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.
TPO – Thermoplastic polyolefin, a thermoplastic polymer-based waterproof roofing membrane suitable for flat roofs.
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 Hidden Valley:

Canopy Trees

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

Evergreen Trees

(Most not suitable for parkstrips)

Abies concolor	*White Fir*	*Utah's Choice selection*
Calocedrus decurrens	*Incense Cedar*	
Cedrus atlantica glauca	*Blue Atlas Cedar*	
Cedrus libani	*Lebanese Cedar*	
Cupressus arizonica	*Arizona Cypress*	
Juniperus osteosperma	*Utah Juniper*	
Juniperus scopulorum	*Rocky Mtn Juniper*	
Picea abies	*Norway Spruce*	*Dwarf varieties recommended*
Picea pungens	*Colorado Spruce*	*Dwarf varieties recommended*
Pinus aristata	*Bristlecone Pine*	
Pinus edulis	*Pinyon Pine*	*Utah's Choice selection*
Pinus flexilis	*Limber Pine*	
Pinus nigra	*Austrian Black Pine*	*Grows quickly*
Pinus ponderosa	*Ponderosa Pine*	*Needs room to grow*
Pinus strobes	*White Pine*	*Dwarf varieties recommended*
Pinus sylvestris	*Scotch Pine*	*Dwarf varieties recommended*
Pseudotsuga menziesii	*Douglas Fir*	
Thuja species	*Arborvitae*	

Ornamental Trees

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

Deciduous Shrubs

Full Sun

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

Shade

Holodiscus dumosus	*Mountain Spray*	
Kerria japonica	*Japanese Kerria*	
Symphoricarpus species	*Snowberry*	
Viburnum rhytidophyllum	*Leather-leaf Viburnum*	
Viburnum x rhytidophylloides	*Blackhaw*	

Evergreen Shrubs

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

Perennials

Sun

Achillea species	*Yarrow*	*Very low water needs*	*Gallardia species*	*Blanket Flower*	
Aethionema schistosum	*Stonecress*		*Gaura lindheimeri*	*Gaura*	
Agastache species	*Hyssop*	*Very low water needs (except A. foeniculum)*	*Geranium viscossissimum*	*Sticky Geranium*	*Utah's Choice selection*
			Geum species	*Geum*	
Allium species	*Ornamental Allium*	*Low water needs*	*Gypsophila paniculata*	*Baby's Breath*	
Amsonia tabernaemontana	*Blue Star*		*Hedysarum boreale*	*Utah Sweetvetch*	*Utah's Choice selection*
Anacyclus depressus	*Mount Atlas Daisy*		*Helenium hoopesii*	*Helen's Flower / Sneezeweed*	
Anaphalis margaritacea	*Pearl Everlasting*		*Helianthemum nummularium*	*Sunrose*	
Antennaria species	*Pussy Toes*		*Hemerocallis x species*	*Daylilies*	
Arabis causasia	*Rock Cress*		*Hesperaloe parviflora*	*RedYucca*	
Arenaria macradenia	*Showy Sandwort*	*Utah's Choice selection*	*Hymenoxis aucalis*	*Sundancer Daisy / Perky Sue*	*Utah's Choice selection*
Armeria maritime	*Sea Pinks / Sea Thrift*		*Iberis sempervirens*	*Candytuft*	
Asclepias tuberose	*Butterfly Weed*		*Iliamna rivularis*	*Maple Mallow*	*Utah's Choice selection*
Aster species	*Aster*		*Iris, Bearded hybrids*	*Bearded Iris*	*Low water needs*
Astragalus utahensis	*Utah Lady Finger*	*Utah's Choice selection*	*Kniphofia uvaria*	*Red Hot Poker*	
Aurinia saxatilis	*Basket of Gold*		*Lavandula augustifolia*	*Lavender*	
Baileya multiradiata	*Desert Marigold*	*Low water needs*	*Leucanthemum x superbum*	*Shasta Daisy*	
Ballota pseudodictamnus	*Horehound*		*Leucojum aestivum*	*Snowflake*	
Berlandiera lyrata	*Chocolate Flower*		*Liatris spicata*	*Liatris / Gayfeather*	
Brodiaea species	*Brodiaea*		*Limonium latifolium*	*Sea Lavender*	
Callirhoe involucrata	*Poppy Mallow / Wine Cups*	*Low water needs*	*Linum species*	*Flax*	
Calylophus species	*Sundrops*		*Melampodium leucanthum*	*Blackfoot Daisy*	
Campanula species	*Bell Flower*		*Mirabilis multiflora*	*Desert Four O'Clock*	*Utah's Choice selection*
Castilleja chromosa	*Indian Paintbrush*	*Utah's Choice selection*	*Monardella odoratissima*	*Little Beebalm*	*Utah's Choice selection*
Catananche caerulea	*Cupid's Dart*		*Narcissus species*	*Daffodils / Narcissus*	
Centranthus rubber	*Jupiter's Beard / Red Valerian*	*Low water needs*	*Nepeta x faassenii*	*Catmint*	
Colchicum autumnale	*Autumn Crocus*		*Oenothera marcocarpa*	*Evening Primrose*	*Low water needs*
Coreopsis verticillata	*Thread-leaf Coreopsis*		*Oenothera pallida*	*Evening Primrose*	*Low water needs*
Crocus species	*Crocus*		*Oenothera caespitosa*	*Fragrant Evening Primrose*	*Utah's Choice selection*
Dianthus x allwoodii	*Dianthus / Pinks*		*Origanum species*	*Oregano*	
Dianthus deltoids	*Dianthus / Pinks*		*Papaver orientale*	*Oriental Poppy*	*Low water needs*
Dianthus gratianopolitanus	*Dianthus / Pinks*		*Penstemon cyananthus*	*Firecracker Penstemon*	*Utah's Choice selection*
Dianthus plumaris	*Dianthus / Pinks*		*Penstemon palmeri*	*Palmer Penstemon*	*Utah's Choice selection*
Diascia integerrima	*Twinspurs*		*Penstemon utahensis*	*Utah Penstemon*	*Utah's Choice selection*
Dicamus albus	*Gas Plant*		*Penstemon whippleanus*	*Whipple Penstemon*	*Utah's Choice selection*
Echinacea species	*Cone Flower*		*Perovskia atriplicifolia*	*Russian Sage*	*Low water needs*
Echinops ritro	*Globe Thistle*		*Phlomis species*	*Jerusalem Sage*	
Erigeron species	*Fleabane*		*Potentilla species*	*Cinquefoil*	
Eriogonum species	*Buckwheat*	*Low water needs*	*Psilostrophe tagetina*	*Paper Flower*	
Eriogonum umbellatum	*Sulfurflower Buckwheat*	*Utah's Choice selection*	*Pulsatilla vulgaris*	*Pasque Flower*	
Erygium amethystinum	*Sea Holly*		*Ratibida columnifera*	*Mexican Hat*	

Rudbeckia species	*Black-eyed Susan*	
Salvia species	*Salvia / Sage*	
Salvia x sylvestris 'May Night'	*May Night Salvia*	
Santolina species	*Santolina / Lavender Cotton*	
Scabiosa caucasica	*Pincushion Flower*	
Sedum species	*Sedum / Stonecrop*	*Low water needs*
Sempervirum tectorum	*Hens and Chicks*	
Sphaeralcea species	*Globemallow*	
Sphaeralcea grossulariifolia	*Gooseberryleaf Globemallow*	*Utah's Choice*
Teucrium chamaedrys	*Germander*	
Thymus species	*Thyme*	
Tithonia rotundifolia	*Mexican Sunflower*	
Tulipa species	*Tulips*	
Veronica spicata	*Spike Speedwell Veronica*	
Viguiera multiflora	*Showy Goldeneye*	*Low water needs*
Yucca filamentosa	*Yucca / Adam's Needle*	*Low water needs*
Zauschneria latifolia	*Firechalice*	*Utah's Choice*
Zinnia grandiflora	*Desert Zinnia*	*Low water needs*
Zizophora clinopodioides	*Blue Mist Bush*	

Shade

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

Ornamental Grasses

Full Sun

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

Shade

Dechampsia caespitosa	*Tufted Hair Grass*
Molina caerula	*Purple Moor Grass*

Groundcovers

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

Vines

Campsis radicans	*Trumpet Vine*	*Extremely vigorous*
Clematis tangutica	*Clematis*	
Polygonum aubertii	*Silverlace Vine*	
Wisteria species	*Wisteria*	

Trees to be planted in naturalized areas

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

Unacceptable Trees and Shrubs

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

6.4 Design Review Checklist

Use for submission of plans to Hidden Valley DRC:

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 Hidden Valley 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.

Plans are not required at the pre-design meeting, however, the following items are recommended in order to maximize the effectiveness of this meeting with the Hidden Valley DRC:

- ❑ **Site plan of entire area of proposed improvement, showing property boundary and topography (11"x17" or larger size recommended)**
- ❑ **Plans, photographs and/or drawings of proposed building prototypes and styles**
- ❑ **Narrative letter describing the improvements, including the proposed land use, number of units/square feet of commercial space, density/FAR, vehicular and pedestrian access, building finishes, treatment of open space and common areas, etc.**

Step 2: Preliminary Plan Submittal

This review covers conceptual site planning and architecture, and preliminary landscape architecture for any proposed development or improvement in Hidden Valley. 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 Hidden Valley 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 (SFD neighborhoods)
- ☐ Proposed building footprints and building setbacks (SFA, multifamily, 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 Guidelines for Elevation Articulation Ratio calculation in Section 4.2)
- ☐ Typical exterior materials, colors, and finishes under consideration

Preliminary Landscape Architecture Plans (at a scale of no less than 1" = 100')

- ☐ 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)

In addition to the above plans, submit the following:

- ☐ Narrative letter describing the improvements, including the proposed land use, number of units/square feet of commercial space, density/FAR, vehicular and pedestrian access, building finishes, treatment of open space and common areas, etc.

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 Hidden Valley 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 paper sets and one (1) electronic set of design drawings are to be submitted to the Hidden Valley 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)
- ☐ 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)
- ☐ 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 ("Hidden Valley CC&Rs"), 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 the same scale as site plans)

- ☐ 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 (EAR) (See Architecture Standards for EA Ratio calculation - Section 4.2)
- ☐ 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 multifamily and commercial)

Landscape Architecture Plans (at a scale of no less than 1" = 100')

- ☐ 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

In addition to the above plans, submit the following:

- ☐ Narrative letter describing the improvements, including the proposed land use, number of units/square feet of commercial space, density/FAR, vehicular and pedestrian access, building finishes, treatment of open space and common areas, etc.

6.5 Enhanced EA Ratio Requirements

Enhanced EA Ratio requirements have been established in order to promote a higher level of exterior finishing for buildings that are located in "high visibility" areas within Hidden Valley. The following enhanced EA Ratios apply to all residential structures whose finished floor elevation is above the 5,280-foot contour line, otherwise know as the "Mile High Elevation", as depicted in Figure 5.5.

6.5.1 Enhanced EA Ratio for Single-Family Detached Buildings

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

Full or partial credit areas may not be re-counted, with two exceptions—masonry and fenestration beneath a porch or deck roof.

	Single-family Detached House Area				
	Under 1,700 SF	1,701-2,100 SF	2,101-2,500 SF	2,501-3,100 SF	3,101 and up
Enhanced EA Ratio Requirements					
Front and Exposed Elevation EA Ratio minimum*	0.40	0.44	0.46	0.52	0.58
Side Elevation(s) EA Ratio minimum	0.28	0.30	0.32	0.34	0.36
Passive Side Elevation EA Ratio minimum **	0.22	0.24	0.24	0.26	0.26
Rear Elevation EA Ratio minimum - Street Loac	0.32	0.34	0.36	0.38	0.44
Rear Elevation EA Ratio minimum - Alley Loac	0.16	0.20	0.23	0.26	0.32
Materials					
Exposed foundation at 2:12 or shallower slopes	Up to 20"				
Exposed foundation at slopes greater than 2:12	Up to 24"				
Minimum Fenestration Area per elevation (SF) ***	60	75	90	105	120
Roofing requirements	Architectural Grade				
Window Materials					
Allowable	Vinyl, Wood				
Prohibited	Aluminum				

* "Exposed Elevations" are those elevations that face streets, open spaces or hillside locations that are visible from surrounding streets, including street-side elevations of houses that are on a corner lot.

