land use for the proposed Oquirrh Mountain Ranch will be as follows:

- Residential:
  - 123 Single Family Dwelling Units
  - 56 Twin Homes
  - 78 Tri-Plex

- 26 Row Townhomes
- 86 Mansion Homes (6 units / home)
- 37 Cluster Homes

### **Trip Generation**

Trip generation for the project was computed using trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation, 7<sup>th</sup> Edition*, 2003. Trips were generated using the land use intensity previously described and are summarized in Table 3 for the proposed Oquirrh Mountain Ranch at full build-out conditions.

The ITE trip generation rates identify gross trips to and from a facility as if it were a stand-alone activity. Gross ITE trip generation rates do not account for trips already on adjacent roadways or for internal capture. Hales Engineering did not adjust the gross trip generation to account for pass-by or internal capture trips that are already on the adjacent roadway and trips that are internal to the project site because this site functions as an independent land use.

### **Trip Distribution and Assignment**

Project traffic was assigned to the roadway network based on the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provided helpful guidance to establishing these distribution percentages, especially in close proximity to the site. The resulting overall distribution of project generated trips is as follows:

From the project site:

- 92% North
- 8% South

These trip distribution assumptions were used to assign the p.m. peak hour generated trips at the study intersections.

**Table 3**  
**Oquirrh Mountain Ranch TIS - Update**  
**Trip Generation**

	Land Use <sup>1</sup>	Number of Units	Unit Type	Daily Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Daily Trips
1	Single-Family Detached Housing (210)	179	Dwelling Units	1,776	50%	50%	888	888	1,776
2	Residential Condominium/Townhouse (230)	225	Dwelling Units	1,279	50%	50%	639	639	1,279
	<b>Project Total Daily Trips</b>						<b>1,528</b>	<b>1,528</b>	<b>3,055</b>
	Land Use <sup>1</sup>	Number of Units	Unit Type	a.m. Peak Hour Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total a.m. Trips
1	Single-Family Detached Housing (210)	179	Dwelling Units	135	25%	75%	34	101	135
2	Residential Condominium/Townhouse (230)	225	Dwelling Units	99	17%	83%	17	82	99
	<b>Project Total a.m. Peak Hour Trips</b>						<b>50</b>	<b>183</b>	<b>234</b>
	Land Use <sup>1</sup>	Number of Units	Unit Type	p.m. Peak Hour Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total p.m. Trips
1	Single-Family Detached Housing (210)	179	Dwelling Units	181	63%	37%	114	67	181
2	Residential Condominium/Townhouse (230)	225	Dwelling Units	117	67%	33%	78	39	117
	<b>Project Total p.m. Peak Hour Trips</b>						<b>192</b>	<b>106</b>	<b>298</b>

<sup>1</sup> Land Use Code from the Institute of Transportation Engineers - 7th Edition Trip Generation Manual (ITE Manual)

SOURCE: Hales Engineering, November 2007

## EXISTING (2007) PLUS PROJECT CONDITIONS

### Purpose

This section of the report examines the traffic impacts of the proposed project at each of the study intersections. The trips generated by the proposed Ourirrh Mountain Ranch were combined with the existing background traffic volumes to create the existing plus project conditions. The existing plus project scenario evaluates the impacts of the project traffic on the surrounding roadway network assuming full build out of each project. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

### Traffic Volumes

Project trips were assigned to the study intersections based on the trip distribution percentages discussed previously and permitted intersection turning movements.

### Level of Service Analysis

Using the Highway Capacity Software (HCS) which follows the Highway Capacity Manual (HCM) 2000 methodology introduced previously, the p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 4

(see Appendix B for the detailed LOS reports). As shown in Table 4, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

<b>Table 4</b>						
<b>Existing (2007) Plus Project p.m. Peak Hour Level of Service</b>						
<b>Intersection</b>		<b>Worst Approach</b>			<b>Overall Intersection</b>	
<b>Description</b>	<b>Control</b>	<b>Approach<sup>1</sup></b>	<b>Aver. Delay (Sec / Veh)<sup>1</sup></b>	<b>LOS<sub>1</sub></b>	<b>Aver. Delay (Sec / Veh)<sup>2</sup></b>	<b>LOS</b>
Lone Tree Pkwy. / Pony Express Pkwy.	Unsignalized <sup>3</sup>	Eastbound	12.4	B	0.8	A
North Access / Pony Express Pkwy.	Unsignalized <sup>3</sup>	Eastbound	11.7	B	1.1	A
South Access / Pony Express Pkwy.	Unsignalized <sup>3</sup>	Eastbound	10.8	B	1.4	A

1. This represents the worst approach LOS and delay (seconds / vehicle) and is only reported for unsignalized intersections.  
 2. This represents the overall intersection LOS and delay (seconds / vehicle).  
 3. All unsignalized intersections were evaluated using Synchro.

Source: Hales Engineering, November 2007

**Mitigation Measures**

- None are recommended at this time as both intersections are functioning adequately.

**Internal Roadways**

- Quirrh Ranch Parkway will have approximately 1,600 – 2,500 ADT
- Bald Eagle Way will have approximately 1,400 – 2,500 ADT

Each of these internal roadways will handle the anticipated project related traffic.

