GYPSUM RECLAMATION CONCEPT PLAN

PREPARED BY: GYPSUM RESOURCES, LLC

CLARK COUNTY, NEVADA

June 29, 2011

REFRAMED - USING TODAY'S UNIVERSE STORY

For sustainable development and sustainable living
(5 Jan 2013)

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REFRAMING PREFACE

This version of the Gypsum Resources, LLC Concept Reclamation / Development Plan is a "Reframed" version of the Original available on the Gypsum Resources web site. (www. gypsumreclamationstudy.com)

The "reframing" process is simply an attempt to translate the information from the anthropocentric "real world" created by humans into the frame of the Universe Story as we know it today – the story of the "Real World" – the world where the planet Earth has finite resources, the world where the behavior of 7 billion humans is having a detrimental impact on all Life on our planet – the world where many humans are living a consumptive life style that is not sustainable – a life style that is energized by a finite one-time-only ancient source of fuel (fossil energy) that will not be available for our grandchildren and beyond.

The "reframing" process attempts: to step outside the paradigm given to us as children (and then reinforced every day as working adults), to question this inherited worldview, and to locate those aspects of our "real world" that are inconsistent with the Universe's Real World.

Just as the original Gypsum Resource Reclamation / Development Concept Plan required the expertise and input of a team of consultants, a proper "reframing" of the Plan will require the input of a diverse team as well – nevertheless, we offer an initial attempt to introduce a few "Real World" observations - more input is obviously required from other perspectives.

The Original Concept Plan actually was quite comprehensive and addressed most of the key concerns facing "developers" today. The team of consultants who compiled this Plan should be commended for their efforts. We simply try to expand on those topics related to "sustainable development" of a new community and "sustainable living" within the built community.

Based on this initial "reframing" exercise, the good news is that there does not appear to be any "Real World" obstacles that will prevent homo sapiens from living full, productive, joyful, consciousness expanding lives for at least another 500 million years – IF we can re-learn to live in the Real World. As we look around us, we can see 1.9 million species, our cousins as defined by DNA sequencing, that have learned to live sustainably and avoid extinction – so with that many successful examples, surely homo sapiens can do the same.

Yes, this does mean questioning certain aspects of today's human-created 'economic system' that is currently influencing us to make unsustainable choices. Yes, it does mean we have to question specific aspects of our human-made political system that is influencing us to make unsustainable choices. Yes, this does mean we have to update our ethics for human behavior if we wish to continue to live successfully in the Real World.

The Gypsum Resources, LCC Reclamation / Development Concept Plan is a great place to start because it provides a present opportunity to begin to transition to sustainable living in the Real World.

Whether or not the developer can reconcile the differences between a Real World Plan where humans are of mutual benefit to all Life (and everyone profits) and the "economics" of a "real world" Plan (where just the developer profits) has yet to be determined.

Note about Format: The "Reframing" material is provided in red text. An attempt was made to retain all the material in the original Concept Plan as shown in **black text.** Page numbering is of course different because of the added text.

Milt Hetrick
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5 Jan 2013

1.0 INTRODUCTION + STATUS + APPROVAL REQUEST

1.1 INTRODUCTION

The Gypsum Reclamation Study and associated Concept Plan, commissioned by Gypsum Resources, LLC is intended to be a comprehensive analysis and planning effort to ensure the long-term management of this unique and valuable resource. A key component in this Study is a commitment to Public Outreach and Community Participation.

The goal of this consensus planning process, in contrast to the business-as-usual planning process, is to ensure that the vision for the future of the property and the program and design qualities for any reclamation solutions respect the needs and interests of the surrounding communities, the Red Rock Canyon National Conservation Area (RRCNCA), Southern Nevada, and Clark County.

The Gypsum Reclamation Study is an initiative designed to analyze, understand, program, reclaim, restore, and develop the historic gypsum mining land commonly known as "Blue Diamond Hill". Additionally the Reclamation Study and associated Concept Plan seeks to address a wide range of community needs such as open space, conservation, **sustainability**[1], housing, economic development, job creation, and education.

This document, The Concept Plan, is one of the three planning procedures required to implement a Comprehensive Plan Amendment and zoning change, necessary for the reclamation of the property. Each of these steps is described below:

Step 1 – Reclamation / Development Concept Plan
Step 2 – Specific Plan, Public Facilities Needs Assessment (PFNA)
Step 3 – Development Agreement

The Reclamation / Development Concept Plan is the first step in the Major Projects Process as described in Title 30, Chapter 30.08, and section 30.08.030 of the Clark County Code and is intended to describe the general location, existing conditions, and proposed land uses for projects larger than 700 acres.

The Gypsum Reclamation Study and associated Concept Plan is comprised of a primary Study Area totaling approximately 5,830 acres and includes the areas defined by the Exception Area[2], Gypsum Resources Property, and adjacent BLM lands. A secondary Study Area of approximately 3,466 acres has been identified as "the project". The purpose of designating a larger study area than the privately owned land is to ensure a comprehensive and cohesive plan is developed for the area and the relationships between the properties and the anticipated uses are adequately identified and addressed.

1.2 RECLAMATION / DEVELOPMENT CONCEPT PLAN PURPOSE

[1] The "reframing" exercise will focus on this particular feature of the Concept Plan.
[2] The Exception Area requires further explanation not evident at this point.

This Reclamation / Development Concept Plan report and associated maps provide a vision for the property followed by a series of Goals, Objectives, Planning Principles, and Concept Plan overview. This narrative has been prepared in conjunction with an intensive public outreach process that included a variety of workshops, open houses and planning efforts that included a thorough analysis of the existing site's conditions. The associated concepts and plans prepared as part of report ensure a high quality, environmentally responsive place and experience for the residents of Clark County and visitors alike.

The site's proximity to one of the nation's most beautiful and treasured environments provides unique opportunities, challenges, and inherent responsibilities – *celebrate the unique qualities of this place*.

This property's opportunities are unique. The closure of the James Hardie Gypsum Mining operation offers a new beginning in the efforts to reclaim the site. The James Hardie Mining operations spanned approximately 80 years and focused on the extraction of gypsum in open pit and gypsum extraction mining operations. The impacts to the site by the mining and extraction activities, particularly the impacts of open pit mining, have left the property in a denuded state.

This project will reflect Clark County's long-term commitment to envision, establish, and maintain high quality, environmentally responsive communities. This site provides a context to contribute to the larger regional environment rather than simply meeting a specific development need.

The reclamation of the James Hardie mining operations will repair damage that has been done to the landscape, environment, and ecosystems of the property. The initial studies to date have identified several potential principles, goals, and objectives that will guide the more detailed planning process.

The proposed Reuse and Reclamation/ Development Concept Plan is intended to study the viability and appropriateness of a wide variety of land uses, housing types, open space types and functions, mobility options, and learning opportunities.

Gypsum Resources intends to demonstrate that the proposed project request meets or exceeds the goals and purposes of Title 30 and the Clark County Comprehensive Plan.

1.3 STATUS

The Project Area includes approximately 2,464.5 acres owned by Gypsum Resources, LLC. As well as identified surrounding BLM lands totaling approximately 5,830 acres and includes the areas defined by the Exception Area and Gypsum Resources Property. The Property is currently designated as R-U (Rural Open Land) Zone. The existing zoning designation for the Gypsum Resources, LLC lands allow for the development with a density of 1 unit per 2 acres for the entire 2,464.5 acres.

The opportunity exists to develop a comprehensive and cohesive plan that addresses the existing conditions of the site, the context of the site, the unique environmental setting, and the desire to actively engage and work closely with Clark County and the affected stakeholders[3]. The opportunity exists to reclaim and develop a damaged property in a sustainable manner and create a community that promotes sustainable living.

Gypsum Resources is committed to a continued listening and learning process with the various stakeholders (County leaders, civic leaders, governmental agencies, conservation organizations, interested community members, etc.).

1.4 DESIGNATION OF MAJOR PROJECT

[3] "affected stakeholders" traditional include only people. The Universe Story reminds us homo sapiens that we are not alone on this planet. In fact it reminds that we exist only because of a complex interdependent web of life that has evolved to successfully use the energy of the Sun to sustain Life. Just as Copernicus attempted to explain to his contemporaries that the Universe did not revolve around the Earth, there are many people today attempting to explain that Life on planet Earth does not revolve around an anthropocentric world – all Life is important and interdependent and a more useful worldview is eco-centric.

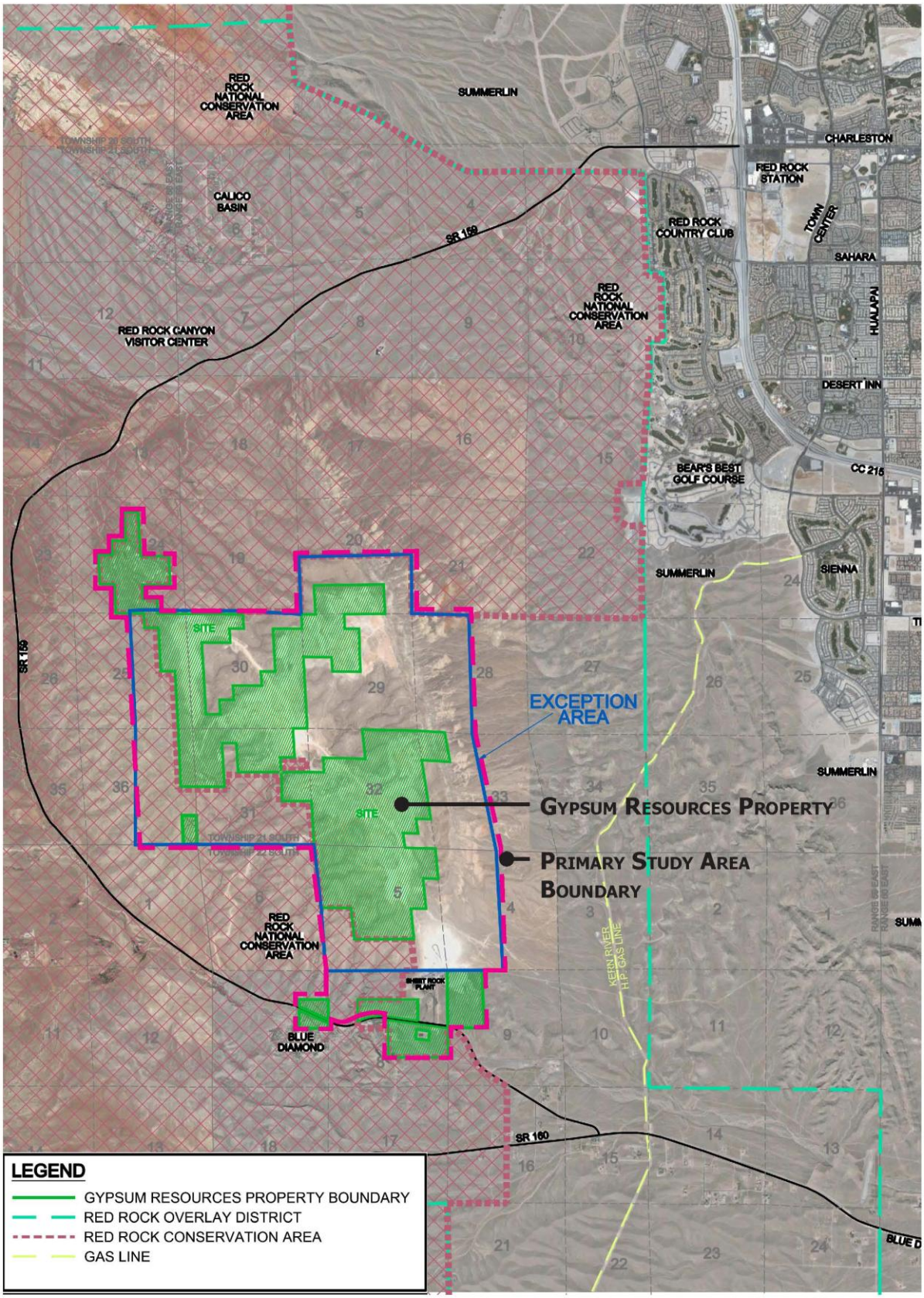
The Major Projects process, as outlined in Title 30.20, is required for projects of 700 acres or more. The intent of the Major Projects Process is to allow for a comprehensive, timely review, predictable consideration, and understanding of the impacts on the existing community, identification of related issues, and the requirement for public resources. The proposed project considers the development of a Concept Plan for the property formally known as the James Hardie Gypsum Mine and now referred to as Blue Diamond Hill.