** A "Passive Side Elevation" is the inactive, or blank wall side of a building that is using a cross-use easement, zero-lot line, or another mechanism in order to integrate active areas of the lot with the architecture. These elevations are often characterized by the use of clerestory windows on the passive side. Houses that are not designed to share or bias outdoor spaces with the neighboring home will not be able to use the Passive Side EA Ratio requirement.

*** Depending on the proposed building style, Hidden Valley DRC may, but is not required to, grant a waiver for the minimum fenestration area.

6.5.2 Enhanced EA Ratio for Other Residential Buildings

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

	Building Type									
	Twinhomes		Townhomes						Multifamliy	Community Buildings & Clubhouses
	Front Load	Rear Load	Street Load		Attached Alley Load		Detached Alley Load			
			< 1,700 SF	≥ 1,700 SF	< 1,700 SF	≥ 1,700 SF	< 1,700 SF	≥ 1,700 SF		
Enhanced EA Ratio Requirements										
Front and Exposed Elevation EA Ratio minimum	0.43	0.52	0.40	0.48	0.54	0.61	0.58	0.60	0.64	
Side Elevation(s) EA Ratio minimum	0.34		0.32	0.34	0.32	0.34	0.34	0.34	0.36	0.54
Hidden Side Elevation EA Ratio minimum	0.24		0.24	0.25	0.25	0.25	0.25	0.25	0.30	n/a
Rear Elevation EA Ratio minimum	0.40	0.34	0.37	0.40	0.30	0..36	0.18	0.18	0.44	0.54
Materials										
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 (SF)	105									
Roofing requirements	Architectural Grade									
Window Materials										
Allowable	Vinyl, Wood									
Prohibited	Aluminum									


Stanley Consultants INC.
A Stanley Group Company
Engineering, Environments and Construction Services - Worldwide

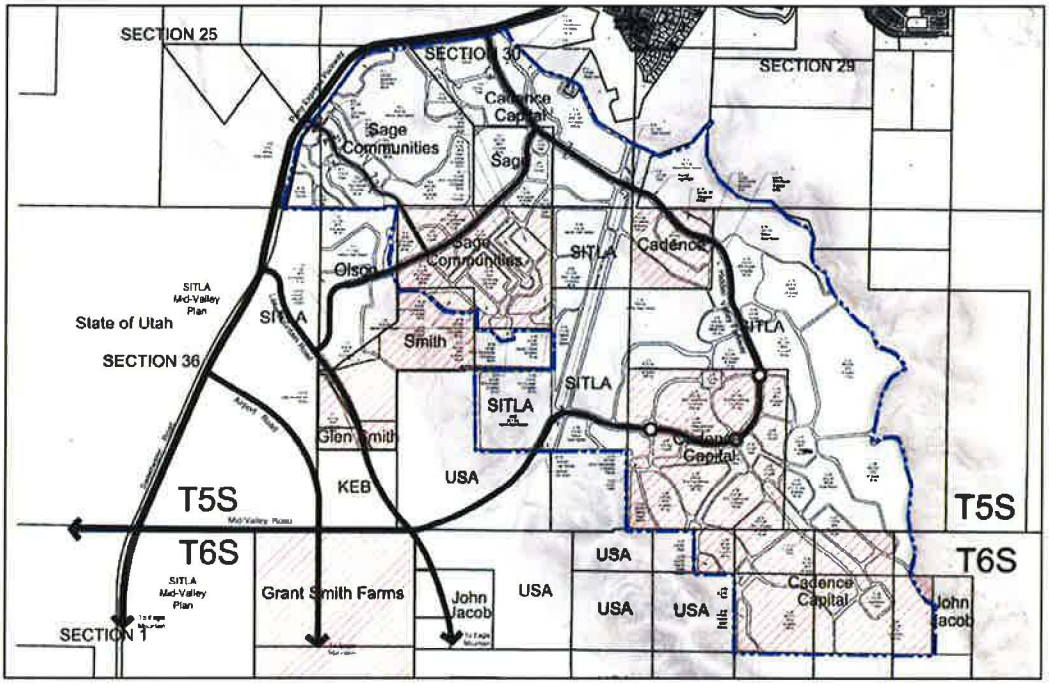
Exhibit H

Traffic Study

HALES ENGINEERING
innovative transportation solutions

Hidden Valley

Traffic Impact Study



Eagle Mountain, Utah

January 11, 2007

UT07-106

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed development of land located south of Pony Express Parkway in Eagle Mountain, Utah. The development is located primarily in Hidden Valley which is located east of Lake Mountain Road and southwest of The Ranches development. The 1,400 acre development is primarily composed of residential units with supporting civic land uses and open space. Some commercial land use will also be included.

Included within the analyses for this study are 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. Future 2015 and 2030 conditions were also analyzed.

TRAFFIC ANALYSIS

The following is an outline of the traffic analysis performed by Hales Engineering for the respective traffic conditions of this project.

Existing (2008) Background Conditions Analysis

Hales Engineering performed weekday p.m. (4:00 to 6:00) peak period traffic counts at the following intersection(s):

- Lone Tree Parkway / Pony Express Parkway

These counts were performed on Wednesday, January 24, 2007. Additionally, estimated traffic from a TIS completed by Hales Engineering for Oquirrh Mountain Ranch, in Eagle Mountain, completed in November 2007, was also included in the background volumes for 2008. Based on the combination of current intersection volumes and traffic generated by the site, the weekday p.m. peak hour was the critical time period identified for analysis. Detailed count data is included in Appendix A.

As shown in Table ES-1, all of the study intersections have acceptable levels of delay.

Project Conditions Analysis

The proposed land use for the project will be as follows:

- Residential
  - Single Family Dwelling Units 3,214

- Attached Homes (Townhomes, etc.) 1,816
- Apartments 317

- Commercial
  - Retail 40,000 sq ft GFA

Trip generation for the project was computed using trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition*, 2003. The projected net trip generation for the development is as follows:

- Daily Trips **38,852 vehicles per day**
- Morning Peak Hour Trips: **2,214 vehicles per hour**
- Evening Peak Hour Trips: **3,689 vehicles per hour**
- Saturday Trips: **41,574 vehicles per day**
- Saturday Peak Hour Trips: **3,099 vehicles per hour**

Weekday p.m. peak hour project generated trips were assigned to study intersections to assess impacts of the project as this combination created the "worst case" scenario.

Existing (2008) Plus Project Conditions Analysis

As shown in Table ES-1, based on overall intersection averages, most of the study intersections experience acceptable levels of delay with the exception of the Hidden Valley Parkway / Pony Express Parkway intersection. As is shown in Table ES-1, this delay can be mitigated to bring the LOS at that intersection to an acceptable level.

Future (2015) Background Conditions Analysis

As shown in Table ES-1, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

Future (2015) Plus Project Conditions Analysis

As shown in Table ES-1, based on overall intersection averages, all of the study intersections experience acceptable levels of delay. However, as will be discussed in the body of this report, some of the minor street approaches at unsignalized intersections have high levels of delay and will need to be mitigated.

Future (2030) Background Conditions Analysis

As shown in Table ES-1, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

Future (2030) Plus Project Conditions Analysis

As shown in Table ES-1, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

RECOMMENDATIONS

Hales Engineering recommends the following mitigations:

Existing (2008) Background Conditions Analysis

No mitigations are recommended.

Existing (2008) Plus Project Conditions Analysis

The following mitigations are recommended:

Hidden Valley Parkway / Pony Express Parkway:

- Signalize intersection
- Provide dual westbound left turn lanes. These two lanes will be trap lanes while an additional third lane is added on the right hand side for through vehicles. This configuration will also allow for a "High T" configuration when through volumes on Pony Express Parkway become larger in the future.
- Provide protected phasing for the westbound left turn movement
- Provide two through lanes in the eastbound direction to allow the maximum possible split for the westbound left turn movement

Sage Road / Hidden Valley Parkway (internal intersection):

- Signalize intersection

Signal Coordination:

- Provide coordination between the westbound left turn movement of the Hidden Valley Parkway / Pony Express Parkway intersection with the north- and southbound movements of the Sage Road / Hidden Valley Parkway intersection.

Pony Express Parkway:

- Widen from three lanes to five lanes northeast of Hidden Valley Parkway / Pony Express Parkway intersection.

Future (2015) Background Conditions Analysis

No mitigations are recommended.

Future (2015) Plus Project Conditions Analysis

The following mitigations are recommended:

Red Pine Road & Northwest Access / Pony Express Road:

- Signalize intersection

Future (2030) Background Conditions Analysis

For this analysis time period, it was assumed that Pony Express Roadway would be widened from the current three lane cross section to a five lane cross section.

No additional mitigations are required.

Future (2030) Plus Project Conditions Analysis

No mitigations are recommended.

TABLE ES-1
P.M. Peak Hour Conditions
Eagle Mountain - Hidden Valley TIS

Intersection Description	Existing 2008 Background LOS (Sec/Veh[1])	Existing 2008 Plus Project LOS (Sec/Veh[1])	Existing 2008 Plus Project - Mitigated LOS (Sec/Veh[1])	Future 2015 Background LOS (Sec/Veh[1])	Future 2015 Plus Project LOS (Sec/Veh[1])	Future 2015 Plus Project - Mitigated LOS (Sec/Veh[1])	Future 2030 Background LOS (Sec/Veh[1])	Future 2030 Plus Project LOS (Sec/Veh[1])
Hidden Valley Pkwy / Pony Express Pkwy[2]	-	F (>80.0)	C (26.3)	-	C (33.4)	C (32.4)	-	D (52.2)
Lone Tree Pkwy / Pony Express Pkwy	A (3.5)	A (2.4)	A (3.7)	A (4.6)	A (5.2)	A (9.1)	A (4.0)	A (5.6)
Red Pine Rd / Pony Express Pkwy	A (2.6)	A (6.7)	A (8.4)	A (3.4)	C (17.8)	C (24.8)	A (2.1)	B (12.0)
Lake Mountian Rd / Sweetwater Rd[2]	-	A (5.0)	A (4.7)	-	A (5.5)	A (5.5)	-	A (3.4)
Mid Valley Rd / Sweetwater Rd[2]	-	A (7.3)	A (7.8)	-	B (10.7)	B (11.1)	-	A (6.6)
Sage Rd / Hidden Valley Pkwy[2]	-	B (11.2)	B (14.9)	-	B (15.1)	B (15.0)	-	B (15.7)
North Roundabout Rd / Hidden Valley Pkwy[2]	-	A (5.3)	A (9.5)	-	A (8.8)	A (8.1)	-	A (6.9)
South Roundabout Rd / Hidden Valley Pkwy[2]	-	A (7.4)	A (7.8)	-	A (7.2)	A (7.4)	-	A (6.8)

1. Intersection LOS and delay (seconds/vehicle) values represent the overall intersection average. LOS and Delay details for the worst movement of unsignalized intersections are reported in the main body of the report.
2. This intersection is a project intersection and was only analyzed in "plus project" scenarios

Source: Hales Engineering, January 2008

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed development of land located south of Pony Express Parkway in Eagle Mountain, Utah. The development is located primarily in Hidden Valley which is located east of Lake Mountain Road and southwest of The Ranches development. The 1,400 acre development is primarily composed of residential units with supporting civic land uses and open space. Some commercial land use will also be included.

Included within the analyses for this study are 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. Future 2015 and 2030 conditions were also analyzed.