# APPENDIX A

## Count Data





# **APPENDIX B**

## Detailed LOS Reports



HCS+: Unsignalized Intersections Release 5.21

Phone:  
E-Mail:

Fax:

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

Analyst: RRH  
 Agency/Co.: Hales Engineering  
 Date Performed: 1/26/2007  
 Analysis Time Period: Existing PM Peak Hour  
 Intersection:  
 Jurisdiction: Eagle Mountian  
 Units: U. S. Customary  
 Analysis Year: 2007  
 Project ID:  
 East/West Street: Lone Tree Parkway  
 North/South Street: Pony Express Parkway  
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street Movements	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	3	137			196	39
Peak-Hour Factor, PHF	0.92	0.92			0.92	0.92
Peak-15 Minute Volume	1	37			53	11
Hourly Flow Rate, HFR	3	148			213	42
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Raised curb			/ 1		
RT Channelized?						No
Lanes	1	1			1	1
Configuration	L	T			T	R
Upstream Signal?	No			No		

Minor Street Movements	7	8	9	10	11	12
	L	T	R	L	T	R
Volume				36	0	3
Peak Hour Factor, PHF				0.92	0.92	0.92
Peak-15 Minute Volume				10	0	1
Hourly Flow Rate, HFR				39	0	3
Percent Heavy Vehicles				2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		No /
RT Channelized?						
Lanes				0	1	0
Configuration					LTR	

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0

Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn Through							
S5 Left-Turn Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		
Shared ln volume, major rt vehicles:		
Sat flow rate, major th vehicles:		
Sat flow rate, major rt vehicles:		
Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation								
Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R
t(c,base)	4.1					7.1	6.5	6.2
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)	2					2	2	2
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Grade/100			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)	0.00					0.70	0.00	0.00
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage	4.1					6.4	6.5	6.2
2-stage	4.1					5.4	5.5	6.2

Follow-Up Time Calculations								
Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R
t(f,base)	2.20					3.50	4.00	3.30
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)	2					2	2	2
t(f)	2.2					3.5	4.0	3.3

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal				
	Movement 2		Movement 5	
V prog	V(t)	V(l,prot)	V(t)	V(l,prot)

Total Saturation Flow Rate, s (vph)  
 Arrival Type  
 Effective Green, g (sec)  
 Cycle Length, C (sec)  
 Rp (from Exhibit 16-11)  
 Proportion vehicles arriving on green P  
 g(q1)  
 g(q2)  
 g(q)

Computation 2-Proportion of TWSC Intersection Time blocked

	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)

alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

Computation 3-Platoon Event Periods Result

p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

Proportion unblocked for minor movements, p(x)	(1) Single-stage Process	(2) Two-Stage Process Stage I	(3) Process Stage II
--	-----------------------------	-------------------------------------	----------------------------

p(1)  
 p(4)  
 p(7)  
 p(8)  
 p(9)  
 p(10)  
 p(11)  
 p(12)

Computation 4 and 5  
 Single-Stage Process

Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R
V c,x	255					367	367	213
s								
Px								
V c,u,x								

C r,x  
 C plat,x

Two-Stage Process

7	8	10	11
---	---	----	----

Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2

V(c, x)	213	154	213	154
s		1500		1500
P(x)				
V(c, u, x)				

C(r, x)  
C(plat, x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.	9	12
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Conflicting Flows		213
Potential Capacity		827
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity		827
Probability of Queue free St.	1.00	1.00

Step 2: LT from Major St.	4	1
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Conflicting Flows		255
Potential Capacity		1310
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity		1310
Probability of Queue free St.	1.00	1.00
Maj L-Shared Prob Q free St.		

Step 3: TH from Minor St.	8	11
---------------------------	---	----

Conflicting Flows		367
Potential Capacity		562
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		561
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
---------------------------	---	----

Conflicting Flows		367
Potential Capacity		633
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	1.00	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity		632

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.	8	11
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Part 1 - First Stage			
Conflicting Flows		213	
Potential Capacity	774	726	
Pedestrian Impedance Factor	1.00	1.00	
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00	
Movement Capacity	772	726	
Probability of Queue free St.	1.00	1.00	

Part 2 - Second Stage		
Conflicting Flows		154
Potential Capacity	700	770
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	700	768

Part 3 - Single Stage		
Conflicting Flows		367
Potential Capacity		562
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		561

Result for 2 stage process:		
a	0.91	0.91
y		0.80
C t		596
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
---------------------------	---	----

Part 1 - First Stage		
Conflicting Flows		213
Potential Capacity	879	823
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	877	823

Part 2 - Second Stage		
Conflicting Flows		154
Potential Capacity	808	874
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	805	872

Part 3 - Single Stage		
Conflicting Flows		367
Potential Capacity		633
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	1.00	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity		632

Results for Two-stage process:		
a	0.91	0.91
y		0.80
C t		674

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)				39	0	3
Movement Capacity (vph)				674	596	827
Shared Lane Capacity (vph)					683	



Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep				674	596	827
Volume				39	0	3
Delay						
Q sep						
Q sep +1 round (Qsep +1)						
n max						
C sh					683	
SUM C sep						
n						
C act						

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	L						LTR	
v (vph)	3						42	
C(m) (vph)	1310						683	
v/c	0.00						0.06	
95% queue length	0.01						0.20	
Control Delay	7.8						10.6	
LOS	A						B	
Approach Delay							10.6	
Approach LOS							B	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(i1), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(i1), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4	7.8	
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		