The first steps in the process include: a Pre-application Conference, Neighborhood Meeting, and the Concept Plan Technical Review.

The subsequent steps following the designation of Major Project status are as follows:

- Public Outreach Process, Public Meetings and Workshops
- Concept Plan preparation, review, and approval
- Public Facilities Needs Assessment (PFNA)
- Specific Plan
- Development Agreement
- Land Use Application Submittal process, Approvals, and Zoning

The applicant intends to demonstrate that the proposed project request meets and exceeds the goals and purposes of Title 30 and the Clark County Comprehensive Plan.



EXCEPTION AREA/STUDY AREA BOUNDARY MAP

GYPSUM RECLAMATION STUDY

NORTH

JUNE 2011

CLARK COUNTY, NEVADA

1.5 COMMUNITY OUTREACH + PUBLIC PARTICIPATION

The Major Projects process, as defined in Title 30 of the Clark County Code, provides the best structure for producing a unified, feasible, comprehensive, cohesive, and long-range master plan for the Gypsum Resources property and adjacent lands. A fundamental component of the Major Project process is the Public Outreach Process, a **process that encourages the involvement and input of the public throughout the planning process**.

Over the past 18 months, Gypsum Resources, LLC and its representatives have worked interactive workshops, open houses, and s participatory process involving a series of purposefully to engage in an interactive and study sessions with a diverse group of business leaders, community stakeholders, and governing agencies. Through this process, the Gypsum Reclamation Study gathered input regarding important issues such as; future economic diversification, real estate development patterns, resource management, and the critical steps necessary to assure a successful community outreach process.

The purpose of the Public Outreach Program, Gypsum Reclamation Study, and subsequent Planning Process is to assist the Gypsum Resources Team in identifying issues and opportunities related to the reclamation and ultimate development of the "Blue Diamond" gypsum mine and surrounding BLM lands.

A vital component of the planning and outreach process is to engage the government agencies in early discussions about the opportunities and constraints associated with the project and its potential development. Several briefing and coordination meetings have taken place with various governmental agencies.

Gypsum Resources has taken on an extensive public outreach process over the past year designed to engage the general public and specific stakeholders in the community. The information that has been gained by this interaction has been incorporated into the development and design of the overall project. Through a series of workshops, community meetings, stakeholder meetings, open houses, and site tours the team has sought to understand the issues, listen to concerns, and frame alternatives.

Beginning in the summer of 2010, Gypsum Resources began the groundwork and planning for the public outreach. Given the controversy surrounding the development of the site, the company realized that an interactive process with the Clark County community was preferable to a more traditional and narrow approach. The team identified multiple members from different community groups that have had an interest in the property in the past and asked them to get involved.

In the fall of 2010, Gypsum Resources began its first Strategic Advisory Group (SAG) meetings. These meetings included members from the Sierra Club, Blue Diamond Residents, Friends of Red Rock, Clark County representatives, the Howard Hughes Corporation, Southwest Action Network (SWAN), Enterprise Town Board, RRCAC and many others. The goal of these meetings was to engage the individual groups and begin a dialogue about what Gypsum Resources was planning and how the community could positively impact that process.

At the same time, Gypsum Resources invited the local media for an in depth tour of the property. All the major television news programs and newspapers were invited for a day on the hill. The programs and articles were an opportunity for the Las Vegas community to see the property and to hear about the public site tours and open houses that were planned for the coming months.

From December of 2010 through May of 2011, Gypsum Resources hosted a total of 8 SAG meetings, brainstorming, researching and presenting their plans to the different groups. At the same time, two Public Open Houses were held where additional feedback from the Las Vegas community was collected and incorporated into the process. At the same time, Gypsum Resources began public on-site tours. These tours,

which took place each week, totaled 44 tours and included several hundred people. The tours were an opportunity for the community to see the property and to experience firsthand the areas that have been impacted by the mining operations.
An informational public website was also created to give the community a better understanding of the history and the location. Photos, a video site tour, maps and biographical information are all available at www.gypsumreclamationstudy.com. (This web site provides useful information, including a link to download the original Conceptual Plan)

1.6 APPROACH

One of the many goals associated with the Gypsum Reclamation Study is to work in a public-private partnership to protect the precious resource that is the Red Rock Conservation Area and provide for other public needs and benefits such as housing, schools, and economic development.

The team's approach to environmental stewardship is based on best practices and tried and true solutions to **sustainable development**. The approach blends the talents and expertise in planning, design, environmental resource management, engineering, and social science to ensure the solutions are appropriate and reflect the needs of the community.

Gypsum Resources approach to community building can be described as actively developing strategies for integrative, socially inclusive, and environmentally responsive development. This process aims not to merely protect land, but fulfill other responsibilities and meet other objectives as well. We seek to protect, restore, and foster community within the context of a comprehensive and inclusive public outreach process.

PUBLIC OUTREACH PROGRAM

1.7 PLANNING STRATEGIES

To thoroughly understand the opportunities and constraints associated with the property, a team of consultants has been retained to analyze, document, and interpret the site's physical factors. The team has analyzed topography, history, cultural resources, view shed, scenic resources, biology, geology, etc., using the latest Geographic Information System (GIS) technology.

Furthermore, the Gypsum Resources team has implemented a thoughtful, collaborative, and comprehensive planning process that emphasizes public involvement. This process emphasizes the guiding principles of dynamic community planning:

- Work Collaboratively
- Design in a Multi-disciplinary Approach
- Study the Details and the Whole
- Confirm Progress through Measuring Outcomes
- Produce Feasible Plan(s)
- Conduct Multiples Workshops/Open House

1.8 PROJECT SUMMARY

This property offers opportunities that are unique. The closure of the James Hardie Gypsum Mining operation offers a new beginning in the efforts to reclaim the site. The James Hardie mining operations spanned approximately 80 years and focused on the extraction of gypsum in open pit and gypsum extraction mining operations. The impacts of the mining and extraction activities, particularly the impacts of open pit mining, on the site over the last 80years or more has left the property in a denuded state.

This project will reflect Clark County's long-term commitment to envision, establish, and maintain high quality, environmentally responsive communities. This site provides a context for a unique opportunity to contribute to the larger regional environment rather than simply meeting a specific development need.

The reclamation of the James Hardie mining operations will repair damage that has been done to the landscape, environment, and ecosystems of the property. The initial studies to date have identified several potential principles, goals, and objectives that will guide the more detailed planning process.

The land is severely degraded after decades of mining. The mining plan of operations contemplated a reclamation plan that included the development of housing after the mining operations were ceased.

At the same time, because of the creation of additional public spaces, parks, and recreational areas within the proposed development, there will be more opportunities for people to enjoy the splendor of Red Rock Canyon without impacting the Canyon floor, the scenic loop, or the state park.

1.9 APPROVAL REQUEST

The Gypsum Reclamation Concept Plan has been prepared in accordance with the Clark County Major Projects Review Procedure (Clark County Code, Title 30.20) and satisfies those requirements described in the aforementioned code. The Gypsum Reclamation Concept Plan was prepared by Gypsum Resources, LLC and / or successors and assigns, hereinafter referred to as the "Master Developer".

This Concept Plan describes proposed land uses and associated community design features for a Study Area located within an unincorporated area of Clark County historically referred to as "Blue Diamond Hill". Specifically this Concept Plan refers to the secondary Study Area or "Project" totally approximately 3,466.41 acres.
The Study Area includes portions of Sections 4, 5, 7, 8 & 9 of Township 22 South, Range 59 East; portions of Sections 24, 25 and 36 of Township 21 South, Range 58 East; and portions of Sections 20, 28, 29, 30, 31, 32 & 33 of Township 21 South, Range 59 East. The Assessor Parcels Numbers are:

16420000002 16431101004 17505301002 16431101002 16429000001
16431201001 17505501001 16431201002 16429000002 16431201003
17505601001 16432801002 16429000003 16431501001 17505701001
16433002001 16430101001 16431501002 17507601003 16433001001
16430101002 16431601001 17507601005 16420000001 16430101003
16431601002 17508201002 16525000002 16430201001 16431701001
17508601001 16536000002 16430301001 16432201001 17508601002
16431301001 16430301003 16432201002 17508601003 17505301001
16430401001 16432301001 17508701002 17505401000 16430401003
16432501001 17509000002 17508101001 16430401004 16432601001
17509000004 17508501001 16430401005 16432701001 17509000005
17505801002 16430501002 16432701002 17509099002 17508501002
16430601002 16432801001 16430501001 17508501003 16430601003
16433001002 16430601001 17504000002 16430701002 16524000003
16430701001 17504000001 16430701003 16525000003 16430101004
16428000001 16430701004 16525000004 16430201002 17508501001
16430801001 16536000003 16430301002 17508501002 16430801002
16536000004 16430401002 17508501003 16430801003 16536000005
16429000004 16431101001 17505101001 16432101001 16431101003
17505201001 16431501003

2.0 VISION

2.1 VISION STATEMENT

"Create a multi-dimensional community that overcomes the compartmentalized anthropocentric approach of conventional planning and instead focuses on a holistic, sustainable, integrated view of creating great places for all natural & native life as well as newly arrived human life ."

The Gypsum Reclamation Concept Plan is **envisioned as a sustainable community** that gracefully merges the desert landscape/bioregion with the built environment[4]. Central to this vision is a community-wide open-space system[5]. A system that embraces the unique qualities ~~of the area~~ of this desert bioregion, respects and protects the natural diversity of life that has evolved in this area, uses a mutually beneficial blend of natural and human created means of harvesting current sunlight (for food and for human technology), preserves view corridors, creates public access, and reclaims ~~much of~~ the land that has been impacted by the strip and open pit mining activities of the past.

As an alternative to the existing (and historically assumed transitory) anthropocentric practice of developing the property as a rural land subdivision for the benefit of human life only, the Gypsum Reclamation Plan acknowledges the interdependence of all life and the finite nature of Earth's resources. Using sustainable building practices and sustainable building materials, the Plan is designed to fulfill a wide variety of goals and objectives providing 'public benefit and economic development for the bioregion and for the planet.'[6] The plan is designed to responsibly accommodate a modest share of the expected population growth in the region over the next 30-50 years. The plan also advances a compact, mixed-use, mixed-income

[4] Great Vision! This is the focus of our "reframing" exercise. To further describe what a sustainable community looks like – based on fundamental principles derived from the Universe Story.