B. Scope

The study area was defined based on conversations with the development team and Eagle Mountain City staff members. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersections:

- Hidden Valley Parkway / Pony Express Parkway
- Lone Tree Parkway / Pony Express Parkway
- Red Pine Road / Pony Express Parkway
- Lake Mountain Road / Sweetwater Road
- Mid Valley Road / Sweetwater Road
- Sage Road / Hidden Valley Parkway
- North Roundabout Road / Hidden Valley Parkway
- South Roundabout Road / Hidden Valley Parkway

The Lone Tree Road / Pony Express Parkway and Red Pine Road / Pony Express Parkway intersections are the only existing intersections. All other intersections are project intersections that will be built as part of the development, or are existing dirt road intersections that will be improved as part of the development.

C. 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 both signalized and unsignalized intersections.

Table 1
Level of Service Descriptions

Level of Service	Description of Traffic Conditions	Average Delay (seconds / vehicle)
SIGNALIZED INTERSECTIONS[1]		
A	Extremely favorable progression and a very low level of control delay. Individual users are virtually unaffected by others in the traffic stream.	0 ≤ 10.0
B	Good progression and a low level of control delay. The presence of other users in the traffic stream becomes noticeable.	> 10.0 and ≤ 20.0
C	Fair progression and a moderate level of control delay. The operation of individual users becomes somewhat affected by interactions with others in the traffic stream.	>20.0 and ≤ 35.0
D	Marginal progression with relatively high levels of control delay. Operating conditions are noticeably more constrained.	> 35.0 and ≤ 55.0
E	Poor progression with unacceptably high levels of control delay. Operating conditions are at or near capacity.	> 55.0 and ≤ 80.0
F	Unacceptable progression with forced or breakdown operating conditions.	> 80.0
UNSIGNALIZED INTERSECTIONS[2]		**Worst Approach Delay (seconds / vehicle)**
A	Free Flow / Insignificant Delay	0 ≤ 10.0
B	Stable Operations / Minimum Delays	>10.0 and ≤ 15.0
C	Stable Operations / Acceptable Delays	>15.0 and ≤ 25.0
D	Approaching Unstable Flows / Tolerable Delays	>25.0 and ≤ 35.0
E	Unstable Operations / Significant Delays Can Occur	>35.0 and ≤ 50.0
F	Forced Flows / Unpredictable Flows / Excessive Delays Occur	> 50.0

Source:

1. Hales Engineering Descriptions, based on *Highway Capacity Manual, 2000 Methodology* (Transportation Research Board, 2000).
2. Hales Engineering Descriptions, based on *Highway Capacity Manual, 2000 Methodology* (Transportation Research Board, 2000).

The Highway Capacity Manual 2000 (HCM 2000) methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For unsignalized intersections LOS is reported based

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

D. 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 D. However, if LOS E or F for an individual approach at an intersection exists, explanation and/or mitigation measures will be presented. An LOS D threshold is consistent with "state-of-the-practice" traffic engineering principles.

II. EXISTING (2008) BACKGROUND CONDITIONS

A. Purpose

The purpose of the existing (2008) background analysis is to study the intersections and roadways during the peak travel periods of the day for background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified and potential mitigation measures recommended. This analysis will provide a baseline condition that may be compared to the build conditions to identify the impacts of the development.

B. Roadway System

The primary roadways that will provide access to the project site are described below:

- Pony Express Parkway – is a city-operated roadway currently constructed as a three lane road with one travel lane in each direction of travel and a center raised median. Median openings and turn pockets have already been constructed at the locations of future intersections. Right-of-way has been preserved along this corridor to widen Pony Express Parkway from the current three lane cross section to a five lane cross section. Spacing between current median openings varies between 500 and 1000 feet. Pony Express Parkway turns into Sweetwater Road as it approaches downtown Eagle Mountain.

C. Traffic Volumes

Hales Engineering performed weekday p.m. (4:00 p.m. to 6:00 p.m.) peak period traffic counts at the following intersection(s):

- Lone Tree Parkway / Pony Express Parkway

These counts were performed on Wednesday, January 24, 2007. The p.m. peak hour was determined to be between 5:00 and 6:00 p.m. The counts were also seasonally adjusted based on a factor obtained from a UDOT automated traffic recorder (ATR number 618) located in the general vicinity of the project. Additionally, estimated traffic from a TIS completed by Hales Engineering for Oquirrh Mountain Ranch, in Eagle Mountain, completed in November 2007, was also included in the background volumes for 2008. Based on the combination of current intersection volumes and traffic generated by the site, the weekday p.m. peak hour was the critical time period identified for analysis. Detailed count data is included in Appendix A.

D. Level of Service Analysis

Using the Synchro/SimTraffic analysis software which follows the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, the p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 2 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used for all intersections to provide a statistical evaluation of the interaction between the intersections. These results serve as a baseline condition for the impact analysis of the proposed development. As shown in Table 2, based on overall intersection averages, all of the study intersections have acceptable levels of delay.

E. Mitigation Measures

No mitigation measures are recommended.

Table 2

Existing (2008) Background
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	8.9	A	3.5	A
Red Pine Rd / Pony Express Pkwy	EB Stop	EB Left	8.2	A	2.6	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

III. PROJECT CONDITIONS

A. 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.

B. Project Description

The 1,400 acre development is composed primarily of residential units with supporting civic land uses and open space. Some commercial land use will also be included. See site plan located in Appendix C.

The proposed land use for the project will be as follows:

- Residential
  - Single Family Dwelling Units 3,214
  - Attached Homes (Townhomes, etc.) 1,816
  - Apartments 317
- Commercial
  - Retail 40,000 sq ft GFA

C. Trip Generation

Trip generation for the project was computed using trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition*, 2003. Trips were generated using the land use intensity previously described and are summarized in Table 3 for the proposed project.

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 trips because the proposed land use is primarily residential and the adjacent street volumes are not large enough to support high pass-by trip percentages for the retail land use that is part of the development. In addition, Hales Engineering did not adjust for internal capture because there is little retail as part of this development and the internal capture would be small. However, assuming no internal capture is a conservative assumption.

Table 3
Eagle Mountain - Hidden Valley TIS
Trip Generation

	Land Use[1]	Number of Units	Unit Type	Daily Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Daily Trips
T	Single-Family Detached Housing (210)	230	Dwelling Units	2,237	50%	50%	1,119	1,119	2,237
R	Single-Family Detached Housing (210)	90	Dwelling Units	944	50%	50%	472	472	944
R	Residential Condominium/Townhouse (230)	180	Dwelling Units	1,058	50%	50%	529	529	1,058
R	Apartment (220)	149	Dwelling Units	1,046	50%	50%	523	523	1,046
S	Single-Family Detached Housing (210)	257	Dwelling Units	2,478	50%	50%	1,239	1,239	2,478
S	Residential Condominium/Townhouse (230)	471	Dwelling Units	2,396	50%	50%	1,198	1,198	2,396
P	Single-Family Detached Housing (210)	150	Dwelling Units	1,510	50%	50%	755	755	1,510
P	Residential Condominium/Townhouse (230)	100	Dwelling Units	642	50%	50%	321	321	642
P	Apartment (220)	750	Dwelling Units	4,658	50%	50%	2,329	2,329	4,658
U	Single-Family Detached Housing (210)	1374	Dwelling Units	11,585	50%	50%	5,792	5,792	11,585
U	Residential Condominium/Townhouse (230)	1065	Dwelling Units	4,794	50%	50%	2,397	2,397	4,794
U	Apartment (220)	268	Dwelling Units	1,761	50%	50%	881	881	1,761
U	Shopping Center (820)	40	1,000 Sq. Ft. GLA	3,743	50%	50%	1,872	1,872	3,743
	Project Total Daily Trips						19,426	19,426	38,852

	Land Use[1]	Number of Units	Unit Type	a.m. Peak Hour Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total a.m. Trips
T	Single-Family Detached Housing (210)	230	Dwelling Units	170	25%	75%	43	128	170
R	Single-Family Detached Housing (210)	90	Dwelling Units	72	25%	75%	18	54	72
R	Residential Condominium/Townhouse (230)	180	Dwelling Units	83	17%	83%	14	69	83
R	Apartment (220)	149	Dwelling Units	77			0	0	0
S	Single-Family Detached Housing (210)	257	Dwelling Units	189	25%	75%	47	142	189
S	Residential Condominium/Townhouse (230)	471	Dwelling Units	178	17%	83%	30	148	178
P	Single-Family Detached Housing (210)	150	Dwelling Units	114	25%	75%	29	86	114
P	Residential Condominium/Townhouse (230)	100	Dwelling Units	52	17%	83%	9	43	52
P	Apartment (220)	750	Dwelling Units	371			0	0	0
U	Single-Family Detached Housing (210)	1374	Dwelling Units	971	25%	75%	243	728	971
U	Residential Condominium/Townhouse (230)	1065	Dwelling Units	343	17%	83%	58	284	343
U	Apartment (220)	268	Dwelling Units	135			0	0	0
U	Shopping Center (820)	40	1,000 Sq. Ft. GLA	41	61%	39%	25	16	41
	Project Total a.m. Peak Hour Trips						516	1,698	2,214

	Land Use[1]	Number of Units	Unit Type	p.m. Peak Hour Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total p.m. Trips
T	Single-Family Detached Housing (210)	230	Dwelling Units	227	63%	37%	143	84	227
R	Single-Family Detached Housing (210)	90	Dwelling Units	97	63%	37%	61	36	97
R	Residential Condominium/Townhouse (230)	180	Dwelling Units	97	67%	33%	65	32	97
R	Apartment (220)	149	Dwelling Units	100	65%	35%	65	35	100
S	Single-Family Detached Housing (210)	257	Dwelling Units	251	63%	37%	158	93	251
S	Residential Condominium/Townhouse (230)	471	Dwelling Units	214	67%	33%	144	71	214
P	Single-Family Detached Housing (210)	150	Dwelling Units	154	63%	37%	97	57	154
P	Residential Condominium/Townhouse (230)	100	Dwelling Units	60	67%	33%	40	20	60
P	Apartment (220)	750	Dwelling Units	430	65%	35%	280	151	430
U	Single-Family Detached Housing (210)	1374	Dwelling Units	1,133	63%	37%	714	419	1,133
U	Residential Condominium/Townhouse (230)	1065	Dwelling Units	418	67%	33%	280	138	418
U	Apartment (220)	268	Dwelling Units	165	65%	35%	107	58	165
U	Shopping Center (820)	40	1,000 Sq. Ft. GLA	342	48%	52%	164	178	342
	Project Total p.m. Peak Hour Trips						2,319	1,371	3,689

	Land Use[1]	Number of Units	Unit Type	Saturday Daily Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Sat. Daily Trips
T	Single-Family Detached Housing (210)	230	Dwelling Units	2,303	50%	50%	1,151	1,151	2,303
R	Single-Family Detached Housing (210)	90	Dwelling Units	953	50%	50%	477	477	953
R	Residential Condominium/Townhouse (230)	180	Dwelling Units	1,080	50%	50%	540	540	1,080
R	Apartment (220)	149	Dwelling Units	913	50%	50%	457	457	913
S	Single-Family Detached Housing (210)	257	Dwelling Units	2,556	50%	50%	1,278	1,278	2,556
S	Residential Condominium/Townhouse (230)	471	Dwelling Units	2,133	50%	50%	1,066	1,066	2,133
P	Single-Family Detached Housing (210)	150	Dwelling Units	1,541	50%	50%	770	770	1,541
P	Residential Condominium/Townhouse (230)	100	Dwelling Units	790	50%	50%	395	395	790
P	Apartment (220)	750	Dwelling Units	5,631	50%	50%	2,816	2,816	5,631
U	Single-Family Detached Housing (210)	1374	Dwelling Units	12,357	50%	50%	6,178	6,178	12,357
U	Residential Condominium/Townhouse (230)	1065	Dwelling Units	4,283	50%	50%	2,142	2,142	4,283
U	Apartment (220)	268	Dwelling Units	1,848	50%	50%	924	924	1,848
U	Shopping Center (820)	40	1,000 Sq. Ft. GLA	5,187	50%	50%	2,594	2,594	5,187
	Project Total Saturday Trips						20,787	20,787	41,574