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Phone:  
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TWO-WAY STOP CONTROL (TWSC) ANALYSIS

Analyst: RRH  
 Agency/Co.: Hales Engineering  
 Date Performed: 11/23/2007  
 Analysis Time Period: Existing + Project PM Pk Hr  
 Intersection:  
 Jurisdiction: Eagle Mountain  
 Units: U. S. Customary  
 Analysis Year: 2007  
 Project ID:  
 East/West Street: Lone Tree Parkway  
 North/South Street: Pony Express Parkway  
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume	3	234			372	39
Peak-Hour Factor, PHF	0.92	0.92			0.92	0.92
Peak-15 Minute Volume	1	64			101	11
Hourly Flow Rate, HFR	3	254			404	42
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Raised curb			/ 1		
RT Channelized?				No		
Lanes	1	1			1	1
Configuration	L	T			T	R
Upstream Signal?	No			No		

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume				36	0	3
Peak Hour Factor, PHF				0.92	0.92	0.92
Peak-15 Minute Volume				10	0	1
Hourly Flow Rate, HFR				39	0	3
Percent Heavy Vehicles				2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		No /
RT Channelized?						
Lanes				0	1	0
Configuration					LTR	

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0

Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn Through							
S5 Left-Turn Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		
Shared ln volume, major rt vehicles:		
Sat flow rate, major th vehicles:		
Sat flow rate, major rt vehicles:		
Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)	4.1					7.1	6.5	6.2
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)	2					2	2	2
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Grade/100			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)	0.00					0.70	0.00	0.00
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage	4.1					6.4	6.5	6.2
2-stage	4.1					5.4	5.5	6.2

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)	2.20					3.50	4.00	3.30
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)	2					2	2	2
t(f)	2.2					3.5	4.0	3.3

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2		Movement 5	
V prog	V(t)	V(l,prot)	V(t)	V(l,prot)

V prog

Total Saturation Flow Rate, s (vph)  
 Arrival Type  
 Effective Green, g (sec)  
 Cycle Length, C (sec)  
 Rp (from Exhibit 16-11)  
 Proportion vehicles arriving on green P  
 g(q1)  
 g(q2)  
 g(q)

---

Computation 2-Proportion of TWSC Intersection Time blocked

	Movement 2	Movement 5
	V(t) V(l,prot)	V(t) V(l,prot)

---

alpha  
 beta  
 Travel time, t(a) (sec)  
 Smoothing Factor, F  
 Proportion of conflicting flow, f  
 Max platooned flow, V(c,max)  
 Min platooned flow, V(c,min)  
 Duration of blocked period, t(p)  
 Proportion time blocked, p

	0.000	0.000
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Computation 3-Platoon Event Periods

	Result
p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

---

Proportion unblocked for minor movements, p(x)

	(1) Single-stage Process	(2) Two-Stage Stage I	(3) Process Stage II
p(1)			
p(4)			
p(7)			
p(8)			
p(9)			
p(10)			
p(11)			
p(12)			

---

Computation 4 and 5  
 Single-Stage Process

Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R
V c, x	446					664	664	404
s								
Px								
V c, u, x								

---

C r, x  
 C plat, x

---

Two-Stage Process

	7	8	10	11
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Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2

V(c, x)			404	260	404	260
s				1500		1500
P(x)						
V(c, u, x)						

C(r, x)  
C(plat, x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.		9		12
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Conflicting Flows				404
Potential Capacity				647
Pedestrian Impedance Factor	1.00			1.00
Movement Capacity				647
Probability of Queue free St.	1.00			1.00

Step 2: LT from Major St.		4		1
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Conflicting Flows				446
Potential Capacity				1114
Pedestrian Impedance Factor	1.00			1.00
Movement Capacity				1114
Probability of Queue free St.	1.00			1.00
Maj L-Shared Prob Q free St.				

Step 3: TH from Minor St.		8		11
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Conflicting Flows				664
Potential Capacity				381
Pedestrian Impedance Factor	1.00			1.00
Cap. Adj. factor due to Impeding mvmnt	1.00			1.00
Movement Capacity				380
Probability of Queue free St.	1.00			1.00

Step 4: LT from Minor St.		7		10
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Conflicting Flows				664
Potential Capacity				426
Pedestrian Impedance Factor	1.00			1.00
Maj. L, Min T Impedance factor	1.00			
Maj. L, Min T Adj. Imp Factor.	1.00			
Cap. Adj. factor due to Impeding mvmnt	0.99			1.00
Movement Capacity				425

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.		8		11
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Part 1 - First Stage				
Conflicting Flows				404
Potential Capacity		697		599
Pedestrian Impedance Factor	1.00			1.00
Cap. Adj. factor due to Impeding mvmnt	1.00			1.00
Movement Capacity		695		599
Probability of Queue free St.	1.00			1.00

Part 2 - Second Stage		
Conflicting Flows		260
Potential Capacity	577	693
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	577	691

Part 3 - Single Stage		
Conflicting Flows		664
Potential Capacity		381
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity		380

Result for 2 stage process:		
a	0.91	0.91
y		0.70
C t		464
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
---------------------------	---	----

Part 1 - First Stage		
Conflicting Flows		404
Potential Capacity	788	674
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	786	674