[5] "Open-Space System" is mentioned numerous times and will require further clarification. "Open-space" is also used as a noun and may be something different from the "open-space system." Not sure yet.

[6] "public benefit and economic development for the region" is a long phrase and requires much more definition because it means different things to different people. It is safe to say that the team of consultants who wrote this document for Gypsum Resources, LLC (Rhodes) had one thing in mind; to assuage the needs of government officials and the general public so the project can move forward; that Jim Rhodes has another thing in mind: first and foremost to proceed quickly but incur the least cost for the most personal gain; and this reviewer has yet another perspective: to add the phrase "benefit….for the planet" in a n effort to move beyond a "developer-centric" worldview to a long term sustainable world view

development program on lands that have been destroyed by the mining operations of the last 70 plus years. Because the Plan "***focuses on a holistic, integrated view of creating great places for all natural & native life as well as newly arrived human life, "*** it will incorporate development guidelines consistent with a new Eco-morality: the Ethics of Sustainable Living and Growing Consciousness.[7] For example see: "**Reinventing Fire: Bold Business Solutions for the New Energy Era**" by Amory Lovins and the Rocky Mountain Institute, 2011.

This open-space system will include both enhanced/improved and natural landscapes that serve the needs[8] of the anticipated population as well as providing recreational facilities for the greater community. The open- space system serves as the primary organizing element of the community. It becomes the backbone and the "heart and soul." All community functions will relate strongly to the open-space, the views, and the mobility the open space allows. At full build-out, the plan will provide public access to open-space and trails that ~~has~~ have been sealed off by the mining operations of the last seven plus decades.

The heart of the community will be the "community core". This zone is envisioned to become[9] the center of recreation, education, research, health and wellness, employment, and services within an area at the geographic center of the property. These uses are purposefully clustered to maximize their interrelationships, maximize the sense of community, reduce reliance on automobile travel, and minimize impacts on environmentally sensitive areas.

Residential developments proposed within the plan are envisioned to include a broad diversity of home types, density ranges, sizes, and pricing levels. However, each will include the common themes of 1) sustainable build and 2) sustainable long term operation of the home/building. Home types are proposed to range from custom single-family home sites with defined building envelopes, to attached garden court villas. Every home will include solar PV systems to harvest current sunlight for the power needs of its residents. This will include harvesting the power to pump the water up the hill for end usage. Homes and home sites are to be grouped in small neighborhoods, organized around a common open-space area. Residential densities and locations will assure a harmonious integration of the built- and natural environments. Clusters of villas are proposed to be located within close proximity to the community core and village centers.

As part of the Planning Process, several circulation and transportation alternatives will be studied and evaluated for feasibility and effectiveness. Traffic Impact Studies will be prepared as necessary throughout the planning process to ensure roadway infrastructure is designed properly to allow for access and minimize negative impacts on existing roadway systems and communities. Residents of the community will be required to utilize electric or hybrid vehicles with regenerative braking systems so that the energy consumed to ascend the 1600 feet to their home on Blue Diamond Hill (energy stored as potential energy) will be recovered and converted into electrical energy when the vehicle descends the hill. Every home will include 220 Volt AC charging stations for electric and plug-in hybrid vehicles – energy will be supplied by the solar PV panels located on their property. Natural gas will not be used in any capacity – not even local shuttles.

> Natural gas is now known to be a worse green house gas (GHG) offender than oil and coal – primarily because of how it is extracted from the Earth – there is so much unrestrained gas leakage as a result of fracking that the claims of being a "clean fuel" are absurd. Natural gas is methane. Methane is a worse GHG than CO_2.

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[7] "The Ethics of Sustainability" was published by Joseph C. Dunstan and Geoffrey M. Swan in 1992. See: "Proceedings of the 7th Conference on Research and Resource Management in Parks and on Public Lands: Partners in Stewardship," November 16-20,1992 Jacksonville, Florida, sponsored by The George Wright Society. The term "Ecomorality: Toward Ethics of Sustainability," was suggested by Ursula Goodenough; Chapter 30 of "A Pivotal Moment: Population, Justice & the Environmental Challenge," edited by Laurie Mazer, 2009.

[8] These needs, of course, include the basics such as energy, water, food, communication, etc. Energy for transportation, household uses, etc. will be from renewable sources, specifically by harvesting sunlight – one of the important assets of the desert bioregion. To not harvest sunlight sustainably is disrespectful to the Real World.

[9] But not a part of the current development project – we assume.

Advertizing natural gas as a "clean fuel" is intentional and immoral propaganda to sell this product so certain people can make a profit. Fracking to produce natural gas is another example of unsustainable extraction of resource from the Earth with no intention of ever paying it back. This natural gas will be burned and forever consumed – no longer available for future generations – and the combustion products are literally dumped into the atmosphere where they alter the global heat balance with our Sun. Sorry, this emperor (natural gas) has no clothes.

By it's physical scale, vision, **sustainable development principles**, and sensitivity to the surrounding communities, the Gypsum Reclamation Plan offers a new model for mining reclamation and community development in the desert southwest.

2.2 GOALS + OBJECTIVES + PLANNING PRINCIPLES

Economic Benefit

Economic Benefit has to be reframed and extended to mean **mutual benefit** – in this case benefit to the "developer" [Gypsum Resources, LLC (Rhodes)] **AND** benefit to the local NV community affected by the "development" – where community includes all living species and natural resources required for those lives **AND** benefit to the planet itself **AND** benefit to future generations who will live on this planet.

Economics is intended to be a human created system that "influences human choices." It seems obvious that such a human-created system would attempt to influence human behavior in a direction of goodness and right relations – in a direction that is sustainable for at least 500 million years[10] – in a direction that allows human and non-human living beings to reach their potential – to evolve in consciousness. Observation and empirical data indicate that current "economics" in America influences human choices to benefit 1% of the human population in the country - not the well being of 99% of Americans. Current (2013) "economics" in America does not consider the other 6.3 billion people on planet Earth. 2013 "economics" in America does not consider the other 1.9 million living species that also inhabit this planet – plant and animal species that make up this interdependent web of Life. To be blunt, the current economic system in America is influencing Americans to trash the planet and contribute to the extinction of thousands of living species annually.

Story of Current Economics (See Appendix W: Economics)
Homo sapiens invented/created the concept of economics.

Homo sapiens have evolved to possess tremendous abilities, capabilities, range of behavior, free will – so broad a range, that if these possible behaviors/actions are not constrained (hopefully voluntarily) it can be detrimental to the general well being of the species as well as to all of life on the planet.

Being an aware, conscious, rationale species, homo sapiens observed that cooperation and some self-constraint will result in individual and collective benefits. So 'social contracts' that define "acceptable or preferred behavior" have been created - ranging from superstitions, taboos, traditions, customs, religions, common laws, to forms of self – government and "economics" – all intended to influence human behavior in a positive life-supporting manner – all intended to incorporate lessons learned from human history.

John Morton in "The Economic Way of Thinking" states:
[Economics].... is a unique way of thinking that offers insights into the seemingly chaotic confusion of human behavior in a world of different values, resources, and cultures.

We could reframe this as:

[10] 500 million years - The time frame the planet is expected to be habitable for live as we know it today – assuming that homo sapiens get their act together and stop changing the climate and stop consuming the natural resources and learn to live sustainably like the other 1.9 million living species that also inhabit planet Earth. The Sun has enough hydrogen fuel to last for several billion years, but it too has a finite life.

[Economics].... is a way (one of many ways) of thinking for the purpose of making choices that offers some stability into the seemingly chaotic confusion of human behavior in a finite world of 10 million interdependent living species, including, one species, homo sapiens, who now number over 7 billion souls with different values, life experiences, and access to earth's common resources. In addition to economics, some humans use ethics, religion, customs, etc. to help make choices.

Unfortunately the Smith/Keynes, et. al. derived economics that served since the 1800s is totally inadequate for the Real World we are aware of today. These obsolete anthropocentric economic principles based on an infinite world premise are currently influencing us to make unsustainable choices in our human behavior.

Note the emphasis on human behavior. According to John Maynard Keynes,

[Economics] .... is a method rather than a doctrine, an apparatus of the mind, a technique [or way] of thinking [intended to help humans]... draw correct conclusions." [1]

[Economics] .... assumes that individuals maximize welfare (wellbeing/interests/happiness) as they conceive it, whether they be selfish, altruistic, loyal, spiteful, or masochistic. Their behavior (i.e choice) is forward looking, based on information they understand and believe, based on their life experiences, based on current fears, influenced by observing others, and it is also assumed to be consistent over time (although we know that human behavior changes as incentives change).[2]

... individuals choose; those individual choices drive society. According to Paul Heyne, "All social phenomena emerge from the choices individuals make in response to expected benefits and costs to themselves."[3] This is obviously a fallacious over-reaching statement because we observe "heroics" as a real social phenomenon that does not conform to this formula. For example, parents/teachers/first responders/soldiers (and even most voters) make choices that are not in response to expected benefits and costs to themselves but rather in response to the wellbeing of future generations, the greater good, and moral principles – choices that are often to the detriment of the individual's own safety and wellbeing.

Economics is really about incentives. Economic theory is based on the idea that changes in incentives influence behavior in predictable ways. Incentives are nothing more than changes in costs and benefits, which in turn influence choices.

According to Steven Landsburg, "Most of economics can be summarized in four words: 'People respond to incentives.' The rest is commentary. [4]

Create new construction job opportunities, emphasize "**green technologies**[11]", and attract land uses that benefit the regional and local economy as well as the planet. The redevelopment of the mining site shall adhere to a fiscal and eco-ethical integrity that ensures that it (any further human activity on the site) is sustainable and benefits the local economy and maintains a strict accounting of any of the resources extracted from the earth to assure they are properly "Borrowed" and "Returned/Recycled" by future human activity to maintain a high level (100% Return/Recycle) of sustainable service.

Create a development plan that generates enough revenue to fund reclamation of the mining impacts, infrastructure improvements and maintenance, public services, and provide public benefit in the form of open space, civic, recreational, educational, and leisure uses.[12]

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[11] This of course includes solar PV, geothermal heat pumps, wind, hydro power, hydrogen based fuels, etc.

[12] Such a development was relatively straight forward in the days before humans realized that their anthropocentric behavior was destroying the planet – when an 1872 mining law was thought to be a good thing (and is still being used to this day – despite our knowledge that this extraction (mine-ing) mentality is suicidal behavior - humans around the world continue to practice this insane behavior. There is much injured land around the planet – and the acreage is increasing daily rather than decreasing.

Redevelopment[13] Stewardship

Reclaim and develop the former mining site in a prudent manner that responds to :

-the principles of sustainable living[14];
- the community's needs;
- local, county, state and federal agencies; and
- sound, fiscally sustainable business practices (using a fatally flawed anthropocentric economic system).

Site Integrity

This site is located within proximity of one of the nation's most beautiful and treasured natural environments.

The planning process and development of the project program, plans, guidelines, and builtscape should respond to this unique setting. The potential is to set the standard for human communities and their relationships with the natural environment for the future. Establish a public outreach and planning process that overcomes the compartmentalized approach of conventional planning and instead focuses on a holistic, integrated approach.