	Land Use[1]	Number of Units	Unit Type	Sat Peak Hour Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	Total Sat Pk Hr Trips
T	Single-Family Detached Housing (210)	230	Dwelling Units	216	54%	46%	116	99	216
R	Single-Family Detached Housing (210)	90	Dwelling Units	91	54%	46%	49	42	91
R	Residential Condominium/Townhouse (230)	180	Dwelling Units	95	54%	46%	51	44	95
R	Apartment (220)	149	Dwelling Units	77			0	0	0
S	Single-Family Detached Housing (210)	257	Dwelling Units	240	54%	46%	129	110	240
S	Residential Condominium/Townhouse (230)	471	Dwelling Units	179	54%	46%	97	82	179
P	Single-Family Detached Housing (210)	150	Dwelling Units	144	54%	46%	78	66	144
P	Residential Condominium/Townhouse (230)	100	Dwelling Units	72	54%	46%	39	33	72
P	Apartment (220)	750	Dwelling Units	390			0	0	0
U	Single-Family Detached Housing (210)	1374	Dwelling Units	1,234	54%	46%	666	568	1,234
U	Residential Condominium/Townhouse (230)	1065	Dwelling Units	351	54%	46%	190	162	351
U	Apartment (220)	268	Dwelling Units	139			0	0	0
U	Shopping Center (820)	40	1,000 Sq. Ft. GLA	477	52%	48%	248	229	477
	Project Total Saturday Peak Hour Trips						1,664	1,435	3,099

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

SOURCE: Hales Engineering, January 2008

D. 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 assumed for this development is as follows:

To/From the Development:

- 80% North
- 20% South

These trip distribution assumptions were used to assign the p.m. peak hour generated trips at the study intersections to create a trip assignment for the proposed development. Because of the large number of individual neighborhoods and because there were multiple possible routes to enter and exit the development, the computer software TRAFFIX was used to distribute and assign project generated trips. Trip assignment for the p.m. peak period is shown in Appendix D.

IV. EXISTING (2008) PLUS PROJECT CONDITIONS

A. 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 development were combined with the projected 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 the development. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

B. Development Geometric Changes

The existing conditions analysis assumed that as part of the development, a traffic signal would be installed at the following locations:

- Hidden Valley Parkway / Pony Express Parkway (Main project access)
- Sage Road / Hidden Valley Parkway (Internal intersection)

Additionally, it was assumed that Pony Express Parkway would be widened from its current three lane cross section to a five lane cross section starting at Hidden Valley Road and heading to the northeast. Furthermore, it was assumed that Hidden Valley Road would be constructed as a five lane road from Pony Express Parkway south to the vicinity of northern roundabout. The specific location of the end of the five lane cross section can only be determined after more specific details have been identified at the major intersections. However, a five lane cross section will not be needed south of the northern roundabout.

Turn pockets for new project accesses to the existing roadway (Pony Express Parkway and Sweetwater Road) were assumed to be 100 feet long.

C. Traffic Volumes

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

The existing (2008) plus project p.m. peak hour volumes were generated for the study intersections and are shown in Appendix D.

D. Level of Service Analysis

Using Synchro/SimTraffic, which follow the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, 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). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. As shown in Table 4, based on overall intersection averages, the Hidden Valley Parkway / Pony Express Parkway intersection experiences unacceptable levels of delay due to the large left turn ingress demand.

E. Mitigation Measures

The following mitigations are recommended:

Hidden Valley Parkway / Pony Express Parkway:

- Provide dual westbound left turn lanes. These two lanes will be trap lanes while an additional third lane is added in the southbound direction for through vehicles. This configuration will also allow for a "High T" configuration when through volumes on Pony Express Parkway become larger in the future.
- Provide protected phasing for the westbound left turn movement
- Provide two through lanes in the eastbound direction to allow the maximum possible split for the westbound left turn movement

Signal Coordination:

- Provide coordination between the westbound left turn movement of the Hidden Valley Parkway / Pony Express Parkway intersection and the north- and southbound movements of the Sage Road / Hidden Valley Parkway intersection.

Table 5 shows the results of the SimTraffic analysis after implementing the above mitigations. As can be seen in Table 5, based on overall intersection averages, all of the intersections have acceptable levels of service. The westbound left turn movement at the northwest access (across from Red Pine Drive) does have LOS E. This intersection will likely need to be signalized in the future as through volumes in this corridor will increase.

Table 4

Existing (2008) Plus Project
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Hidden Valley Pkwy / Pony Express Pkwy	Signal	-	-	-	>80.0	F
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	11.1	B	2.4	A
Red Pine Rd / Pony Express Pkwy	EB/WB Stop	WB Left	22.2	C	6.7	A
Lake Mountain Road / Sweetwater Road	WB Stop	NB Thru	7.6	A	5.0	A
Mid Valley Road / Sweetwater Road	EB/WB Stop	WB Left	27.9	D	7.3	A
Sage Road / Hidden Valley Road	Signal	-	-	-	11.2	B
North Roundabout Rd / Hidden Valley Road	Roundabout	SB Left	6.2	A	5.3	A
South Roundabout Rd / Hidden Valley Road	Roundabout	EB Thru	129.	B	7.4	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

Table 5

Existing (2008) Plus Project – Mitigated
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Hidden Valley Pkwy / Pony Express Pkwy	Signal	-	-	-	26.3	C
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	20.1	C	3.7	A
Red Pine Rd / Pony Express Pkwy	EB/WB Stop	WB Left	42.0	E	8.4	A
Lake Mountain Road / Sweetwater Road	WB Stop	NB Thru	8.2	A	4.7	A
Mid Valley Road / Sweetwater Road	EB/WB Stop	WB Left	27.9	D	7.8	A
Sage Road / Hidden Valley Road	Signal	-	-	-	14.9	B
North Roundabout Rd / Hidden Valley Road	Roundabout	SB Left	14.7	B	9.5	A
South Roundabout Rd / Hidden Valley Road	Roundabout	EB Thru	11.3	C	7.8	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

V. FUTURE (2015) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2015) background analysis is to study the intersections and roadways during the peak travel periods of the day during future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified and potential mitigation measures recommended.

B. Traffic Volumes

Traffic volumes for the future year 2015 were projected using growth estimates from the MAG 2030 model. The MAG model shows Pony Express Parkway growing to approximately 15,000 vehicles per day (vpd) between 2008 and 2030. Hales engineering assumed that some of this growth (5,000 vpd) would be included in the growth of this project as it is a significant portion of developable land in the area. The remainder of 10,000 vpd equates to a growth rate of approximately 6.5 percent per year. Hales Engineering used a conservative growth rate of 7 percent per year to apply to the background traffic to estimate future 2015 background conditions

The resulting future 2015 p.m. peak hour traffic volumes are shown in Appendix D.

C. Level of Service Analysis

Using Synchro/SimTraffic which follow the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, the weekday p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 6 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. These results serve as a baseline condition for the impact analysis of the proposed development during future (2015) conditions. As shown in Table 6, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

D. Mitigation Measures

No mitigations are recommended.

The estimated ADT on Pony Express Parkway using the growth rates discussed above is between 10,000 and 11,000 vpd, therefore the current three lane cross section will still be adequate.

Table 6

Future (2015) Background
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	**Control**	**Approach[1, 3]**	**Aver. Delay (Sec / Veh)[1]**	**LOS[1]**	**Aver. Delay (Sec / Veh)[2]**	**LOS[2]**
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	11.5	B	4.6	A
Red Pine Rd / Pony Express Pkwy	EB Stop	EB Left	9.4	A	3.4	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

VI. FUTURE (2015) PLUS PROJECT CONDITIONS

A. Purpose

This section of the report examines the traffic impacts of the proposed project at each of the study intersections during future 2015 conditions. The trips generated by the proposed development were combined with the future background traffic volumes to create the future plus project conditions. The future plus project scenario evaluates the impacts of the project traffic on the surrounding roadway network assuming full build out of the project. This scenario provides valuable insight into the potential impacts of the proposed project on future background traffic conditions.

B. Traffic Volumes

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

The future (2015) plus project p.m. peak hour volumes were generated for the study intersections and are shown in Appendix D.

C. Level of Service Analysis

Using the Synchro/SimTraffic Software which follow the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, the future 2015 plus project p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 7 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used for the analysis to provide a statistical evaluation of the interaction between the intersections. As shown in Table 7, based on overall intersection averages, all of the study intersections experience acceptable levels of delay. However, the Red Pine Road and Northwest Access / Pony Express Parkway intersection had high levels of delay on the minor street approaches.

D. Mitigation Measures

The following mitigations recommended:

<u>Red Pine Road & Northwest Access / Pony Express Parkway:</u>

- Signalize intersection

Table 7

Future (2015) Plus Project
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Hidden Valley Pkwy / Pony Express Pkwy	Signal	-	-	-	33.4	C
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	37.8	E	5.2	A
Red Pine Rd / Pony Express Pkwy	EB/WB Stop	WB Left	>50.0	F	17.8	C
Lake Mountain Road / Sweetwater Road	WB Stop	NB Thru	9.2	A	5.5	A
Mid Valley Road / Sweetwater Road	EB/WB Stop	WB Left	47.7	E	10.7	B
Sage Road / Hidden Valley Road	Signal	-	-	-	15.1	B
North Roundabout Rd / Hidden Valley Road	Roundabout	SB Left	12.4	B	8.8	A
South Roundabout Rd / Hidden Valley Road	Roundabout	EB Thru	10.8	B	7.2	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

This intersection will likely meet the Peak Hour Vehicular Volume Warrant (MUTCD Warrant 3A). Installing the signal will also prevent vehicles from using the Main Access (Hidden Valley Parkway) which already has very high volumes.

Table 8 shows the results of the analysis after implementing the above mitigations. While some unsignalized intersections still have high levels of delay on the minor street approaches, overall, the intersections have acceptable levels of delay. The estimated ADT on Pony Express Parkway adjacent to the development in 2015 under "plus project" conditions is still below the capacity of the road with a three lane cross section. However, it is approaching volumes that will need to be mitigated by adding additional capacity. This additional capacity will create larger gaps for the left turn ingress and egress movements from the side streets.

Table 8

Future (2015) Plus Project - Mitigated
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Hidden Valley Pkwy / Pony Express Pkwy	Signal	-	-	-	32.4	C
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	>50.0	F	9.1	A
Red Pine Rd / Pony Express Pkwy	Signal	-	-	-	24.8	C
Lake Mountain Road / Sweetwater Road	WB Stop	NB Thru	9.2	A	5.5	A
Mid Valley Road / Sweetwater Road	EB/WB Stop	WB Left	>50.0	F	11.1	B
Sage Road / Hidden Valley Road	Signal	-	-	-	15.0	B
North Roundabout Rd / Hidden Valley Road	Roundabout	SB Left	11.5	B	8.1	A
South Roundabout Rd / Hidden Valley Road	Roundabout	EB Thru	10.8	B	7.4	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

VII. FUTURE (2030) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2030) background analysis is to study the intersections and roadways during the peak travel periods of the day during future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified and potential mitigation measures recommended.

B. Traffic Volumes

Traffic volumes for the future year 2030 were projected using growth estimates discussed in Chapter V of this report.

The resulting future 2030 p.m. peak hour traffic volumes are shown in Appendix D.

C. Background Geometric Changes

For purposes of this report, it was assumed that Pony Express Parkway (and Sweetwater Parkway) would be constructed to a five lane facility as the estimated ADT in 2030 is 17,000 vehicles per day.

D. Level of Service Analysis

Using Synchro/SimTraffic which follow the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, the p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 9 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. These results serve as a baseline condition for the impact analysis of the proposed development during future (2030) conditions. As shown in Table 9, based on overall intersection averages, both of the study intersections experience acceptable levels of delay.

E. Mitigation Measures

No mitigations are recommended.