Part 2 - Second Stage		
Conflicting Flows		260
Potential Capacity	663	783
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	1.00
Movement Capacity	660	781

Part 3 - Single Stage		
Conflicting Flows		664
Potential Capacity		426
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	1.00	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity		425

Results for Two-stage process:		
a	0.91	0.91
y		0.70
C t		522

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)				39	0	3
Movement Capacity (vph)				522	464	647
Shared Lane Capacity (vph)					529	

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep				522	464	647
Volume				39	0	3
Delay						
Q sep						
Q sep +1 round (Qsep +1)						
n max						
C sh					529	
SUM C sep						
n						
C act						

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	L						LTR	
v (vph)	3						42	
C(m) (vph)	1114						529	
v/c	0.00						0.08	
95% queue length	0.01						0.26	
Control Delay	8.2						12.4	
LOS	A						B	
Approach Delay							12.4	
Approach LOS							B	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	1.00	1.00
v(i1), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(i1), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4	8.2	
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		



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TWO-WAY STOP CONTROL SUMMARY

Analyst: RRH  
 Agency/Co.: Hales Engineering  
 Date Performed: 11/23/2007  
 Analysis Time Period: Existing + Project PM Pk Hr  
 Intersection:  
 Jurisdiction: Eagle Mountain  
 Units: U. S. Customary  
 Analysis Year: 2007  
 Project ID:  
 East/West Street: North Access  
 North/South Street: Pony Express Parkway  
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach Movement	Northbound				Southbound	
	1 L	2 T	3 R	4 L	5 T	6 R
Volume	7	190			296	79
Peak-Hour Factor, PHF	0.92	0.92			0.92	0.92
Hourly Flow Rate, HFR	7	206			321	85
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Raised curb				/ 1	
RT Channelized?						No
Lanes	1	1			1	1
Configuration	L	T			T	R
Upstream Signal?		No			No	

Minor Street: Approach Movement	Westbound				Eastbound	
	7 L	8 T	9 R	10 L	11 T	12 R
Volume				44	0	4
Peak Hour Factor, PHF				0.92	0.92	0.92
Hourly Flow Rate, HFR				47	0	4
Percent Heavy Vehicles				2	2	2
Percent Grade (%)	0				0	
Flared Approach: Exists?/Storage				/		No /
Lanes				0	1	0
Configuration					LTR	

Delay, Queue Length, and Level of Service

Approach Movement	NB	SB	Westbound			Eastbound	
	1	4	7	8	9	10	11 12
Lane Config	L						LTR
v (vph)	7						51
C(m) (vph)	1153						587
v/c	0.01						0.09
95% queue length	0.02						0.28
Control Delay	8.1						11.7
LOS	A						B
Approach Delay							11.7
Approach LOS							B

HCS+: Unsignalized Intersections Release 5.21

Phone:  
E-Mail:

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TWO-WAY STOP CONTROL (TWSC) ANALYSIS

Analyst: RRH  
 Agency/Co.: Hales Engineering  
 Date Performed: 11/23/2007  
 Analysis Time Period: Existing + Project PM Pk Hr  
 Intersection:  
 Jurisdiction: Eagle Mountain  
 Units: U. S. Customary  
 Analysis Year: 2007  
 Project ID:  
 East/West Street: North Access  
 North/South Street: Pony Express Parkway  
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume	7	190			296	79
Peak-Hour Factor, PHF	0.92	0.92			0.92	0.92
Peak-15 Minute Volume	2	52			80	21
Hourly Flow Rate, HFR	7	206			321	85
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Raised curb			/ 1		
RT Channelized?						No
Lanes	1	1			1	1
Configuration	L	T			T	R
Upstream Signal?	No				No	

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume				44	0	4
Peak Hour Factor, PHF				0.92	0.92	0.92
Peak-15 Minute Volume				12	0	1
Hourly Flow Rate, HFR				47	0	4
Percent Heavy Vehicles				2	2	2
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage				/		No /
RT Channelized?						
Lanes				0	1	0
Configuration					LTR	

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0

Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn Through							
S5 Left-Turn Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		
Shared ln volume, major rt vehicles:		
Sat flow rate, major th vehicles:		
Sat flow rate, major rt vehicles:		
Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)	4.1					7.1	6.5	6.2
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)	2					2	2	2
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Grade/100			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)	0.00					0.70	0.00	0.00
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage	4.1					6.4	6.5	6.2
2-stage	4.1					5.4	5.5	6.2

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)	2.20					3.50	4.00	3.30
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)	2					2	2	2
t(f)	2.2					3.5	4.0	3.3

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)
V prog				

Total Saturation Flow Rate, s (vph)  
 Arrival Type  
 Effective Green, g (sec)  
 Cycle Length, C (sec)  
 Rp (from Exhibit 16-11)  
 Proportion vehicles arriving on green P  
 g(q1)  
 g(q2)  
 g(q)

Computation 2-Proportion of TWSC Intersection Time blocked

	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)

alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

Computation 3-Platoon Event Periods Result

p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

Proportion

unblocked for minor movements, p(x)	(1)	(2)	(3)
	Single-stage Process	Two-Stage Process Stage I	Two-Stage Process Stage II

p(1)  
 p(4)  
 p(7)  
 p(8)  
 p(9)  
 p(10)  
 p(11)  
 p(12)

Computation 4 and 5  
 Single-Stage Process

Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R
V c, x	406					541	541	321
s								
Px								
V c, u, x								

C r, x  
 C plat, x

Two-Stage Process

7	8	10	11
---	---	----	----

Stage1 Stage2 Stage1 Stage2 Stage1 Stage2 Stage1 Stage2

V(c, x)		321	220	321	220
s			1500		1500
P(x)					
V(c, u, x)					

C(r, x)  
C(plat, x)

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St. 9 12

Conflicting Flows		321
Potential Capacity		720
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity		720
Probability of Queue free St.	1.00	0.99

Step 2: LT from Major St. 4 1

Conflicting Flows		406
Potential Capacity		1153
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity		1153
Probability of Queue free St.	1.00	0.99
Maj L-Shared Prob Q free St.		