Lifelong Learning

Create a community model that emphasizes lifelong learning and education. Education and the associated elements that support a growing consciousness will be the foundation of the community.

Traffic and Mobility

Create and ~~sus~~maintain a comprehensive sustainable transportation system that minimizes traffic, reliance on automobile, and eliminates burning of ancient hydrocarbons (ancient sunlight: derivatives of coal, petroleum, natural gas, tars sands oil, shale oil) and the associated carbon emissions. Residents will be required (See CC&R) to utilize some form of hybrid vehicle with regenerative braking so that the energy required to ascend the Blue Diamond Hill and stored as potential energy will be recovered as electrical energy on the return trip descending the 1600 feet hill OR contribute to Carbon Dumping Assessment. Create a circulation element that minimizes traffic impacts on adjacent communities. Mobility will include numerous walking and biking paths. Create opportunities for public access and sustainable mobility within and through the site. Charging stations for electric vehicles and plug-in hybrid vehicles will be located conveniently around the new development.

Open Space

Create an open space system that is ~~sympathetic~~ mutually beneficial to the desert environment and non-human native forms of life, provides active and passive recreational facilities, emphasizes public access, functions as the predominant aesthetic and desert ecosystem awareness resource, protects sensitive habitat, and regenerates currently denuded areas. Use and access will be encouraged through location, programs (education, research, active, passive, and preservation), accessibility, and amenities.

Land Use Organization

Land uses should be organized to ensure their compatibility with the surrounding community, minimize negative impacts on adjacent open space resources, promote economic development, and develop a unique living environment that capitalizes on the sites redevelopment potential. The new ecomorality indicates that humans would do well to mimic nature and attempt to cover every square inch of land with a human creation that harvests current sunlight – in the desert, nature is limited to how much of the land it can use for capturing sunlight by the amount of water available sustainably. Humans have created clever devices such as solar photovoltaic cells that can harvest sunlight and generate electrical power without the need for water.

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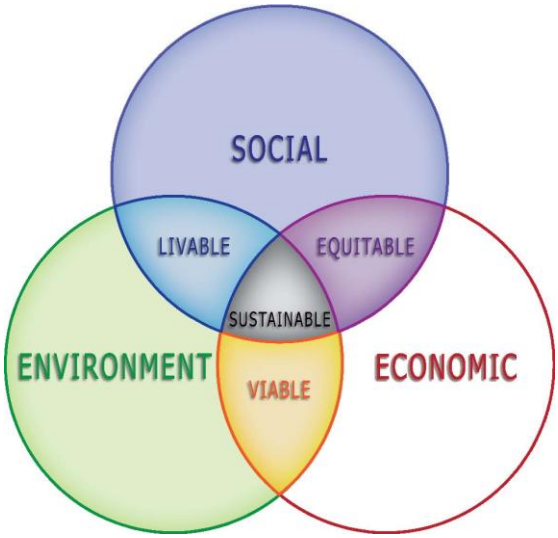
13 "Redevelopment" - an interesting combination of "reclamation" and "development" – is this a bait and switch con that we often associate with the unscrupulous?

14 See Eco-morality: the ethics of sustainable living and growing consciousness http://www.nowforourturn.org/wiki/index.php?title=Main_Page

Community Character

The reclamation / development of the site should reflect the rural and rustic characteristics of the surroundings, design and development standards that emphasize sustainable living, environmental compatibility, and should be attractive, high quality, and timeless. These standards will embrace the scenic beauty and natural resources of the site, and provide residents and visitors with an experience consistent with the surrounding areas.



Redo this graphic to show that today there is no common intersection of these three perspectives that results in Sustainable Living

3.0 EXISTING SITE CONDITIONS

3.1 METHODOLOGY

This section provides an overview and description of the study area's physical characteristics and natural features. The following describes a preliminary assessment and analysis of the existing conditions. Appropriate, more detailed analysis and study will occur in subsequent phases of planning.

Gypsum Resources compiled the analysis with the assistance of a team of planners, engineers, biologists, economists, archeologists, and natural resource specialists who studied the history and physical characteristics of the place.

These studies included, but were not limited to:

- Slope and gradient
- Historical mining operations and impacts
- Solar aspect
- Wind direction, frequency, and speed
- Surface hydrology
- Soils and geology
- Cultural and historical resources
- Viewshed analysis (looking towards the study area from various off-site locations)
- Elevation
- Flora and fauna
- Access and historic roadways
- Surrounding and adjacent land uses and patterns
- Infrastructure (existing and proposed services)

Through the efforts of many consultants and utilization of the Geographic Information System (GIS), the various attributes of the Study Area were mapped and analyzed. By implementing the land suitability methodology, the physiographic attributes of the land were delineated as discrete data layers. These layers were then combined to create an opportunities and constraints composite map. This composite map was then interpreted into four distinct areas of development suitability.[15] This analysis along with the interpretation of a development suitability matrix helped to inform the planning team of the land's carrying capacity for a human community and subsequent economic activity.

[15] Hopefully "development suitability" includes "sustainability"

3.2 LOCATION

Located in the spectacular and scenic region of Southwest Nevada and directly west of Las Vegas, the Gypsum Resources, LLC is unique in its character and geography. The property is approximately 4 to 6 miles (10-15 min. drive) from the existing neighborhoods west and south of Las Vegas.

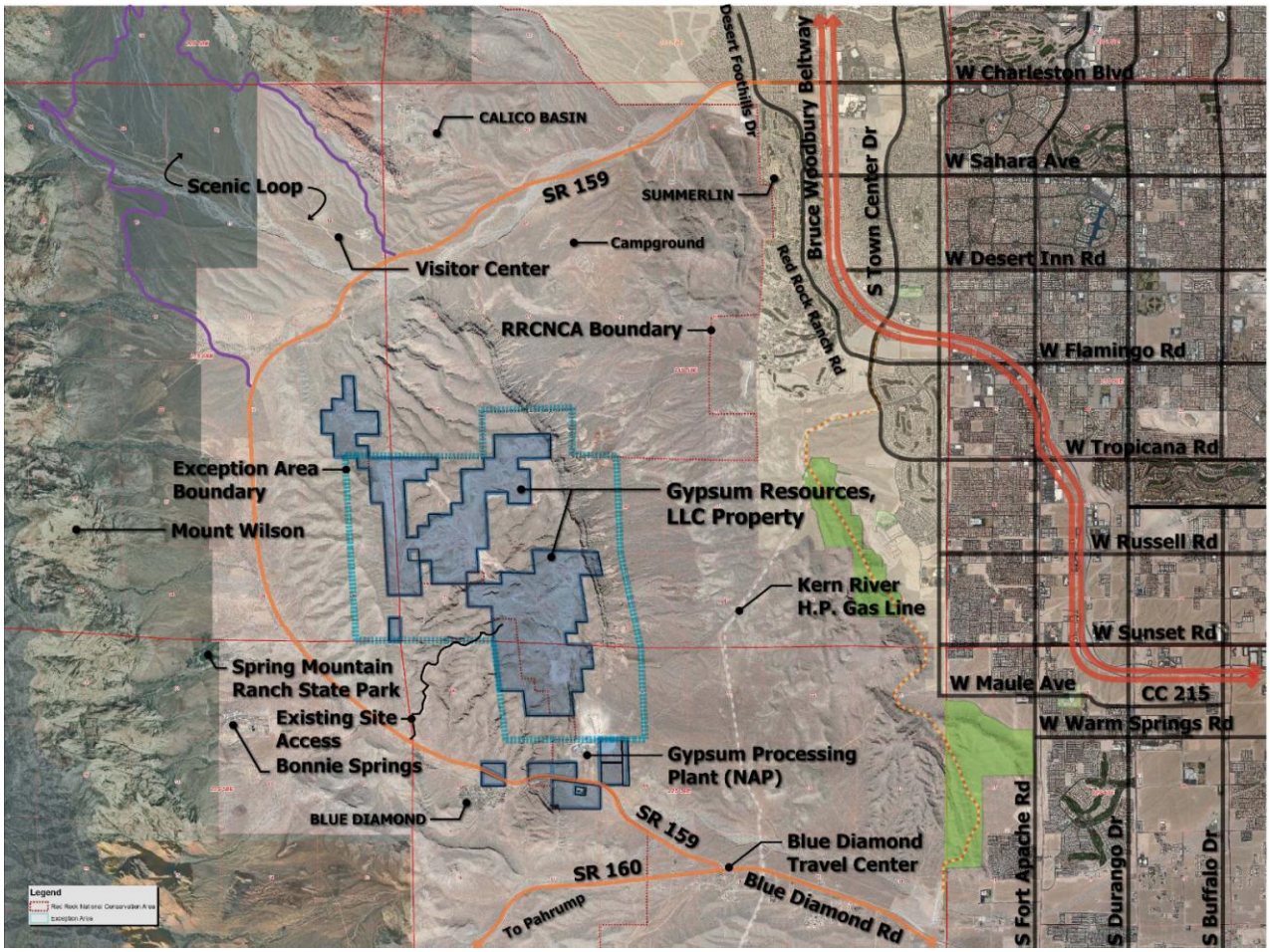
The property is generally located to the west and south of Las Vegas, North of State Route160 (Blue Diamond Road). The property consists of the areas commonly referred to as the James Hardie Gypsum Mine or Blue Diamond Hill.
The property is generally bounded by, but outside of the Red Rock Canyon National Conservation Area to the north, west, and south.

The Red Rock Canyon National Conservation Area was designated as Nevada's first National Conservation Area in 1990 and consists of nearly 200,000-acres. Existing communities proximate to the property include Blue Diamond to the south, Bonnie Springs to the west, Spring Mountain Ranch State Park to the west, Calico Basin and Summerlin South to the north, and Desert Hills to the east.

The property is approximately 15-miles from the Las Vegas Strip.
The entire Property and associated Planning Areas are located within Clark County.
The property is accessible via State Route 159, approximately 1.5 miles west of State Route 160 (Blue Diamond Road), and an existing mining access road approximately 1/2 mile west of the Town of Blue Diamond.

Location Map

JUNE 2011



3.3 HISTORY

Since 1925, Blue Diamond Hill gypsum mine operated as one of the world's largest gypsum mines.[16] The mining operation included approximately 2,464 acres of active mining area, as well as a 471-acre gypsum wallboard plant and distribution facility[17], near SR 159 and approximately 1.5 miles west of SR 160 (Blue Diamond Road). The processing facility became operational in 1941. Prior to the plant's construction, the crude gypsum was freighted by train to Los Angeles for processing. Underground mining[18] predominated from 1925 to 1950, with all mining operations from 1950 onward being open-pit mining.[19] These open pit-mining operations were based primarily on the removal of the hilltops and ridgelines.

The mining plan of operations contemplates[20], in light of the decades of mining on the property, a reclamation plan that includes development and associated improvements after mining activities cease.

As an active mining operation, much of the existing site has been disturbed in support of mining operations and various support facilities occupy the site today, and it is likely that others have occupied the site in the past. The most prominent of the existing features is the plant that lies upon a portion of the alluvial fan in the southeastern segment of the site. The gypsum processing and wallboard manufacturing plant is currently operated by CertainTeed and is expected to be for the foreseeable future.

James Hardie Gypsum purchased the site in 1987 and continued the mining operations through 2003. In late 1999, the Australian-based company offered the mine property for sale in an effort to divest itself of U.S. properties.