Table 9

Future (2030) Background
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	**Control**	**Approach[1, 3]**	**Aver. Delay (Sec / Veh)[1]**	**LOS[1]**	**Aver. Delay (Sec / Veh)[2]**	**LOS[2]**
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	27.2	D	4.0	A
Red Pine Rd / Pony Express Pkwy	EB Stop	EB Left	19.5	C	2.1	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

VIII. FUTURE (2030) PLUS PROJECT CONDITIONS

A. Purpose

This section of the report examines the traffic impacts of the proposed project at each of the study intersections during future 2030 conditions. The trips generated by the proposed development were combined with the future background traffic volumes to create the future plus project conditions. The future plus project scenario evaluates the impacts of the project traffic on the surrounding roadway network assuming full build out of the project. This scenario provides valuable insight into the potential impacts of the proposed project on future background traffic conditions.

B. Traffic Volumes

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

The future (2030) plus project p.m. peak hour volumes were generated for the study intersections and are shown in Appendix D.

C. Level of Service Analysis

Using the Synchro/SimTraffic Software which follow the Highway Capacity Manual (HCM) 2000 methodology introduced in Chapter I, the future 2030 plus project p.m. peak hour LOS was computed for each study intersection. The results of this analysis are reported in Table 10 (see Appendix B for the detailed LOS reports). Multiple runs of SimTraffic were used for the analysis to provide a statistical evaluation of the interaction between the intersections. As shown in Table 10, based on overall intersection averages, all of the study intersections experience acceptable levels of delay.

D. Mitigation Measures

No mitigations are recommended.

As is shown in Table 10, the minor street approach of the Lone Tree Parkway / Pony Express Parkway intersection does have a failing LOS; however, no mitigations exist to eliminate this delay. The intersection is too close to the future recommended signal at the Red Pine Road & Northwest Access / Pony Express Parkway intersection, therefore it cannot be signalized. During peak periods of the day when making the left egress movement from Lone Tree Parkway is difficult, vehicles can make the turn from the signalized intersection to the west instead.

Table 10

Future (2030) Plus Project
P.M. Peak Hour Level of Service

Intersection		Worst Approach			Overall Intersection	
Description	Control	Approach[1, 3]	Aver. Delay (Sec / Veh)[1]	LOS[1]	Aver. Delay (Sec / Veh)[2]	LOS[2]
Hidden Valley Pkwy / Pony Express Pkwy	Signal	-	-	-	52.2	D
Lone Tree Pkwy / Pony Express Pkwy	EB Stop	EB Left	>50.0	F	5.6	A
Red Pine Rd / Pony Express Pkwy	Signal	-	-	-	12.0	B
Lake Mountain Road / Sweetwater Road	WB Stop	SB Left	5.8	A	3.4	A
Mid Valley Road / Sweetwater Road	EB/WB Stop	WB Left	38.7	D	6.6	A
Sage Road / Hidden Valley Road	Signal	-	-	-	15.7	B
North Roundabout Rd / Hidden Valley Road	Roundabout	SB Left	9.4	A	6.9	A
South Roundabout Rd / Hidden Valley Road	Roundabout	EB Thru	10.1	B	6.8	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. SB Left = Southbound left turn movement, etc.

Source: Hales Engineering, January 2008

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APPENDIX A

Turning Movement Counts

TrafficCounts
2364 North 1450 East
Lehi, Utah 84043
801.636.0891

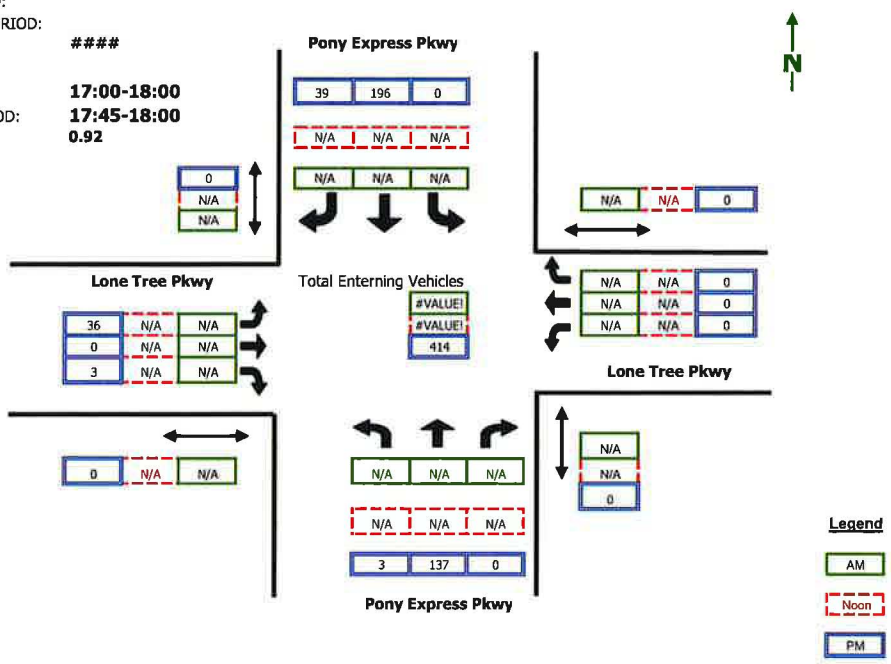
Intersection Turning Movement Summary

Intersection:	**Lone Tree Pkwy / Pony Express Pkwy**	**Date:**	**1-24-07, Wed**
	North/South: Pony Express Pkwy	**Day of Week Adjustment:**	**100.0%**
	East/West: Lone Tree Pkwy	**Month of Year Adjustment:**	**87.4%**
Jurisdiction:	**Eagle Mtn., UT**	**Adjustment Station #:**	**618**
Project Title:		**Growth Rate:**	**0.0%**
Project No:	**P161**	**Number of Years:**	**0**
Weather:			

AM PEAK HOUR PERIOD:
AM PEAK 15 MINUTE PERIOD:
AM PHF: ####

NOON PEAK HOUR PERIOD:
NOON PEAK 15 MINUTE PERIOD:
NOON PHF: ####

PM PEAK HOUR PERIOD: **17:00-18:00**
PM PEAK 15 MINUTE PERIOD: **17:45-18:00**
PM PHF: **0.92**



RAW COUNT SUMMARIES	Pony Express Pkwy Northbound				Pony Express Pkwy Southbound				Lone Tree Pkwy Eastbound				Lone Tree Pkwy Westbound				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00-7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15-7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30-7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45-8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00-8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15-8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30-8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45-9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NOON PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
11:00-11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15-11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30-11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45-12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00-12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15-12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30-12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45-13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00-16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15-16:30	0	43	0	0	0	40	5	0	6	0	0	0	0	0	0	0	94
16:30-16:45	2	37	0	0	0	43	3	0	13	0	0	0	0	0	0	0	98
16:45-17:00	0	39	0	0	0	43	6	0	10	0	0	0	0	0	0	0	98
17:00-17:15	2	37	0	0	0	38	9	0	13	0	2	0	0	0	0	0	101
17:15-17:30	0	29	0	0	0	56	11	0	9	0	1	0	0	0	0	0	106
17:30-17:45	0	38	0	0	0	45	5	0	7	0	0	0	0	0	0	0	95
17:45-18:00	1	33	0	0	0	57	14	0	7	0	0	0	0	0	0	0	112

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APPENDIX B

LOS Results 2008, 2015, 2030

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SimTraffic LOS Report

Project: Eagle Mountain - Hidden Valley TIS
Analysis Period: *Existing (2008) Background*
Time Period: *PM Peak Hour* **Project #:** *UT07-106*

Intersection: Lone Tree Pkwy & Pony Express Pkwy
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SW	T	373	364	98	4.3	A
	R	39	44	113	3.5	A
	Subtotal	412	408	99		
NE	L	3	3	100	4.4	A
	T	235	237	101	1.5	A
	Subtotal	238	240	101		
EB	L	36	33	92	8.9	A
	R	3	4	133	4.3	A
	Subtotal	39	37	95		
WB						
Total		689	685	99	3.5	A

Intersection: North Red Pine Rd & Pony Express Pkwy
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SW	T	367	360	98	2.3	A
	R	9	8	86	1.7	A
	Subtotal	376	368	98		
NE	L	10	11	107	7.2	A
	T	233	235	101	2.7	A
	Subtotal	243	246	101		
SE	L	5	5	100	8.2	A
	R	6	7	112	4.1	A
	Subtotal	11	12	109		
WB						
Total		630	626	99	2.6	A

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #1 5:00

Movement	EBT	WBT	All
Total Delay (hr)	0.0	0.1	0.1
Delay / Veh (s)	3.1	2.7	2.8
Vehicles Entered	51	116	167
Vehicles Exited	49	115	164
Hourly Exit Rate	196	460	656
Input Volume	264	400	664
% of Volume	74	115	99

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #2 5:15

Movement	EBT	WBT	All
Total Delay (hr)	0.1	0.1	0.2
Delay / Veh (s)	3.4	4.4	4.0
Vehicles Entered	67	125	192
Vehicles Exited	64	122	186
Hourly Exit Rate	256	488	744
Input Volume	295	448	743
% of Volume	87	109	100

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #3 5:30

Movement	EBT	WBT	All
Total Delay (hr)	0.1	0.1	0.2
Delay / Veh (s)	2.8	3.8	3.5
Vehicles Entered	69	111	180
Vehicles Exited	72	119	191
Hourly Exit Rate	288	476	764
Input Volume	264	400	664
% of Volume	109	119	115

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #4 5:45

Movement	EBT	WBT	All
Total Delay (hr)	0.1	0.1	0.2
Delay / Veh (s)	3.8	2.9	3.3
Vehicles Entered	80	103	183
Vehicles Exited	80	102	182
Hourly Exit Rate	320	408	728
Input Volume	264	400	664
% of Volume	121	102	110

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Entire Run

Movement	EBT	WBT	All
Total Delay (hr)	0.2	0.4	0.7
Delay / Veh (s)	3.3	3.5	3.4
Vehicles Entered	267	455	722
Vehicles Exited	265	458	723
Hourly Exit Rate	265	458	723
Input Volume	272	412	684
% of Volume	98	111	106

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #1 5:00

Movement	EBL	EBR	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.2
Delay / Veh (s)	6.2	2.1	1.4	4.1	3.4	3.4
Vehicles Entered	6	1	44	106	9	166
Vehicles Exited	6	1	45	100	10	162
Hourly Exit Rate	24	4	180	400	40	648
Input Volume	35	3	228	362	38	669
% of Volume	69	133	79	110	105	97

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #2 5:15

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Delay / Veh (s)	10.9	4.7	3.4	1.6	5.3	6.4	4.5
Vehicles Entered	12	2	1	61	112	10	198
Vehicles Exited	11	2	1	56	116	10	196
Hourly Exit Rate	44	8	4	224	464	40	784
Input Volume	39	3	3	255	406	42	748
% of Volume	113	267	133	88	114	95	105

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #3 5:30

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.2
Delay / Veh (s)	6.3	2.5	3.1	1.3	4.8	7.2	3.9
Vehicles Entered	11	1	2	57	111	8	190
Vehicles Exited	11	1	2	58	106	6	184
Hourly Exit Rate	44	4	8	232	424	24	736
Input Volume	35	3	3	228	362	38	669
% of Volume	126	133	267	102	117	63	110

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #4 5:45

Movement	EBL	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.2
Delay / Veh (s)	8.6	1.6	1.8	3.6	4.3	3.3
Vehicles Entered	10	1	68	88	14	181
Vehicles Exited	10	1	70	89	15	185
Hourly Exit Rate	40	4	280	356	60	740
Input Volume	35	3	228	362	38	669
% of Volume	114	133	123	98	158	111