Step 3: TH from Minor St. 8 11

Conflicting Flows		541
Potential Capacity		448
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		445
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St. 7 10

Conflicting Flows		541
Potential Capacity		502
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	0.99	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		499

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St. 8 11

Part 1 - First Stage

Conflicting Flows		321
Potential Capacity	725	652
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity	721	652
Probability of Queue free St.	1.00	1.00

Part 2 - Second Stage		
Conflicting Flows		220
Potential Capacity	601	721
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.99
Movement Capacity	601	717

Part 3 - Single Stage		
Conflicting Flows		541
Potential Capacity		448
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		445

Result for 2 stage process:		
a	0.91	0.91
Y		0.76
C t		513
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
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Part 1 - First Stage		
Conflicting Flows		321
Potential Capacity	821	735
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity	816	735

Part 2 - Second Stage		
Conflicting Flows		220
Potential Capacity	706	817
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity	702	812

Part 3 - Single Stage		
Conflicting Flows		541
Potential Capacity		502
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	0.99	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		499

Results for Two-stage process:		
a	0.91	0.91
Y		0.75
C t		578

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)				47	0	4
Movement Capacity (vph)				578	513	720
Shared Lane Capacity (vph)					587	

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
C sep				578	513	720
Volume				47	0	4
Delay						
Q sep						
Q sep +1						
round (Qsep +1)						
n max						
C sh					587	
SUM C sep						
n						
C act						

Worksheet 10-Delay, Queue Length, and Level of Service

Movement	1	4	7	8	9	10	11	12
Lane Config	L						LTR	
v (vph)	7						51	
C(m) (vph)	1153						587	
v/c	0.01						0.09	
95% queue length	0.02						0.28	
Control Delay	8.1						11.7	
LOS	A						B	
Approach Delay							11.7	
Approach LOS							B	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	0.99	1.00
v(i1), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(i1), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4	8.1	
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		





HCS+: Unsignalized Intersections Release 5.21

Phone:  
E-Mail:

Fax:

TWO-WAY STOP CONTROL (TWSC) ANALYSIS

Analyst: RRH  
 Agency/Co.: Hales Engineering  
 Date Performed: 11/23/2007  
 Analysis Time Period: Existing + Project PM Pk Hr  
 Intersection:  
 Jurisdiction: Eagle Mountain  
 Units: U. S. Customary  
 Analysis Year: 2007  
 Project ID:  
 East/West Street: South Access  
 North/South Street: Pony Express Parkway  
 Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street Movements	1 L	2 T	3 R	4 L	5 T	6 R
Volume	8	144			203	97
Peak-Hour Factor, PHF	0.92	0.92			0.92	0.92
Peak-15 Minute Volume	2	39			55	26
Hourly Flow Rate, HFR	8	156			220	105
Percent Heavy Vehicles	2	--	--		--	--
Median Type/Storage	Raised curb			/ 1		
RT Channelized?						No
Lanes	1	1			1	1
Configuration	L	T			T	R
Upstream Signal?	No			No		

Minor Street Movements	7 L	8 T	9 R	10 L	11 T	12 R
Volume				53	0	5
Peak Hour Factor, PHF				0.92	0.92	0.92
Peak-15 Minute Volume				14	0	1
Hourly Flow Rate, HFR				57	0	5
Percent Heavy Vehicles				2	2	2
Percent Grade (%)	0				0	
Flared Approach: Exists?/Storage				/		No /
RT Channelized?						
Lanes				0	1	0
Configuration	LTR					

Pedestrian Volumes and Adjustments

Movements	13	14	15	16
Flow (ped/hr)	0	0	0	0

Lane Width (ft)	12.0	12.0	12.0	12.0
Walking Speed (ft/sec)	4.0	4.0	4.0	4.0
Percent Blockage	0	0	0	0

Upstream Signal Data

	Prog. Flow vph	Sat Flow vph	Arrival Type	Green Time sec	Cycle Length sec	Prog. Speed mph	Distance to Signal feet
S2 Left-Turn Through							
S5 Left-Turn Through							

Worksheet 3-Data for Computing Effect of Delay to Major Street Vehicles

	Movement 2	Movement 5
Shared ln volume, major th vehicles:		
Shared ln volume, major rt vehicles:		
Sat flow rate, major th vehicles:		
Sat flow rate, major rt vehicles:		
Number of major street through lanes:		