In 2001, John Laing Homes entered into an agreement to purchase the property form James Hardie Inc. and prepared plans for a master planned community. Those plans were shelved and John Laing Homes did not move forward with the option to purchase the property.

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[16] Because humans believed in 1924 and apparently still do today, that the planet has an infinite amount of high grade Gypsum available forever, there is justification for "mine-ing" – extracting it from the planet, pretending it is "My" personal property, and pretending that "I" have no responsibility for how it is used or even if it is ever returned for use by future generations. As long as "I" can make a profit, (and as long as the social order allows me to "Mine" resources), then "I" will continue to personally profit as "I" consume forever, this valuable finite resource so that is no longer available for future generations. Recycle this resource? That's not "my" problem. Let the "environmentalists" worry about that. Future generations? That's not "my"problem either – so sayeth the mine owners/operators. And the human social order we created allows them to think in this totally unsustainable manner and receive personal gain (because they create jobs).

[17] From a sustainability perspective (and in this case an 'economic' perspective) it makes sense to process the earth resource into a final product as close to the source as possible – to avoid consuming energy moving the material around the country or planet. Wallboard is a great human creation and with some relatively minor modifications, the CertainTeed plant could probably be made into a sustainable production facility – requires a whole different assessment not appropriate here. It would obviously be modified to also accept recycled wallboard as well as crude gypsum as input.

[18] Heads up for further discussion about what will be done to stabilize these underground tunnels/caverns before constructing buildings, etc. above ground.

[19] The aftermath of this human activity is visually obvious – the tailings/ scree can be seen 10-20 miles away by local hikers.

[20] "Contemplates" is an interesting word. This statement implies mining is still ongoing – probably to avoid having to admit the mine is closed down and the "Proposed Reclamation Plan" if any is supposed to kick in before the owner leaves the site. Of course if the mine owner is supposed to "reclaim" the property before leaving, using his own nickel, then that comes directly out of the mine owners profits – that profit of course have been spent by the owner of his personal lifestyle. We the People never require any of the mines ongoing profits to be placed in an escrow account for repairing the earth after the mine shuts down. If a "development" scheme that produces more revenue for the mine owner, some of which might be actually put into "reclamation," cannot be worked out, then the owner will simply walk. Gypsum Resources, Limited Liability for the owner Company will file for bankruptcy. Sorry about that investors in the Blue Diamond Hill development project. I'm sure based on past experience that no state or county officials has any financial interest to speak of (or stock or …) in this "development" project.

Gypsum Resources, LLC purchased the property in 2002 and continues to manage the resource known as Blue Diamond Hill.

In 2003, both the State of Nevada and Clark County adopted laws preventing any landowner from applying for a zone change that increased density or proposed any uses other than very low density residential within the approximately 46,000-acre Red Rock Overlay District. These laws, or ordinances, also placed severe restrictions on any development proposals in the overlay.

Gypsum Resources, LLC filed lawsuits against both the State of Nevada and Clark County alleging these laws violated the constitutional right to equal protection under the law.

In November 2009, the Federal Court struck down the State Law (SB 358) as unconstitutional. The State is appealing the ruling.

To avoid continued litigation and the potential for the County Ordinance to be voided, Gypsum Resources and Clark County entered into settlement negotiations in 2009-2010.

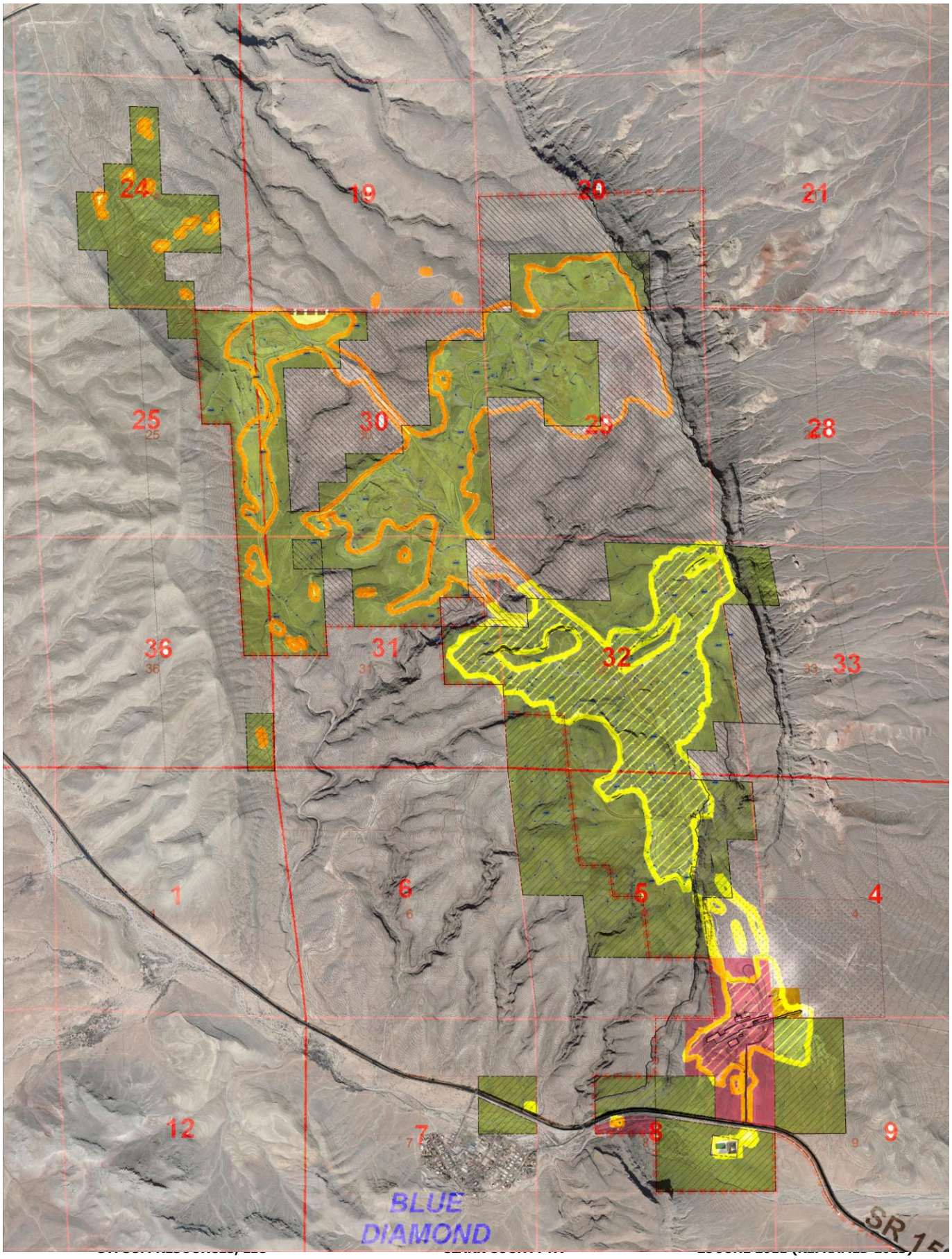
Both parties seeking to remedy the situation and ensure that the Red Rock Overlay District remains in place, agreed to a settlement that designated an Exception Area of approximately 5,116 acres within the Overlay District.

This Exception Area would allow the Gypsum Resources properties and associated adjacent lands to be comprehensively planned and considered in accordance with the purpose of the Clark County Comprehensive Plan per Chapter 30.12 (The Comprehensive Plan and Community Districts).

This settlement agreement would also permit the property to be designated as a “Major Project” with the purpose to provide standards and procedures for the acceptance, processing, hearing, and final action on applications for lands designated as future development.

The settlement agreement was brought before the Clark County Commission and approved on April 21, 2010.

Mining Impact Analysis Map



3.4 PROPERTY DESCRIPTION + SITE CHARACTERISTICS

The Gypsum Resources LLC property, approximately 2,464 acres, consists primarily ofsignificantly impacted areas as a by-product of the 80-year gypsum mining operations. Predominately due to the open pit mining operations over the last 40+ years, the site is characterized by large, deeply cut areas and large fill slopes (tailings). The site is accessible by numerous haul roads and dirt roads crisscrossing the entire property. Areas adjacent to the mining impact areas are comprised of gently sloping desert plains, rolling hills, and portions of various drainage courses.

Elevation within the property holdings reach approximately 4,950 feet above sea level at the highest point, descending to 3,640 feet at the lowest point on the west boundary and 3,300 feet at the lowest point along State Route 159.

Sustainable Living Example: Energy Required to Live on 1650 ft Hill

Living on a "Hill" does have some unique energy requirements not normally of importance for a community built on the flat.

To reach your home at the top of Blue Diamond Hill from Route 159, requires an elevation change of up to 1,650 feet. Using an energy perspective, we must work against the force of gravity to carry anything up the hill. The work required to carry 1 pound vertically up the hill is expressed as 1650 ft lbs (or 2.12 BTU or 0.62 Watt hour.)

Assume we drive a car up the hill. If the car and it's driver weighs 4000 lbs, that's equivalent to 6,600,000 ft lbs or 2486 Wh or 8481 BTU. Assume the access road to the top is built with the proposed 6% grade. To go up 6 ft vertically, you must travel 100 ft horizontally. (The actual distance travel is the hypotenuse of the right triangle but for a 6% grade the difference is less than 1 % different). To drive 1650 ft vertically up the hill means you drive about 5.2 miles to get to the top with a 6% grade. At 20 miles / hour this would take about 15 minutes (.26 hr). So the power consumed would be at a rate of 10,000 watts as you are climbing until you reach the top. A gallon of regular gas is about 125,000 BTU. Assume your internal combustion engine driven car has a typical efficiency of converting the energy in gasoline to energy available to move the car that is around 30%[21], you would need 28,280 BTU (0.22 gal) just for the vertical climb (i.e. to raise 4000 pounds up 1650 feet) plus whatever gas mileage you normally consume on the straight and level (say 30 mpg) or an additional 0.17 gal or 21,667 BTU. For a total of about 0.4 gallons of gasoline or 50,000 BTU = 14.6 kWh per trip up the hill.

When you descend the hill that potential energy must be "dissipated" – generally you will ride the brakes and convert that energy into friction / heat / thermal energy that is basically of no purpose – is not capable of performing any useful work – is wasted. However with a hybrid vehicle, the braking action is performed by running an electrical generator to convert that potential energy into electrical energy that will be stored in an on-board battery – so it is not wasted. This reduces the energy required to drive up the "Hill" by probably 50% at least.

Sustainable living includes NO burning of ancient hydrocarbons and smart use of energy (such as regenerative braking systems rather than heat producing brakes that simply create waste heat.) This example helps explain why the "standard" for all residents will be electric or hybrid vehicles with regenerative brakes.

Note: Every pound of food or water or materials for building this development that is carried (or piped) up the hill also requires energy to be exerted against the Earth's gravitational force.