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Entire Run

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.1	0.0	0.0	0.1	0.5	0.1	0.8
Delay / Veh (s)	8.2	3.5	2.8	1.6	4.5	5.2	3.8
Vehicles Entered	39	4	4	230	417	41	735
Vehicles Exited	38	4	4	229	411	41	727
Hourly Exit Rate	38	4	4	229	411	41	727
Input Volume	36	3	3	235	373	39	689
% of Volume	106	133	133	98	110	105	106

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #1 5:00

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Delay / Veh (s)	6.1	2.6	1.7	3.0	2.3	2.3	2.5
Vehicles Entered	2	1	1	38	97	4	143
Vehicles Exited	2	1	1	42	106	4	156
Hourly Exit Rate	8	4	4	168	424	16	624
Input Volume	5	6	10	226	356	9	612
% of Volume	160	67	40	74	119	178	102

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #2 5:15

Movement	SEL	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.1
Delay / Veh (s)	4.8	11.5	3.1	2.4	1.1	2.7
Vehicles Entered	1	3	69	114	4	191
Vehicles Exited	1	3	61	110	4	179
Hourly Exit Rate	4	12	244	440	16	716
Input Volume	5	11	253	399	10	685
% of Volume	80	109	96	110	160	105

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #3 5:30

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Delay / Veh (s)	13.3	7.0	5.1	2.5	2.4	4.6	2.6
Vehicles Entered	1	1	4	53	105	2	166
Vehicles Exited	1	1	4	58	107	2	173
Hourly Exit Rate	4	4	16	232	428	8	692
Input Volume	5	6	10	226	356	9	612
% of Volume	80	67	160	103	120	89	113

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #4 5:45

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Delay / Veh (s)	3.5	3.8	7.7	2.6	2.1	1.7	2.5
Vehicles Entered	1	2	4	69	86	3	165
Vehicles Exited	1	2	4	68	87	3	165
Hourly Exit Rate	4	8	16	272	348	12	660
Input Volume	5	6	10	226	356	9	612
% of Volume	80	133	160	120	98	133	108

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Entire Run

Movement	SEL	SER	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.2	0.3	0.0	0.5
Delay / Veh (s)	6.7	4.3	7.3	2.8	2.3	2.2	2.6
Vehicles Entered	5	4	12	229	402	13	665
Vehicles Exited	5	4	12	229	410	13	673
Hourly Exit Rate	5	4	12	229	410	13	673
Input Volume	5	6	10	233	367	9	630
% of Volume	100	64	117	98	112	141	107

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #1 5:00

Movement	NBT	SBT	All
Total Delay (hr)	0.0	0.2	0.2
Delay / Veh (s)	0.5	8.6	6.7
Vehicles Entered	32	104	136
Vehicles Exited	29	99	128
Hourly Exit Rate	116	396	512
Input Volume	155	362	517
% of Volume	75	109	99

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #2 5:15

Movement	NBT	SBT	All
Total Delay (hr)	0.0	0.2	0.3
Delay / Veh (s)	0.9	7.6	5.5
Vehicles Entered	54	114	168
Vehicles Exited	57	115	172
Hourly Exit Rate	228	460	688
Input Volume	174	406	580
% of Volume	131	113	119

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #3 5:30

Movement	NBT	SBT	All
Total Delay (hr)	0.0	0.2	0.2
Delay / Veh (s)	0.4	8.2	6.1
Vehicles Entered	37	102	139
Vehicles Exited	38	104	142
Hourly Exit Rate	152	416	568
Input Volume	155	362	517
% of Volume	98	115	110

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #4 5:45

Movement	NBT	SBT	All
Total Delay (hr)	0.0	0.2	0.2
Delay / Veh (s)	0.9	7.7	5.7
Vehicles Entered	40	93	133
Vehicles Exited	39	94	133
Hourly Exit Rate	156	376	532
Input Volume	155	362	517
% of Volume	101	104	103

19: Mid Valley Road & Sweetwater Road Performance by movement Entire Run

Movement	NBT	SBT	All
Total Delay (hr)	0.0	0.9	1.0
Delay / Veh (s)	0.8	8.0	6.0
Vehicles Entered	163	413	576
Vehicles Exited	163	412	575
Hourly Exit Rate	163	412	575
Input Volume	160	373	533
% of Volume	102	110	108

Total Network Performance By Interval

Interval Start	5:00	5:15	5:30	5:45	All
Total Delay (hr)	1.0	1.3	1.1	1.0	4.4
Delay / Veh (s)	21.4	22.3	21.8	19.2	21.2
Vehicles Entered	166	215	179	190	750
Vehicles Exited	163	192	191	193	739
Hourly Exit Rate	652	768	764	772	739
Input Volume	3500	3919	3500	3500	3605
% of Volume	19	20	22	22	21

Intersection: 3: Pony Express Pkwy & Hidden Valley Pkwy, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Pony Express Pkwy & Hidden Valley Pkwy, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Pony Express Pkwy & Hidden Valley Pkwy, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Pony Express Pkwy & Hidden Valley Pkwy, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 3: Pony Express Pkwy & Hidden Valley Pkwy, All Intervals

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: Lone Tree Pkwy & Pony Express Pkwy, Interval #1

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	17
95th Queue (ft)	41
Link Distance (ft)	1346
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lone Tree Pkwy & Pony Express Pkwy, Interval #2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	31
95th Queue (ft)	57
Link Distance (ft)	1346
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lone Tree Pkwy & Pony Express Pkwy, Interval #3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	26
95th Queue (ft)	43
Link Distance (ft)	1346
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lone Tree Pkwy & Pony Express Pkwy, Interval #4

Movement	EB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	29
95th Queue (ft)	32
Link Distance (ft)	1346
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Lone Tree Pkwy & Pony Express Pkwy, All Intervals

Movement	EB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	26
95th Queue (ft)	48
Link Distance (ft)	1346
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: North Red Pine Rd & Pony Express Pkwy, Interval #1

Movement	SE
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	13
95th Queue (ft)	38
Link Distance (ft)	549
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: North Red Pine Rd & Pony Express Pkwy, Interval #2

Movement	SE	NE
Directions Served	LR	L
Maximum Queue (ft)	31	29
Average Queue (ft)	4	4
95th Queue (ft)	22	21
Link Distance (ft)	549	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: North Red Pine Rd & Pony Express Pkwy, Interval #3

Movement	SE	NE
Directions Served	LR	L
Maximum Queue (ft)	30	29
Average Queue (ft)	4	4
95th Queue (ft)	21	21
Link Distance (ft)	549	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: North Red Pine Rd & Pony Express Pkwy, Interval #4

Movement	SE
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	12
95th Queue (ft)	35
Link Distance (ft)	549
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: North Red Pine Rd & Pony Express Pkwy, All Intervals

Movement	SE	NE
Directions Served	LR	L
Maximum Queue (ft)	31	29
Average Queue (ft)	8	2
95th Queue (ft)	30	14
Link Distance (ft)	549	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hidden Valley Pkwy & Sage Road, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: Hidden Valley Pkwy & Sage Road, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: Hidden Valley Pkwy & Sage Road, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: Hidden Valley Pkwy & Sage Road, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 10: Hidden Valley Pkwy & Sage Road, All Intervals

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: North Roundabout Road & Hidden Valley Pkwy, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: North Roundabout Road & Hidden Valley Pkwy, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: North Roundabout Road & Hidden Valley Pkwy, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: North Roundabout Road & Hidden Valley Pkwy, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 12: North Roundabout Road & Hidden Valley Pkwy, All Intervals

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 15: Hidden Valley Pkwy & South Roundabout Road, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 15: Hidden Valley Pkwy & South Roundabout Road, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 15: Hidden Valley Pkwy & South Roundabout Road, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 15: Hidden Valley Pkwy & South Roundabout Road, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 15: Hidden Valley Pkwy & South Roundabout Road, All Intervals

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Mid Valley Road & Sweetwater Road, Interval #1

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Mid Valley Road & Sweetwater Road, Interval #2

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Mid Valley Road & Sweetwater Road, Interval #3

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Mid Valley Road & Sweetwater Road, Interval #4

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Mid Valley Road & Sweetwater Road, All Intervals

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 0

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Eagle Mountain - Hidden Valley TIS
Analysis Period: *Existing (2008) Pus Project*
Time Period: *PM Peak Hour* **Project #:** *UT07-106*

Intersection: Pony Express Pkwy & Hidden Valley Pkwy
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	14	11	77	69.2	*E*
	R	1,004	1,005	100	12.2	*B*
	Subtotal	1,018	1,016	100		
SB						
EB	T	489	481	98	4.3	*A*
	R	25	24	97	3.2	*A*
	Subtotal	514	505	98		
WB	L	1,755	749	43	2934.9	*F*
	T	800	373	47	2460.3	*F*
	Subtotal	2,555	1,122	44		
Total		4,087	2,643	65	1182.0	*F*

Intersection: Lone Tree Pkwy & Pony Express Pkwy
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SW	T	776	369	48	2.2	*A*
	R	39	18	46	2.7	*A*
	Subtotal	815	387	47		
NE	L	3	1	33	5.7	*A*
	T	477	469	98	1.7	*A*
	Subtotal	480	470	98		
EB	L	36	36	100	11.1	*B*
	R	3	4	133	4.2	*A*
	Subtotal	39	40	103		
WB						
Total		1,334	897	67	2.4	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Eagle Mountain - Hidden Valley TIS
Analysis Period: *Existing (2008) Pus Project*
Time Period: *PM Peak Hour* **Project #:** *UT07-106*

Intersection: North Red Pine Rd & Pony Express Pkwy
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SW	L	288	143	50	7.4	A
	T	481	225	47	2.4	A
	R	9	6	65	2.1	A
	Subtotal	778	374	48		
NE	L	10	10	98	6.1	A
	T	317	312	98	5.9	A
	R	153	158	103	4.4	A
	Subtotal	480	480	100		
SE	L	5	3	60	12.7	B
	R	6	6	96	3.2	A
	Subtotal	11	9	82		
NW	L	85	87	102	22.2	C
	R	158	156	99	7.8	A
	Subtotal	243	243	100		
Total		1,514	1,106	73	6.7	A

Intersection: Hidden Valley Pkwy & Sage Road
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
SW	L	5	4	80	21.0	C
	T	12	13	106	23.7	C
	R	76	80	105	8.0	A
	Subtotal	93	97	104		
NE	L	195	195	100	31.9	C
	T	22	20	92	25.5	C
	R	14	17	119	6.0	A
	Subtotal	231	232	100		
SE	L	139	57	41	16.0	B
	T	1,295	562	43	7.1	A
	R	346	152	44	4.2	A
	Subtotal	1,780	771	43		
NW	L	25	26	105	15.3	B
	T	688	689	100	9.5	A
	R	9	10	108	6.3	A
	Subtotal	722	725	100		
Total		2,826	1,825	65	11.2	B

HALES ENGINEERING
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SimTraffic LOS Report

Project: Eagle Mountain - Hidden Valley TIS
Analysis Period: *Existing (2008) Pus Project*
Time Period: *PM Peak Hour* **Project #:** *UT07-106*

Intersection: North Roundabout Road & Hidden Valley Pkwy
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	15	15	98	5.6	A
	T	477	498	104	6.0	A
	R	24	25	105	4.6	A
	Subtotal	516	538	104		
SB	L	97	46	48	6.2	A
	T	967	425	44	4.7	A
	R	131	54	41	6.0	A
	Subtotal	1,195	525	44		
EB	L	67	64	96	3.7	A
	R	8	9	109	3.5	A
	Subtotal	75	73	97		
WB	L	14	14	98	4.1	A
	R	57	54	95	4.0	A
	Subtotal	71	68	96		
Total		1,856	1,204	65	5.3	A

Intersection: Hidden Valley Pkwy & South Roundabout Road
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	L	62	57	92	4.9	A
	R	249	264	106	4.4	A
	Subtotal	311	321	103		
SB						
EB	T	266	278	105	12.9	B
	R	101	98	97	11.8	B
	Subtotal	367	376	102		
WB	L	404	175	43	3.7	A
	T	262	117	45	4.4	A
	Subtotal	666	292	44		
Total		1,344	989	74	7.4	A