Worksheet 4-Critical Gap and Follow-up Time Calculation

Critical Gap Calculation

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c,base)	4.1					7.1	6.5	6.2
t(c,hv)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
P(hv)	2					2	2	2
t(c,g)			0.20	0.20	0.10	0.20	0.20	0.10
Grade/100			0.00	0.00	0.00	0.00	0.00	0.00
t(3,lt)	0.00					0.70	0.00	0.00
t(c,T): 1-stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2-stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t(c) 1-stage	4.1					6.4	6.5	6.2
2-stage	4.1					5.4	5.5	6.2

Follow-Up Time Calculations

Movement	1 L	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base)	2.20					3.50	4.00	3.30
t(f,HV)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
P(HV)	2					2	2	2
t(f)	2.2					3.5	4.0	3.3

Worksheet 5-Effect of Upstream Signals

Computation 1-Queue Clearance Time at Upstream Signal

	Movement 2 V(t)	Movement 5 V(l,prot)	Movement 2 V(t)	Movement 5 V(l,prot)
--	--------------------	-------------------------	--------------------	-------------------------

V prog

Total Saturation Flow Rate, s (vph)  
 Arrival Type  
 Effective Green, g (sec)  
 Cycle Length, C (sec)  
 Rp (from Exhibit 16-11)  
 Proportion vehicles arriving on green P  
 g(q1)  
 g(q2)  
 g(q)

---

Computation 2-Proportion of TWS Intersection Time blocked

	Movement 2		Movement 5	
	V(t)	V(l,prot)	V(t)	V(l,prot)

---

alpha				
beta				
Travel time, t(a) (sec)				
Smoothing Factor, F				
Proportion of conflicting flow, f				
Max platooned flow, V(c,max)				
Min platooned flow, V(c,min)				
Duration of blocked period, t(p)				
Proportion time blocked, p		0.000		0.000

---

Computation 3-Platoon Event Periods      Result

---

p(2)	0.000
p(5)	0.000
p(dom)	
p(subo)	
Constrained or unconstrained?	

---

Proportion unblocked for minor movements, p(x)	(1) Single-stage Process	(2) Two-Stage Process Stage I	(3) Two-Stage Process Stage II
--	-----------------------------	-------------------------------------	--------------------------------------

---

p(1)  
 p(4)  
 p(7)  
 p(8)  
 p(9)  
 p(10)  
 p(11)  
 p(12)

---

Computation 4 and 5  
 Single-Stage Process

Movement	1	4	7	8	9	10	11	12
	L	L	L	T	R	L	T	R

---

V c, x	325					392	392	220
s								
Px								
V c, u, x								

---

C r, x  
 C plat, x

---

Two-Stage Process	7	8	10	11
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	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2	Stage1	Stage2
V(c, x)					220	172	220	172
s						1500		1500
P(x)								
V(c, u, x)								
C(r, x)								
C(plat, x)								

Worksheet 6-Impedance and Capacity Equations

Step 1: RT from Minor St.					9		12	
Conflicting Flows							220	
Potential Capacity							820	
Pedestrian Impedance Factor					1.00		1.00	
Movement Capacity							820	
Probability of Queue free St.					1.00		0.99	
Step 2: LT from Major St.					4		1	
Conflicting Flows							325	
Potential Capacity							1235	
Pedestrian Impedance Factor					1.00		1.00	
Movement Capacity							1235	
Probability of Queue free St.					1.00		0.99	
Maj L-Shared Prob Q free St.								
Step 3: TH from Minor St.					8		11	
Conflicting Flows							392	
Potential Capacity							544	
Pedestrian Impedance Factor					1.00		1.00	
Cap. Adj. factor due to Impeding mvmnt					0.99		0.99	
Movement Capacity							540	
Probability of Queue free St.					1.00		1.00	
Step 4: LT from Minor St.					7		10	
Conflicting Flows							392	
Potential Capacity							612	
Pedestrian Impedance Factor					1.00		1.00	
Maj. L, Min T Impedance factor					0.99			
Maj. L, Min T Adj. Imp Factor.					1.00			
Cap. Adj. factor due to Impeding mvmnt					0.99		0.99	
Movement Capacity							608	

Worksheet 7-Computation of the Effect of Two-stage Gap Acceptance

Step 3: TH from Minor St.					8		11	
Part 1 - First Stage								
Conflicting Flows							220	
Potential Capacity					760		721	
Pedestrian Impedance Factor					1.00		1.00	
Cap. Adj. factor due to Impeding mvmnt					0.99		1.00	
Movement Capacity					755		721	
Probability of Queue free St.					1.00		1.00	

Part 2 - Second Stage		
Conflicting Flows		172
Potential Capacity	653	756
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	1.00	0.99
Movement Capacity	653	751

Part 3 - Single Stage		
Conflicting Flows		392
Potential Capacity		544
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		540

Result for 2 stage process:		
a	0.91	0.91
y		0.86
C t		582
Probability of Queue free St.	1.00	1.00

Step 4: LT from Minor St.	7	10
---------------------------	---	----

Part 1 - First Stage		
Conflicting Flows		220
Potential Capacity	863	817
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	1.00
Movement Capacity	857	817

Part 2 - Second Stage		
Conflicting Flows		172
Potential Capacity	776	858
Pedestrian Impedance Factor	1.00	1.00
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity	771	852

Part 3 - Single Stage		
Conflicting Flows		392
Potential Capacity		612
Pedestrian Impedance Factor	1.00	1.00
Maj. L, Min T Impedance factor	0.99	
Maj. L, Min T Adj. Imp Factor.	1.00	
Cap. Adj. factor due to Impeding mvmnt	0.99	0.99
Movement Capacity		608