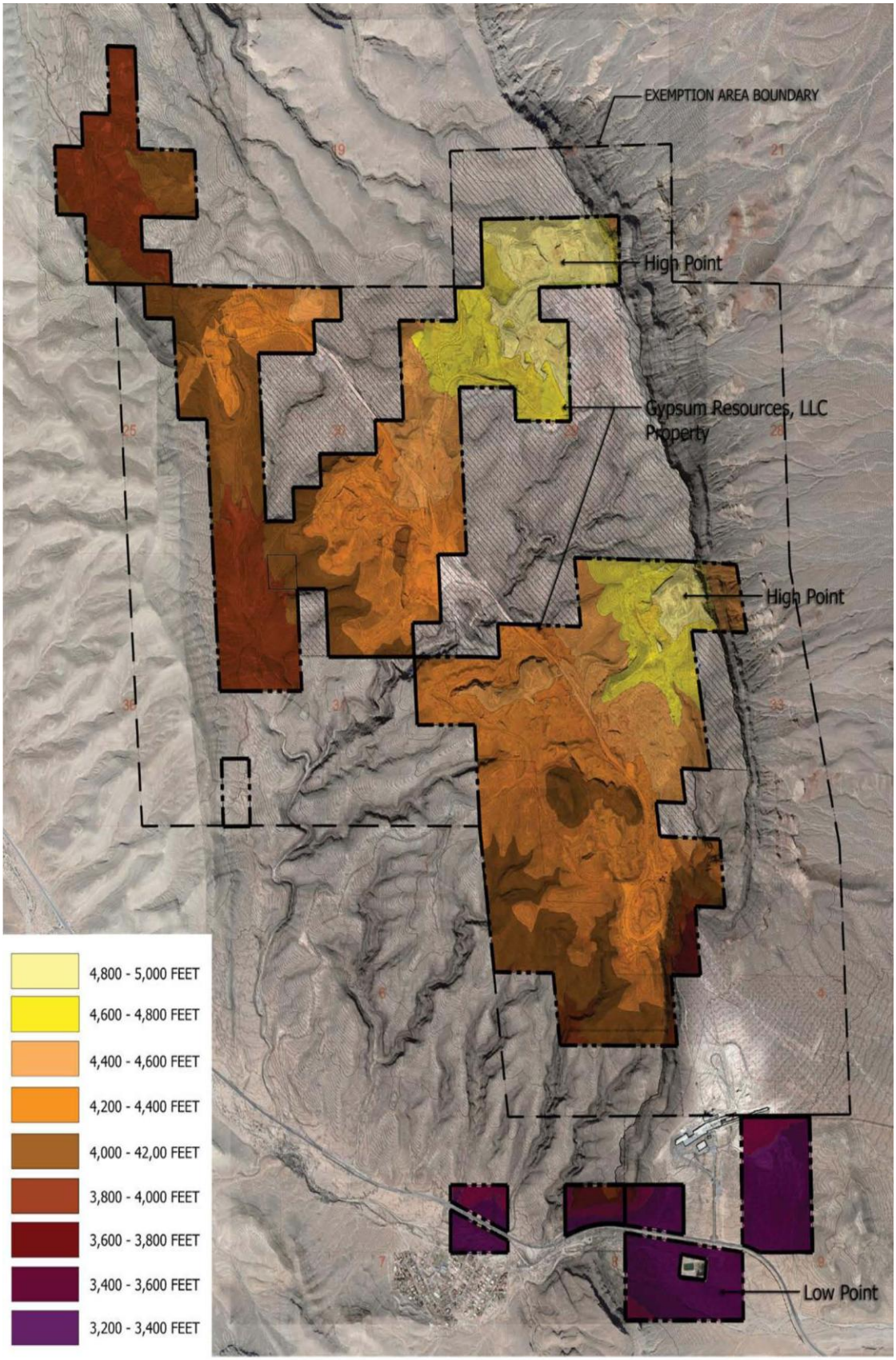
In general, the site is dominated by a westward dipping ridge located between the Spring Mountains and Las Vegas Valley. The eastern most extent of the ridge maintains a near vertical cliff, which descends to an alluvial fan.

[21] 25-30% is a typical range of efficiency for an internal combustion gasoline engine http://en.wikipedia.org/wiki/Engine_efficiency

Natural conditions of the west sloping ridge generally consist of a series of ridges and incised arroyos that flow in a westward direction. All of these features have been "cut-off" by the mining impacts to the property.

Natural vegetation consists of plants that are native to southern Nevada. The property is characterized by vegetation of Creosote Bush Community, low vegetation with little or no tree cover. The dominant plant species include creosote; bursage; Mohave yucca; ratany; Morman tea; cholla; beaver-tail; cotton-top; and hedgehog cactus.

Generally, the majority of the site has been severely impacted by the historic mining operations utilized in extracting gypsum and other resources.



ELEVATION ANALYSIS MAP

3.5 Slope

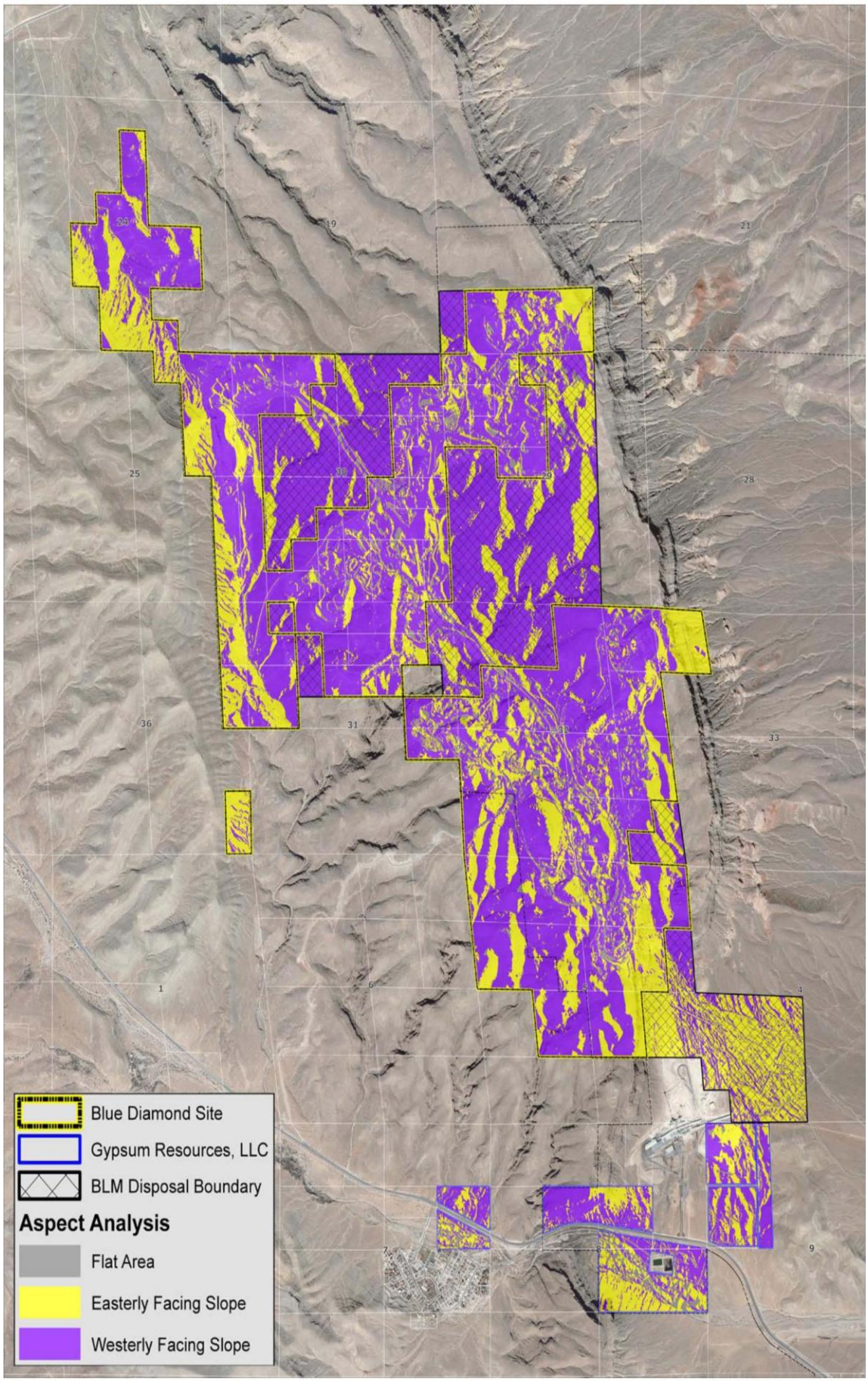
The areas of the property located in the geographic center are contained within a well-defined "bowl" that is framed by the defining ridge that forms the eastern boundary, the intervening ridge located between the property and SR 159, and various ridgelines located along the southern and northern edges of the study area.

Generally speaking, the property slopes up from the lower elevations along the western boundaries to the eastern ridgeline at an approximate average slope of 6-10%.

The interior areas of the property, those areas most impacted by the mining operations, are characterized as heavily graded (generally flat) with large cut and fill slopes making up the gradient. Graded, modified, or generally flat areas with a slope gradient of less than 12% account for approximately 1,074 acres or approximately 31% of the total Study Area (Project) acreage of 3,466.1 acres. These internal areas, located in the geographic center of the project, are the most impacted by the historic mining activities and have been graded almost completely flat.

The edges of the property, areas left primarily undisturbed, are comprised of a variety of slope gradients ranging from moderately to very steep. These areas are characterized as sloping ridges, deeply incised ravines, and gently sloping mesas.

Given the relatively consistent slope conditions overall, the property is conducive to a wide range of land uses, densities, and intensities. Additionally, the existing condition of predominately westerly facing slopes supports passive solar heating and offers dramatic views to the mountain ranges to the west.



ASPECT ANALYSIS MAP

3.6 SOIL + GEOLOGY

Site overview

The following geotechnical summary is preliminary in nature, based upon a series of historical studies and analysis of the property and associated mining operations. In subsequent phases of planning, design, and construction, additional geotechnical evaluation will be performed on the site to provided preliminary remedial recommendations for planning purposes; and then, once the grading plan is more refined, a geotechnical evaluation will need to be performed to provide specific remedial recommendations for earthwork construction.

Soil and bedrock materials can vary in character between excavations and natural outcrops or conditions exposed during mass grading. Site conditions may vary due to seasonal changes or other factors.

Blue Diamond Hill has been an operational mine since 1925. Several entities have controlled and operated the property over time. Initially, mining was conducted using underground room and pillar methods to extract ore containing concentrations of gypsum. In approximately 1950, mining operations changed to an open pit method of ore extraction. Significant amounts of the gypsum resource still remain on the property.

In general the bedrock conditions of the site consist of interbedded layers of limestone, dolomite, shale (claystone) and gypsum. Basically there were six beds of gypsum targeted for exploitation. The surface of the native (undisturbed) bedrock appears to be covered with only a thin soil layer.

Alluvium is generally the soil that was deposited by water. Colluvium is generally loose topsoil developed due to weathering and transported by gravity down slopes. Talus are coarse materials deposited due to rockfall at a cliff base and can form a slope at the base of the cliff. Colluvium and Talus often outer fingers with alluvium. Onsite all of these materials occur but for simplicity we will refer to them generically as alluvium.

It should be noted that besides the alluvium that occurs east of the cliff and the onsite fills, there is not much natural soil onsite to be used as fill.

Mining Activities and Their Affect on Development

Based on previous reports, approximately 7.58 acres of the estimated 74 acres of known underground workings are mapped. The balance of those acres will need to be mapped, but the workings will need to be made accessible, as many have suffered collapse. In the referenced report dated October 10, 2001 (The Tullar Report) the extent of underground workings RO-4, RO-9 & RO-10 have what appears to be well defined maps of the underground workings, including relative size and locations of pillars, so these working would seem to just need verification. The underground workings of RO-3 were reportedly significantly removed by open pit mining operations, only leaving a small portion of the underground workings of RO-3 remaining. The boundary of all workings (underground and open pit) will need to be accurately defined and it should be noted that some of the underground workings were subsequently removed during open-pit mining operations.