HALES ENGINEERING
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SimTraffic LOS Report

Project: Eagle Mountain - Hidden Valley TIS
Analysis Period: *Existing (2008) Pus Project*
Time Period: *PM Peak Hour* **Project #:** *UT07-106*

Intersection: Mid Valley Road & Sweetwater Road
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	347	343	99	6.1	*A*
	R	349	355	102	4.2	*A*
	Subtotal	696	698	100		
SB	T	308	167	54	5.9	*A*
	Subtotal	308	167	54		
EB						
WB	L	202	103	51	27.3	*D*
	T	120	68	56	3.0	*A*
	Subtotal	322	171	53		
Total		1,326	1,036	78	7.3	*A*

Intersection: Lake Mountain Road & Sweetwater Road
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
NB	T	347	348	100	7.6	*A*
	Subtotal	347	348	100		
SB	L	78	42	54	4.7	*A*
	T	494	277	56	2.0	*A*
	Subtotal	572	319	56		
EB						
WB	R	46	41	89	4.2	*A*
	Subtotal	46	41	89		
Total		966	708	73	5.0	*A*

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #1 5:00

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.1	0.0	53.3	17.9	0.1	0.6	72.1
Delay / Veh (s)	4.6	1.0	950.0	765.6	103.4	10.0	412.5
Vehicles Entered	104	5	208	81	6	229	633
Vehicles Exited	105	6	197	87	5	226	626
Hourly Exit Rate	420	24	788	348	20	904	2504
Input Volume	475	24	1704	777	14	975	3969
% of Volume	88	100	46	45	143	93	63

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #2 5:15

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.2	0.0	115.4	49.2	0.1	1.4	166.2
Delay / Veh (s)	4.7	2.5	2533.1	1883.0	64.7	17.6	859.7
Vehicles Entered	144	8	160	92	2	284	690
Vehicles Exited	138	8	168	96	3	288	701
Hourly Exit Rate	552	32	672	384	12	1152	2804
Input Volume	531	27	1908	870	15	1091	4442
% of Volume	104	119	35	44	80	106	63

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #3 5:30

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.2	0.0	183.2	75.2	0.0	1.6	260.2
Delay / Veh (s)	5.2	1.0	3835.4	3222.7	23.7	19.3	1367.5
Vehicles Entered	124	9	175	86	3	290	687
Vehicles Exited	129	9	169	83	3	290	683
Hourly Exit Rate	516	36	676	332	12	1160	2732
Input Volume	475	24	1704	777	14	975	3969
% of Volume	109	150	40	43	86	119	69

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Interval #4 5:45

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.2	0.0	250.0	100.1	0.1	1.0	351.4
Delay / Veh (s)	4.5	4.3	5389.3	5299.6	91.1	13.8	1928.2
Vehicles Entered	145	7	170	66	3	268	659
Vehicles Exited	144	7	165	69	2	266	653
Hourly Exit Rate	576	28	660	276	8	1064	2612
Input Volume	475	24	1704	777	14	975	3969
% of Volume	121	117	39	36	57	109	66

3: Pony Express Pkwy & Hidden Valley Pkwy Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.7	0.0	602.0	242.3	0.3	4.6	849.9
Delay / Veh (s)	4.7	2.2	3069.4	2643.6	74.2	15.5	1147.6
Vehicles Entered	517	29	713	325	14	1071	2669
Vehicles Exited	516	30	699	335	13	1070	2663
Hourly Exit Rate	516	30	699	335	13	1070	2663
Input Volume	489	25	1755	800	14	1004	4087
% of Volume	106	121	40	42	91	107	65

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #1 5:00

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.1	0.1	0.0	0.1
Delay / Veh (s)	7.7	2.4	2.8	1.9	2.7	2.3	2.3
Vehicles Entered	4	1	5	111	86	6	213
Vehicles Exited	4	1	5	111	88	6	215
Hourly Exit Rate	16	4	20	444	352	24	860
Input Volume	35	3	3	463	753	38	1295
% of Volume	46	133	667	96	47	63	66

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #2 5:15

Movement	EBL	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.2
Delay / Veh (s)	9.8	1.6	1.8	2.5	0.7	2.4
Vehicles Entered	14	1	133	95	4	247
Vehicles Exited	11	1	135	87	4	238
Hourly Exit Rate	44	4	540	348	16	952
Input Volume	39	3	519	844	42	1450
% of Volume	113	133	104	41	38	66

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #3 5:30

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.0	0.0	0.1	0.0	0.0	0.2
Delay / Veh (s)	11.7	2.4	2.4	1.8	2.1	3.7	2.5
Vehicles Entered	12	1	1	121	84	3	222
Vehicles Exited	14	1	1	119	82	2	219
Hourly Exit Rate	56	4	4	476	328	8	876
Input Volume	35	3	3	463	753	38	1295
% of Volume	160	133	133	103	44	21	68

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Interval #4 5:45

Movement	EBL	NET	SWT	SWR	All
Total Delay (hr)	0.0	0.1	0.0	0.0	0.2
Delay / Veh (s)	12.3	1.8	2.6	1.6	2.7
Vehicles Entered	12	133	65	5	215
Vehicles Exited	13	138	70	6	227
Hourly Exit Rate	52	552	280	24	908
Input Volume	35	463	753	38	1295
% of Volume	149	119	37	63	70

5: Lone Tree Pkwy & Pony Express Pkwy Performance by movement Entire Run

Movement	EBL	EBR	NEL	NET	SWT	SWR	All
Total Delay (hr)	0.1	0.0	0.0	0.2	0.2	0.0	0.6
Delay / Veh (s)	11.0	2.4	2.5	1.8	2.5	1.9	2.5
Vehicles Entered	42	2	7	498	330	18	897
Vehicles Exited	42	2	7	503	327	18	899
Hourly Exit Rate	42	2	7	503	327	18	899
Input Volume	36	3	3	477	776	39	1334
% of Volume	117	67	233	105	42	46	67

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #1 5:00

Movement	SEL	NWL	NWR	NEL	NET	NER	SWL	SWT	All
Total Delay (hr)	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.0	0.6
Delay / Veh (s)		25.5	9.4	8.2	6.7	5.9	7.7	2.6	7.7
Vehicles Entered	1	25	34	3	84	41	29	60	277
Vehicles Exited	0	17	34	3	82	43	29	60	268
Hourly Exit Rate	0	68	136	12	328	172	116	240	1072
Input Volume	5	83	153	10	308	149	280	467	1470
% of Volume	0	82	89	120	106	115	41	51	73

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #2 5:15

Movement	SEL	SER	NWL	NWR	NEL	NET	NER	SWL	SWT	All
Total Delay (hr)	0.0	0.0	0.2	0.1	0.0	0.1	0.1	0.1	0.0	0.7
Delay / Veh (s)	16.9	3.9	27.7	7.5	8.6	6.1	4.9	8.0	2.6	7.9
Vehicles Entered	2	2	24	50	3	87	44	34	53	299
Vehicles Exited	3	2	32	49	3	82	43	34	49	297
Hourly Exit Rate	12	8	128	196	12	328	172	136	196	1188
Input Volume	5	7	92	172	11	345	166	313	524	1645
% of Volume	240	114	139	114	109	95	104	43	37	72

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #3 5:30

Movement	SEL	SER	NWL	NWR	NEL	NET	NER	SWL	SWT	All
Total Delay (hr)	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.5
Delay / Veh (s)	13.9	4.0	13.5	5.6	3.5	5.8	4.7	10.6	2.4	6.2
Vehicles Entered	2	6	27	40	2	78	43	30	52	280
Vehicles Exited	2	6	25	37	2	83	45	31	55	286
Hourly Exit Rate	8	24	100	148	8	332	180	124	220	1144
Input Volume	5	6	83	153	10	308	149	280	467	1470
% of Volume	160	400	120	97	80	108	121	44	47	78

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Interval #4 5:45

Movement	SER	NWL	NWR	NEL	NET	NER	SWL	SWT	All
Total Delay (hr)	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.4
Delay / Veh (s)	2.3	15.2	6.7	11.4	5.9	4.0	6.9	2.1	5.9
Vehicles Entered	2	17	43	3	88	40	26	42	261
Vehicles Exited	2	19	45	3	88	41	25	42	265
Hourly Exit Rate	8	76	180	12	352	164	100	168	1060
Input Volume	6	83	153	10	308	149	280	467	1470
% of Volume	133	92	118	120	114	110	36	36	72

7: North Red Pine Rd & Pony Express Pkwy Performance by movement Entire Run

Movement	SEL	SER	NWL	NWR	NEL	NET	NER	SWL	SWT	All
Total Delay (hr)	0.0	0.0	0.5	0.3	0.0	0.6	0.2	0.3	0.1	2.2
Delay / Veh (s)	23.7	3.6	20.8	7.2	8.3	6.1	4.9	8.4	2.5	7.0
Vehicles Entered	5	10	93	167	11	337	168	119	207	1117
Vehicles Exited	5	10	93	165	11	335	172	119	206	1116
Hourly Exit Rate	5	10	93	165	11	335	172	119	206	1116
Input Volume	5	6	85	158	10	317	153	288	481	1514
% of Volume	100	160	109	105	107	106	112	41	43	74

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #1 5:00

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Delay (hr)	0.1	0.2	0.0	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Delay / Veh (s)	18.6	6.0	3.5	12.6	8.7	5.5	24.6	31.1	4.7		19.7	4.0
Vehicles Entered	20	143	40	7	166	4	43	3	2	1	5	20
Vehicles Exited	21	145	40	7	159	3	42	3	2	0	4	21
Hourly Exit Rate	84	580	160	28	636	12	168	12	8	0	16	84
Input Volume	135	1257	336	24	668	9	189	21	14	5	12	74
% of Volume	62	46	48	117	95	133	89	57	57	0	133	114

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #1 5:00

Movement	All
Total Delay (hr)	1.2
Delay / Veh (s)	9.4
Vehicles Entered	454
Vehicles Exited	447
Hourly Exit Rate	1788
Input Volume	2744
% of Volume	65

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #2 5:15

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Delay (hr)	0.0	0.3	0.0	0.0	0.6	0.0	0.4	0.1	0.0	0.0	0.0	0.0
Delay / Veh (s)	25.2	8.4	4.4	21.6	11.4	2.7	30.3	25.3	17.5	20.2	21.1	5.8
Vehicles Entered	7	129	40	8	202	3	50	8	9	1	6	19
Vehicles Exited	5	133	37	8	197	3	51	8	9	2	6	19
Hourly Exit Rate	20	532	148	32	788	12	204	32	36	8	24	76
Input Volume	151	1408	376	27	748	10	212	24	15	5	13	83
% of Volume	13	38	39	119	105	120	96	133	240	160	185	92

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #2 5:15

Movement	All
Total Delay (hr)	1.7
Delay / Veh (s)	12.6
Vehicles Entered	482
Vehicles Exited	478
Hourly Exit Rate	1912
Input Volume	3072
% of Volume	62

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #3 5:30

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Delay (hr)	0.1	0.3	0.0	0.0	0.7	0.0	0.6	0.1	0.0	0.0	0.0	0.0
Delay / Veh (s)	14.9	7.0	4.9	18.3	13.3	5.2	30.7	37.6	8.5	40.8	52.8	6.7
Vehicles Entered	15	133	30	6	182	4	68	6	6	1	0	16
Vehicles Exited	16	128	32	6	189	5	69	6	6	1	1	16
Hourly Exit Rate	64	512	128	24	756	20	276	24	24	4	4	64
Input Volume	135	1257	336	24	668	9	189	21	14	5	12	74
% of Volume	47	41	38	100	113	222	146	114	171	80	33	86

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #3 5:30

Movement	All
Total Delay (hr)	1.8
Delay / Veh (s)	13.8
Vehicles Entered	467
Vehicles Exited	475
Hourly Exit Rate	1900
Input Volume	2744
% of Volume	69