Results for Two-stage process:		
a	0.91	0.91
y		0.86
C t		658

Worksheet 8-Shared Lane Calculations

Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (vph)				57	0	5
Movement Capacity (vph)				658	582	820
Shared Lane Capacity (vph)					669	

Worksheet 9-Computation of Effect of Flared Minor Street Approaches

Movement	7 L	8 T	9 R	10 L	11 T	12 R
C sep				658	582	820
Volume				57	0	5
Delay						
Q sep						
Q sep +1 round (Qsep +1)						
n max						
C sh					669	
SUM C sep						
n						
C act						

Worksheet 10-Delay, Queue Length, and Level of Service

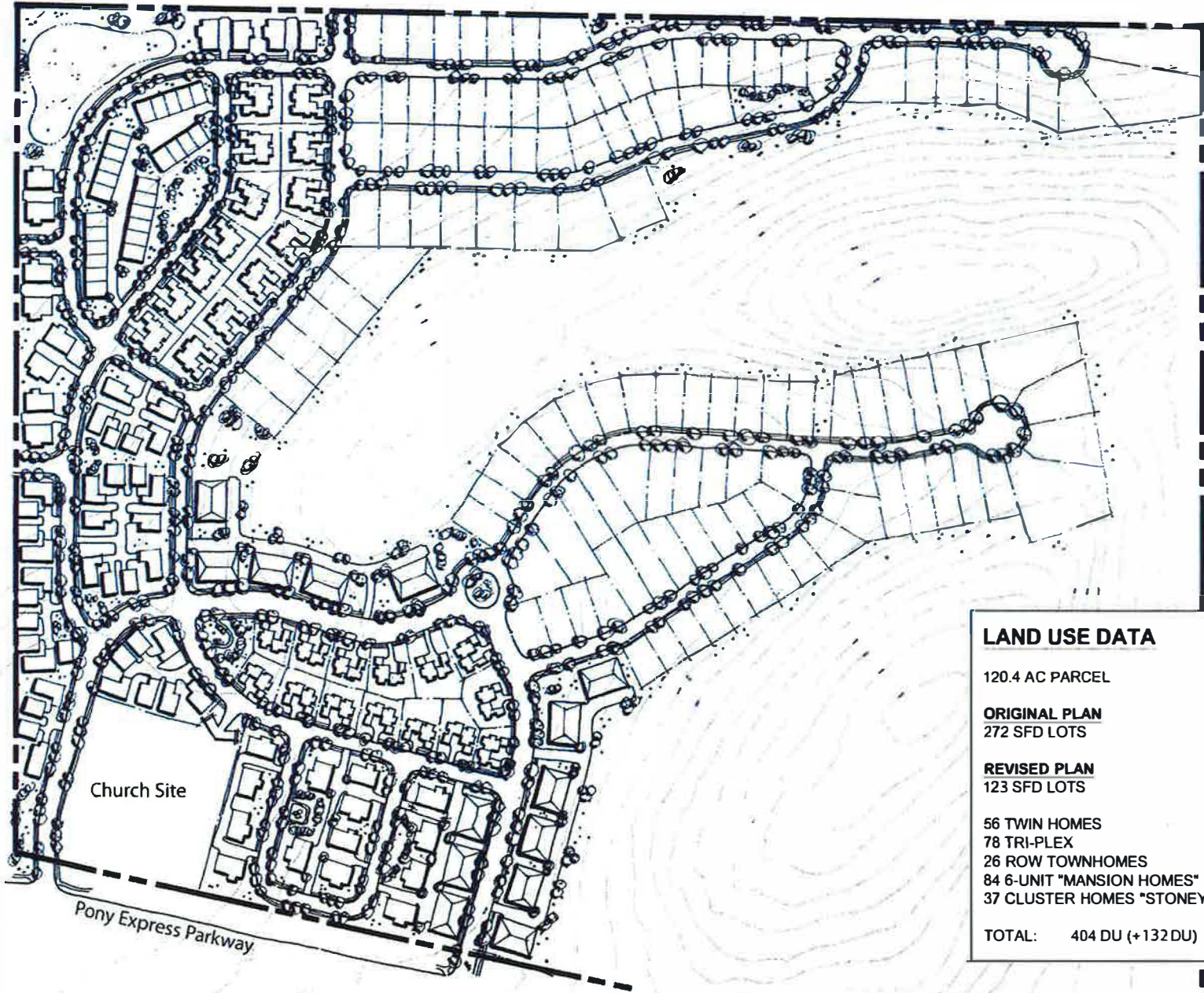
Movement	1	4	7	8	9	10	11	12
Lane Config	L						LTR	
v (vph)	8						62	
C(m) (vph)	1235						669	
v/c	0.01						0.09	
95% queue length	0.02						0.31	
Control Delay	7.9						10.9	
LOS	A						B	
Approach Delay							10.9	
Approach LOS							B	

Worksheet 11-Shared Major LT Impedance and Delay

	Movement 2	Movement 5
p(oj)	0.99	1.00
v(i1), Volume for stream 2 or 5		
v(i2), Volume for stream 3 or 6		
s(i1), Saturation flow rate for stream 2 or 5		
s(i2), Saturation flow rate for stream 3 or 6		
P*(oj)		
d(M,LT), Delay for stream 1 or 4	7.9	
N, Number of major street through lanes		
d(rank,1) Delay for stream 2 or 5		