Underground mine workings, if left in place, will likely need to be rehabilitated through remedial measures. These remedial measures will be a function of several interrelated items, such as; depth below graded surface, potential for additional fill, thickness of the roof, location and existing integrity of the pillars, etc. **It should be understood that the requirements for stability of a working mine and the stability (factor-of-safety) for underground workings to be built upon are two different cases, so inherently remedial work will be required to enhance any underground workings that are incorporated into the master planned community.** The remedial measures considered are; roof reinforcement (via rock bolts and shotcrete cover), need to add additional manufactured pillars, reinforcement of existing pillars, avoidance of the workings (non-structural areas), removal of the workings, and/or filling the workings. It is anticipated that a combination of these conceptual remedial

procedures will be utilized.[22]

Existing fill/waste rock

Waste rock from the mining operations exists in fills placed all over the site. It is estimated that these fill range in thickness from a few feet to fills nearing 100 feet in thickness. The fills consist of excavated materials that were not valuable for exploitation and were considered waste rock; and hence, these fills likely consist of limestone, dolomite, shale (clay) and low-grade gypsum. It is anticipated that most of these materials will be low expansive (given their parent material) but it is anticipated that expansive clays are also present. Given the general method of waste rock/fill placement at a mine, it is anticipated that these materials are not yet suitable for the support of surface improvements. Dependent upon final design grades, some of these fills will be removed but most could potentially stay in place. Some of these areas could be designated as non-structural (i.e., parks) but if intended for use as structural fill some or a combination of the following methods will need to be employed to substantiate the use of these uncontrolled fills, as then engineered fills. Basically there are mechanical methods of obtaining adequate fill density, such as dynamic compaction, compaction grouting, etc. Other methods could include moisture conditioning the soil to a saturated level, surcharging the fill, and then monitoring the fill for settlement. Based on field evaluation and laboratory testing; estimates could be given for the amount of water necessary, amount of settlement that would be anticipated (monitored for) and time the surcharge would need to remain in place until adequate consolidation (compaction) had occurred. It is believed that the existing fills can remain in place but they will need to be rehabilitated into useful, engineered fill. As an alternative, potentially deep foundation systems could be utilized in these fills.

Groundwater

Groundwater was identified in the western side of RO-3 by Tullar. As it is today, groundwater is not anticipated to impact development, but in the future, as areas within the master plan mature, groundwater seepage will likely develop, needing to be collected and conveyed to appropriate locations for discharge. Typically the means to remediate this condition is to install subdrain systems; however, no matter how well planned, much of the system would likely never be utilized if installed during initial construction. Typically it is best to wait and identify areas of seepage, and then install specifically designed subdrain systems to address the identified condition.

Because of the incised nature of the onsite natural drainages (canyons), subdrain systems will need to be installed, below the fill and on top of competent material, to collect and convey accumulated groundwater to an appropriate location for discharge.

Gypsum

The soils onsite were identified as maintaining high gypsum contents requiring remedial action involving over excavation to a minimum depth of 3 feet, when identified; and blending with other material at a 1 to 1 ratio.

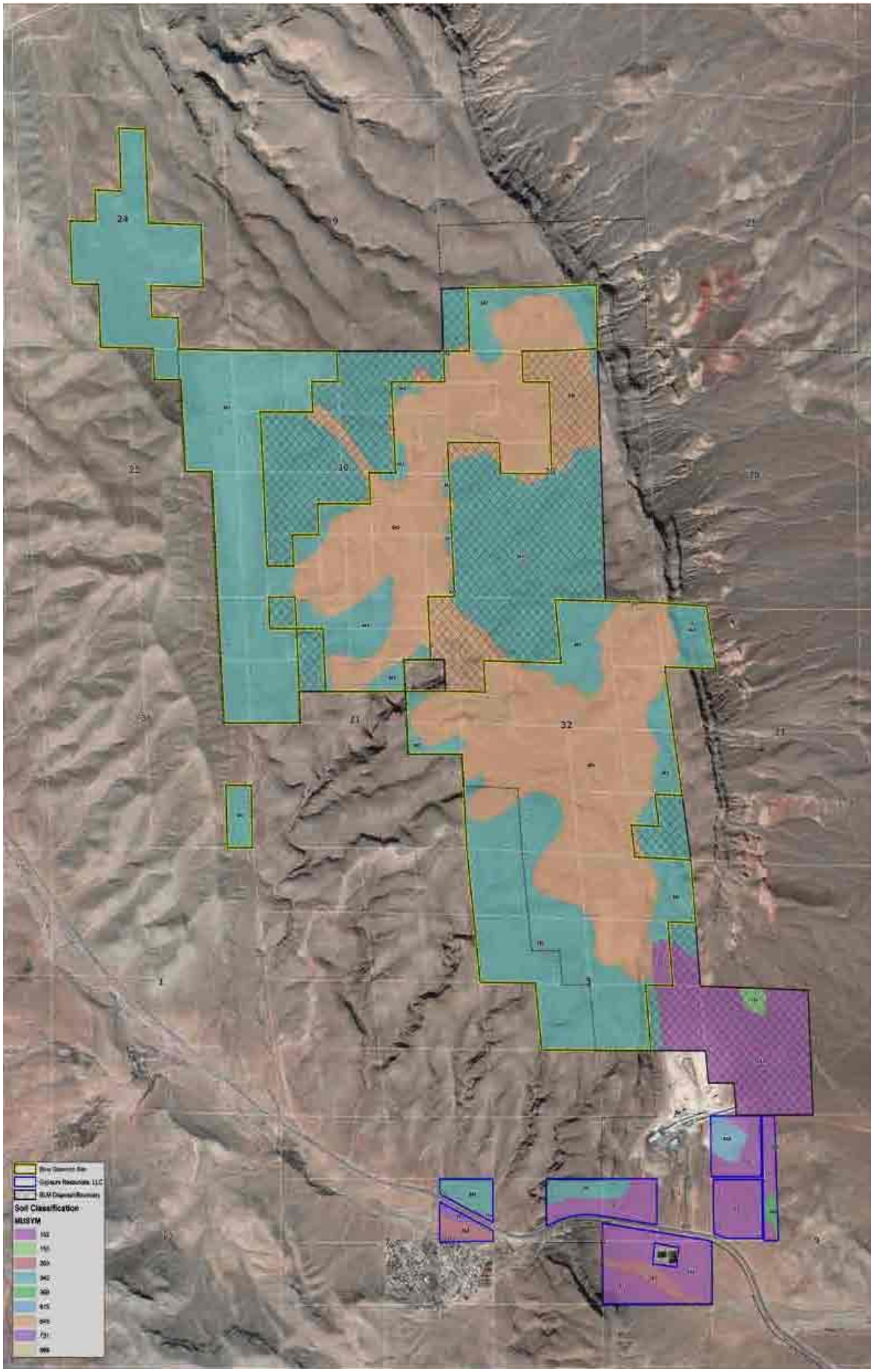
Fissure Zone and Faulting

In the URS report two faults were mentioned; 1) the fault mapped at the base of the cliff on the eastern side of the property, and 2) the second fault mentioned was mapped by Converse in a northerly trending direction along a seasonal stream bed located along the western boundary of the property. They also mention other faults, and it is expected that there will be minor faults encountered across the property. These conditions will need to be field mapped.

It is typical that when a fault is identified and determined to be active, movement within the last 11,000 years (Holocene geologic time), that setbacks from the identified fault line are required to be a minimum of 50 feet. Quaternary active fault (movement within the last ~2.6million years) setbacks shall not be less than five feet for an Occupancy Category IV structure, an R3 occupancy or a multifamily

[22] Wow! Seems to be a fair amount of work to heal the earth and make the above ground development safe to build on and raise children and other living things on. Seems also that are certain mining records that are not available. Will the absence of such records require any type of seismic mapping of the property to assure the development is not atop a spent mining cavern?

building. The bedrock formations encountered at the site are at least 200 million years old and the alluvium observed on site are up to ~2.6 million years old, the importance of this is that it will aid in the dating of last movement along the faults that encounter or have alluvium overlaying them.


Soil Classification
MLSYM

3.7 SURFACE WATER HYDROLOGY + DRAINAGE ASSESSMENT

Part of the site analysis for the study was a preliminary drainage assessment that was performed. The intent of this study was to determine the existing condition drainage patterns, discharge locations, peak 100-year storm event flow rates, model post-development impacts, address downstream impacts, analyze potential soil erosion, identify potential mitigation measures, and identify key drainage issues.

The study area is located outside of the McCarran Rainfall Area. The adjusted precipitation value for the 100-year storm event was determined to be 3.29 inches. The soils information was gathered from the SCS Soil Survey of the Las Vegas Valley Area.

The site lies within Hydrologic Soil Groups (HSG) 'C' and 'D'. Existing condition weighted curve numbers were calculated based on **"desert shrub" land cover in poor condition**.

Existing Drainage Conditions[23]

The existing drainage condition considers the site in its current state, with portions of the site having been disturbed due to mining activity. These disturbed portions of the site lie within soil type 645 described as "pit, quarry" soils and designated as HSG 'C'. The remaining soil is designated as HSG 'D'. Existing condition weighted curve numbers were calculated based on "desert shrub" land cover in poor condition. Offsite drainage basins consist primarily of undeveloped BLM property. Existing condition flows are summarized in the table below.

Several assumptions were made in the analysis of the conceptual developed condition drainage analysis. The key assumptions are as follows:

As reported, the development of the site will result in an increase in flow to downstream properties. Although in some cases this increase may be negligible, drainage law dictates that development cannot cause negative impacts to downstream property.

It is anticipated that various storm drain conveyance systems will be implemented in the master drainage infrastructure plan. It is further anticipated that many existing gullies will be maintained and served as an integral part of the master drainage infrastructure. Culvert facilities will likely be utilized to convey storm flow below roadways crossing existing gullies.

Based on the pre- and post hydrologic analysis presented above, a 0% to 16% increase in peak storm flow is anticipated at various discharge locations. It is anticipated that a storm water detention facility will be necessary to mitigate the increase[24].

Soil Erosion, Sediment Control & Debris Mitigation

Under existing conditions the project area generally consists of rocky, mountainous terrain with numerous well-defined gullies established between ridges. Approximately 800 acres of the total 2000 acres of project site have been altered from its natural condition due to mining activities. From a surface water runoff perspective, the undisturbed portions of the site are characterized by high runoff potential (low infiltration), rocky terrain resistant to erosion, and high potential for transport of larger

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[23] Water management in the desert is obviously a critical consideration for sustainable living. This includes wells that tap into the ancient aquifers – care must be exercised to treat these resources with respect so that natural sources in the surrounding mountains is able to replenish these resources of water at a rate equal to the rate humans are using this precious resource.