10: Hidden Valley Pkwy & Sage Road Performance by movement Interval #4 5:45

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWT	SWR	All
Total Delay (hr)	0.1	0.4	0.1	0.0	0.6	0.0	0.5	0.0	0.0	0.0	0.0	1.7
Delay / Veh (s)	24.1	11.0	4.9	14.1	11.7	6.9	31.9	31.3	4.4	17.2	4.9	13.8
Vehicles Entered	14	122	36	4	180	1	60	3	2	4	19	445
Vehicles Exited	13	128	37	4	186	1	56	3	2	4	17	451
Hourly Exit Rate	52	512	148	16	744	4	224	12	8	16	68	1804
Input Volume	135	1257	336	24	668	9	189	21	14	12	74	2744
% of Volume	39	41	44	67	111	44	119	57	57	133	92	66

10: Hidden Valley Pkwy & Sage Road Performance by movement Entire Run

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Total Delay (hr)	0.3	1.2	0.2	0.1	2.3	0.0	1.8	0.2	0.1	0.0	0.1	0.1
Delay / Veh (s)	19.9	8.0	4.4	17.1	11.3	4.8	29.9	30.7	11.9	27.1	21.8	5.3
Vehicles Entered	56	527	146	25	730	12	221	20	19	3	15	74
Vehicles Exited	55	534	146	25	731	12	218	20	19	3	15	73
Hourly Exit Rate	55	534	146	25	731	12	218	20	19	3	15	73
Input Volume	139	1295	346	25	688	9	195	22	14	5	12	76
% of Volume	40	41	42	101	106	130	112	92	133	60	122	96

10: Hidden Valley Pkwy & Sage Road Performance by movement Entire Run

Movement	All
Total Delay (hr)	6.4
Delay / Veh (s)	12.4
Vehicles Entered	1848
Vehicles Exited	1851
Hourly Exit Rate	1851
Input Volume	2826
% of Volume	65

12: North Roundabout Road & Hidden Valley Pkwy Performance by movement Interval #1 5:00

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.4
Delay / Veh (s)	3.4	2.2	4.9	3.4	4.6	4.9	4.4	6.8	5.0	4.5	4.8
Vehicles Entered	20	1	4	15	5	116	5	10	106	16	298
Vehicles Exited	20	1	4	15	4	114	5	8	106	16	293
Hourly Exit Rate	80	4	16	60	16	456	20	32	424	64	1172
Input Volume	65	8	14	55	15	463	23	94	939	127	1803
% of Volume	123	50	114	109	107	98	87	34	45	50	65

12: North Roundabout Road & Hidden Valley Pkwy Performance by movement Interval #2 5:15

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.5
Delay / Veh (s)	4.0	2.5	3.8	2.6	5.8	6.7	5.6	5.9	4.7	6.5	5.6
Vehicles Entered	17	5	4	12	5	154	7	9	110	16	339
Vehicles Exited	18	5	4	10	6	151	7	10	108	15	334
Hourly Exit Rate	72	20	16	40	24	604	28	40	432	60	1336
Input Volume	73	9	15	62	16	518	26	105	1050	142	2016
% of Volume	99	222	107	65	150	117	108	38	41	42	66

12: North Roundabout Road & Hidden Valley Pkwy Performance by movement Interval #3 5:30

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.6
Delay / Veh (s)	4.6	4.2	4.2	6.0	5.7	7.8	7.9	3.9	5.7	6.2	6.4
Vehicles Entered	23	2	7	14	3	131	4	11	100	13	308
Vehicles Exited	22	2	7	16	3	130	4	11	101	14	310
Hourly Exit Rate	88	8	28	64	12	520	16	44	404	56	1240
Input Volume	65	8	14	55	15	463	23	94	939	127	1803
% of Volume	135	100	200	116	80	112	70	47	43	44	69

12: North Roundabout Road & Hidden Valley Pkwy Performance by movement Interval #4 5:45

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.4
Delay / Veh (s)	3.5	2.3	3.5	4.1	4.4	6.4	4.5	6.5	4.5	5.1	5.3
Vehicles Entered	16	2	2	15	5	100	7	10	90	12	259
Vehicles Exited	17	2	2	15	5	108	6	11	84	11	261
Hourly Exit Rate	68	8	8	60	20	432	24	44	336	44	1044
Input Volume	65	8	14	55	15	463	23	94	939	127	1803
% of Volume	105	100	57	109	133	93	104	47	36	35	58

12: North Roundabout Road & Hidden Valley Pkwy Performance by movement Entire Run

Movement	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Total Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.9	0.0	0.1	0.6	0.1	1.8
Delay / Veh (s)	3.9	2.8	4.2	4.1	5.1	6.5	5.4	5.9	5.0	5.6	5.5
Vehicles Entered	76	10	17	56	18	501	23	40	406	57	1204
Vehicles Exited	77	10	17	56	18	503	22	40	399	56	1198
Hourly Exit Rate	77	10	17	56	18	503	22	40	399	56	1198
Input Volume	67	8	14	57	15	477	24	97	967	131	1856
% of Volume	115	121	119	99	118	106	93	41	41	43	65

15: Hidden Valley Pkwy & South Roundabout Road Performance by movement Interval #1 5:00

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.4	0.1	0.0	0.0	0.0	0.0	0.6
Delay / Veh (s)	17.1	12.9	3.6	4.3	4.6	3.4	8.8
Vehicles Entered	77	26	52	29	16	52	252
Vehicles Exited	73	26	49	26	15	52	241
Hourly Exit Rate	292	104	196	104	60	208	964
Input Volume	258	98	392	255	60	242	1305
% of Volume	113	106	50	41	100	86	74

15: Hidden Valley Pkwy & South Roundabout Road Performance by movement Interval #2 5:15

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.3	0.1	0.0	0.0	0.0	0.1	0.6
Delay / Veh (s)	12.8	13.6	3.9	4.6	3.3	4.5	7.9
Vehicles Entered	92	24	47	32	9	72	276
Vehicles Exited	93	22	45	34	10	73	277
Hourly Exit Rate	372	88	180	136	40	292	1108
Input Volume	289	110	439	285	67	271	1461
% of Volume	129	80	41	48	60	108	76

15: Hidden Valley Pkwy & South Roundabout Road Performance by movement Interval #3 5:30

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.3	0.1	0.1	0.1	0.0	0.1	0.6
Delay / Veh (s)	12.0	13.1	4.0	4.4	3.8	4.2	7.7
Vehicles Entered	91	25	45	43	15	46	265
Vehicles Exited	91	26	47	43	16	46	269
Hourly Exit Rate	364	104	188	172	64	184	1076
Input Volume	258	98	392	255	60	242	1305
% of Volume	141	106	48	67	107	76	82

15: Hidden Valley Pkwy & South Roundabout Road Performance by movement Interval #4 5:45

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	0.2	0.1	0.0	0.0	0.0	0.1	0.4
Delay / Veh (s)	10.9	9.8	3.4	4.0	3.8	3.7	6.4
Vehicles Entered	66	25	41	24	17	50	223
Vehicles Exited	63	24	42	24	16	49	218
Hourly Exit Rate	252	96	168	96	64	196	872
Input Volume	258	98	392	255	60	242	1305
% of Volume	98	98	43	38	107	81	67

15: Hidden Valley Pkwy & South Roundabout Road Performance by movement Entire Run

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Total Delay (hr)	1.2	0.3	0.2	0.2	0.1	0.2	2.2
Delay / Veh (s)	13.2	12.4	3.7	4.4	3.9	4.0	7.7
Vehicles Entered	326	100	185	128	57	220	1016
Vehicles Exited	320	98	183	127	57	220	1005
Hourly Exit Rate	320	98	183	127	57	220	1005
Input Volume	266	101	404	262	62	249	1344
% of Volume	120	97	45	48	92	88	75

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #1 5:00

Movement	WBL	WBT	NBT	NBR	SBT	All
Total Delay (hr)	0.1	0.0	0.2	0.2	0.1	0.6
Delay / Veh (s)	24.4	3.9	9.3	6.1	5.0	8.1
Vehicles Entered	22	18	98	98	47	283
Vehicles Exited	17	15	97	102	43	274
Hourly Exit Rate	68	60	388	408	172	1096
Input Volume	196	117	337	339	299	1288
% of Volume	35	51	115	120	58	85

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #2 5:15

Movement	WBL	WBT	NBT	NBR	SBT	All
Total Delay (hr)	0.2	0.0	0.2	0.1	0.1	0.7
Delay / Veh (s)	26.6	1.8	7.9	5.1	5.0	8.2
Vehicles Entered	29	13	102	108	35	287
Vehicles Exited	31	14	100	103	36	284
Hourly Exit Rate	124	56	400	412	144	1136
Input Volume	220	131	377	379	335	1442
% of Volume	56	43	106	109	43	79

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #3 5:30

Movement	WBL	WBT	NBT	NBR	SBT	All
Total Delay (hr)	0.2	0.0	0.2	0.1	0.1	0.6
Delay / Veh (s)	16.9	4.5	6.4	4.5	8.7	7.1
Vehicles Entered	30	22	88	104	49	293
Vehicles Exited	33	23	88	107	51	302
Hourly Exit Rate	132	92	352	428	204	1208
Input Volume	196	117	337	339	299	1288
% of Volume	67	79	104	126	68	94

19: Mid Valley Road & Sweetwater Road Performance by movement Interval #4 5:45

Movement	WBL	WBT	NBT	NBR	SBT	All
Total Delay (hr)	0.3	0.0	0.2	0.1	0.1	0.6
Delay / Veh (s)	30.6	2.9	5.9	3.9	6.9	8.1
Vehicles Entered	31	15	95	81	39	261
Vehicles Exited	29	15	94	78	37	253
Hourly Exit Rate	116	60	376	312	148	1012
Input Volume	196	117	337	339	299	1288
% of Volume	59	51	112	92	49	79

19: Mid Valley Road & Sweetwater Road Performance by movement Entire Run

Movement	WBL	WBT	NBT	NBR	SBT	All
Total Delay (hr)	0.8	0.1	0.8	0.5	0.3	2.4
Delay / Veh (s)	24.5	3.5	7.4	5.0	6.6	7.9
Vehicles Entered	112	68	383	391	170	1124
Vehicles Exited	110	67	379	390	167	1113
Hourly Exit Rate	110	67	379	390	167	1113
Input Volume	202	120	347	349	308	1326
% of Volume	54	56	109	112	54	84

23: Lake Mountain Road & Sweetwater Road Performance by movement Interval #1 5:00

Movement	WBR	NBT	SBL	SBT	All
Total Delay (hr)	0.0	0.2	0.0	0.1	0.3
Delay / Veh (s)	7.2	9.1	7.3	2.7	6.5
Vehicles Entered	9	97	10	67	183
Vehicles Exited	9	94	13	70	186
Hourly Exit Rate	36	376	52	280	744
Input Volume	45	337	76	480	938
% of Volume	80	112	68	58	79

23: Lake Mountain Road & Sweetwater Road Performance by movement Interval #2 5:15

Movement	WBR	NBT	SBL	SBT	All
Total Delay (hr)	0.0	0.3	0.0	0.0	0.3
Delay / Veh (s)	5.1	9.4	5.0	1.9	6.2
Vehicles Entered	12	100	18	65	195
Vehicles Exited	13	104	15	66	198
Hourly Exit Rate	52	416	60	264	792
Input Volume	50	377	85	537	1049
% of Volume	104	110	71	49	76

23: Lake Mountain Road & Sweetwater Road Performance by movement Interval #3 5:30

Movement	WBR	NBT	SBL	SBT	All
Total Delay (hr)	0.0	0.2	0.0	0.0	0.3
Delay / Veh (s)	2.9	9.7	5.0	2.3	6.1
Vehicles Entered	9	88	13	73	183
Vehicles Exited	9	89	16	75	189
Hourly Exit Rate	36	356	64	300	756
Input Volume	45	337	76	480	938
% of Volume	80	106	84	62	81