# APPENDIX C

## Site Plan



LAND USE DATA	
120.4 AC PARCEL	
<b>ORIGINAL PLAN</b> 272 SFD LOTS	
<b>REVISED PLAN</b> 123 SFD LOTS	
56 TWIN HOMES	
78 TRI-PLEX	
26 ROW TOWNHOMES	
84 6-UNIT "MANSION HOMES"	
37 CLUSTER HOMES "STONEBROOK"	
<b>TOTAL:</b>	<b>404 DU (+132 DU)</b>

# Oquirrh Mountain Subdivision

Eagle Mountain, Utah  
October 24, 2007

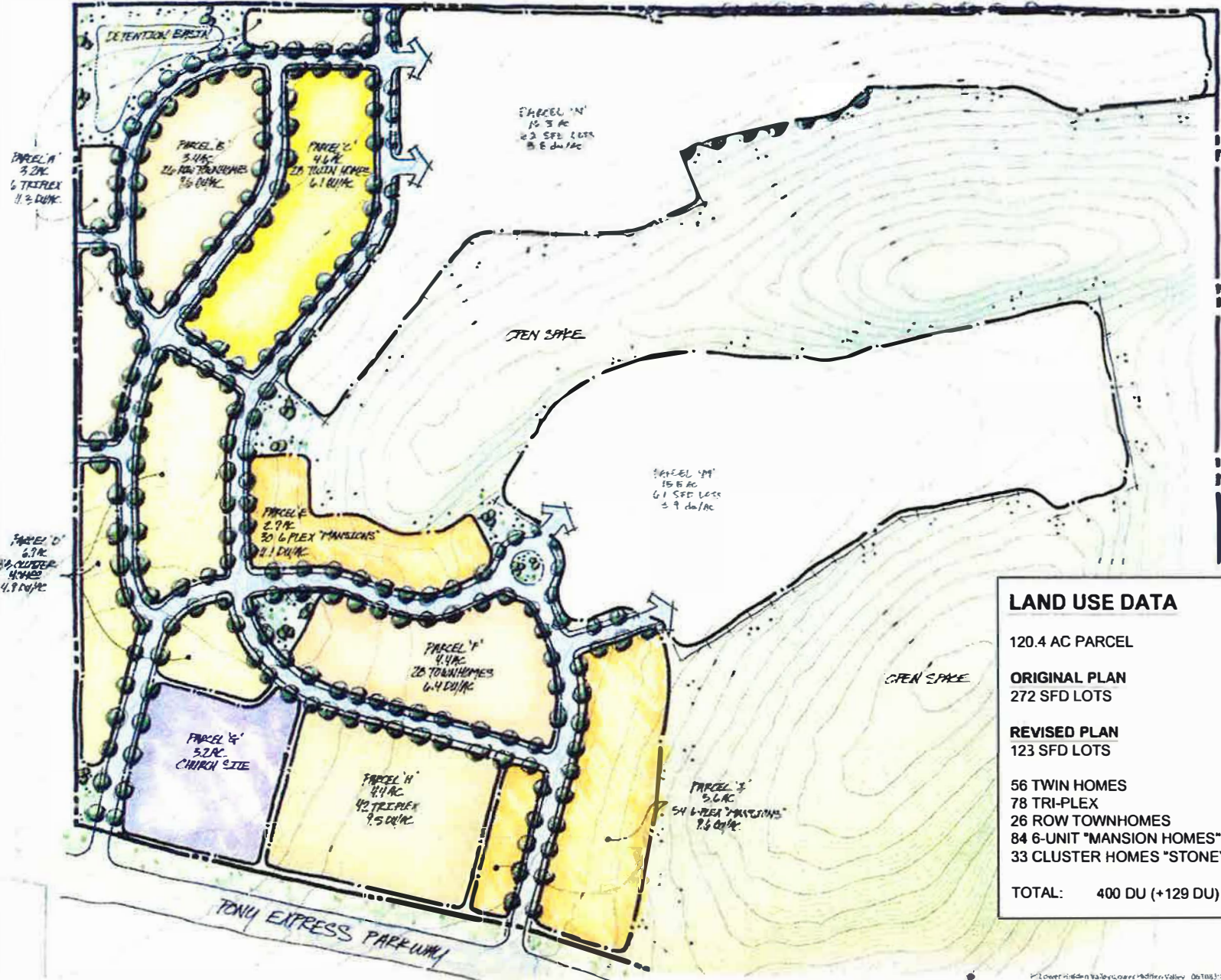
SCALE: 1" = 100'

NORTH

## Concept Plan







LAND USE DATA	
120.4 AC PARCEL	
ORIGINAL PLAN	272 SFD LOTS
REVISED PLAN	123 SFD LOTS
56 TWIN HOMES	
78 TRI-PLEX	
26 ROW TOWNHOMES	
84 6-UNIT "MANION HOMES"	
33 CLUSTER HOMES "STONEBROOK"	
TOTAL:	400 DU (+129 DU)

Conceptual Land Use Plan

Oquirrh Mountain Subdivision



Eagle Mountain, Utah  
October 16, 2007

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