[24] Access road, and other roadway, parking areas, community areas, roofed areas and other human created surface must be evaluated from the perspective of water management. If the Blue Diamond Hill Community adopted a water policy that utilized every drop of water that fell onto their "property," would that be in violation of any existing water claims / rights? For example, can rain water falling on one's roof be used by the resident? One would anticipate there would be significant water flowing down the primary and secondary access roads during a rainstorm.

rocks and boulders due to steep terrain. In the altered areas, the surface terrain is characterized by a lower runoff potential (higher infiltration) due to scarified surfaces, terrain more susceptible to erosion, and lower potential for transport of larger rocks and boulders due to the flattened areas impacted by the mining activities.

Since a larger portion of the project site has been altered by mining activities, it is anticipated that development of the project site will serve to better stabilize the area and reduce the potential of soil erosion and/or sediment transport. The following provides a list of benefits the project could provide to reduce soil erosion, sediment transport and debris impacts onsite and offsite; thus improving upon the existing condition.[25]

- Engineered development of roadways, parks, housing developments, etc. inherently provides stabilized surfaces. As much of the erosive terrain altered by the mining activities would be replaced by engineered development, erosion and sediment transport potential would be reduced from the existing condition.
- Stormwater runoff, which is the major contributor to erosion and sediment transport, will be collected, conveyed and discharged in a stabilized manner and hopefully used sustainably by the community.
- Stormwater quality facilities, such as debris basins, could be utilized at discharge locations to provide for collection of sediment and other debris prior to downstream release.[26]
- Existing condition peak storm flow rates in existing gullies could be reduced by use of detention basins and/or re-direction of flow resulting in reduced velocities and less erosion potential.
- Maintenance programs can be implemented that would serve to maintain performance of established facilities, and collect and dispose of debris that would otherwise be transported downstream.

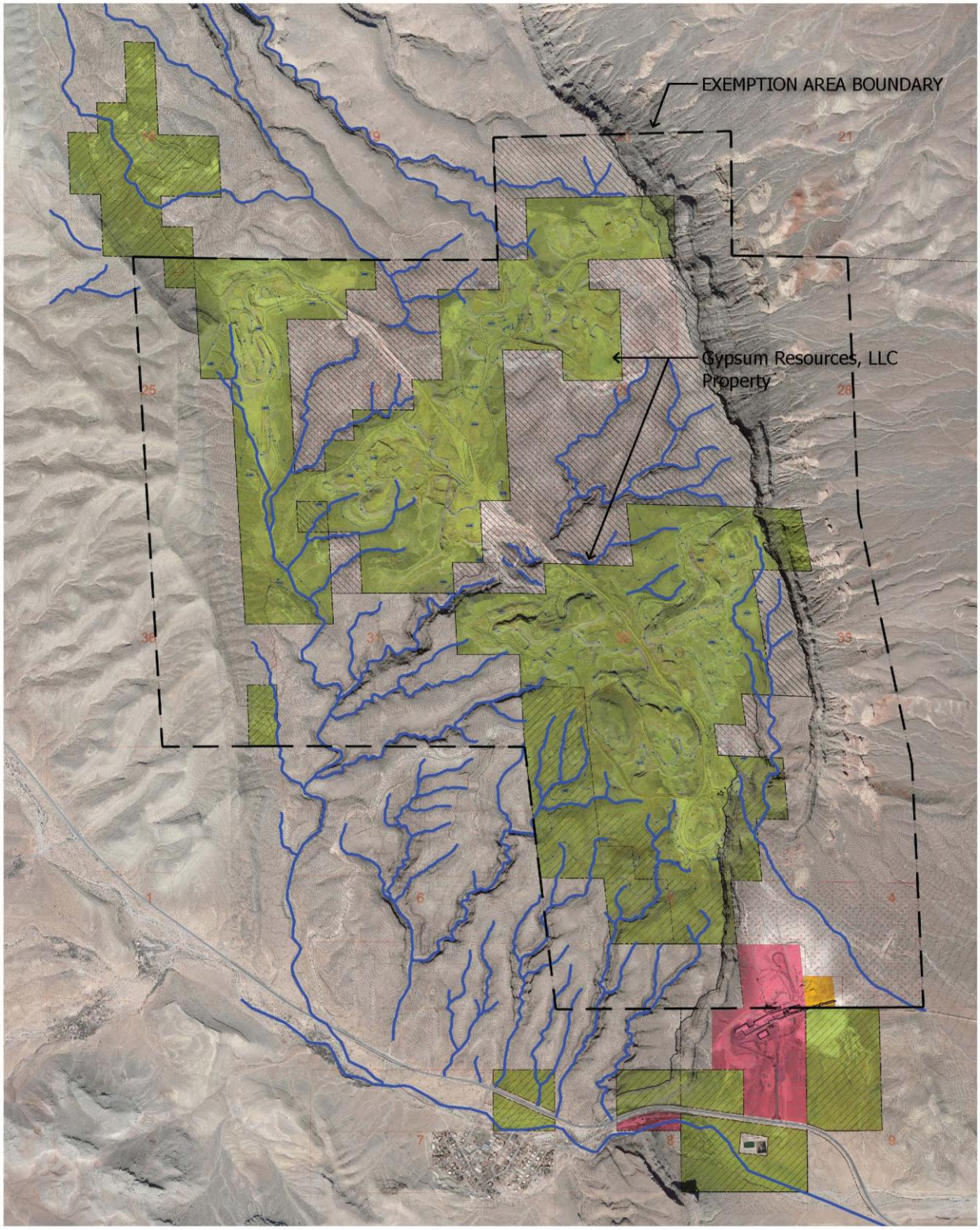
Conclusions & Recommendations

The following provides a summary of conclusions and recommendations with regard to project drainage.

- Based on the pre-and post hydrologic analysis, a 0% to 16% increase in peak storm flow is anticipated at various discharge locations.
- It is anticipated that at least one storm water detention facility will be necessary to mitigate the increase.
- In many instances/discharge locations, only small increases in flow are anticipated due to development. To eliminate the need for detention at some discharge locations where small increases occur, a downstream impact approach could be taken. This could entail evaluation of peak flow at a point further downstream and/or evaluation of the existing capacity of existing gullies to accommodate a higher flow.
- Since a large portion of the project site has been altered by mining activities, it is anticipated that development of the project site will serve to better stabilize the area and reduce the potential of soil erosion and/or sediment transport, therefore improving upon the existing condition.

[25] All of these "benefits" would be expected at the end of any mining reclamation effort – healing the earth and returning it to the same of better condition is the least that humans can do after extracting valuable resources from the earth.

[26] The concept of "downstream release" may have to be explored further because it implies the community will not be utilizing this water – what are the "rights" of use?"



DRAINAGE AND HYDROLOGY MAP
JUNE 2011

GYPSUM RECLAMATION STUDY
CLARK COUNTY, NEVADA

3.8 VEGETATION[27]

Plant communities found on the study area include Mohave creosote bush scrub, Joshua tree, blackbush, desert wash, and succulent scrub. The Joshua tree is found between elevations 3,600 and 4,200 feet where 8-10 inches of rain fall. The blackbush community occurs above elevation 4,000 feet. The Mojave creosote bush scrub and desert wash scrub communities occur below 4,000 feet and with an annual precipitation of 5 to 8 inches.

The Blue Diamond succulent scrub community has a variety of cactus, yucca, and agave species including beavertail cactus, buckhorn cholla, diamond cholla, golden cholla, barrel cactus, many-headed barrel cactus, saint cactus, pineapple cactus, foxtail cactus, Joshua tree, Mohave yucca, and banana yucca. Most of these plants are protected by the State of Nevada Cactus and Yucca Law and would be salvaged from the site as part of any mining, reclamation, reuse, or development activities.,

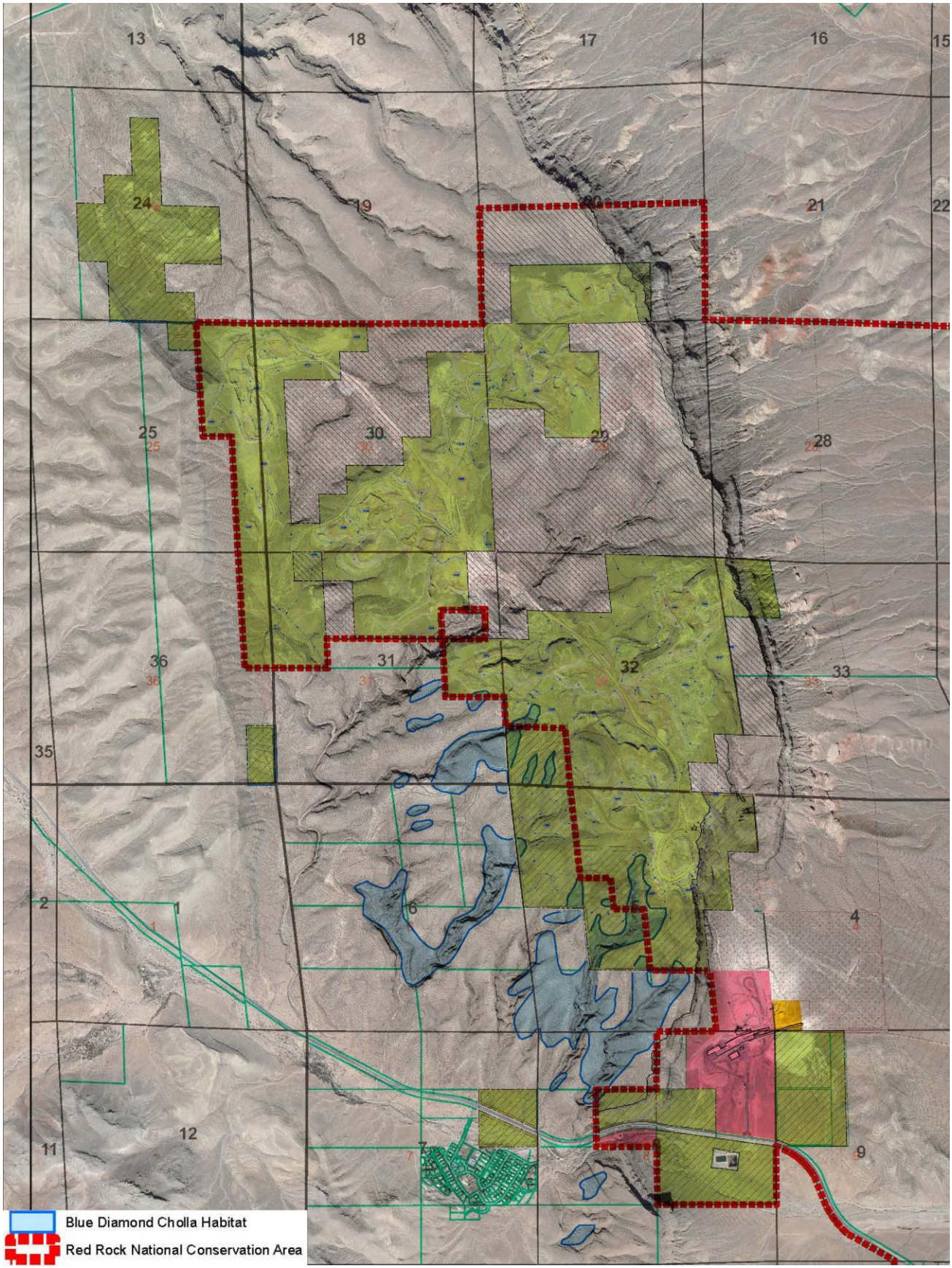
The Blue Diamond Cholla occupies approximately 312 acres in the southern portion of the study area. Some 83 percent of the habitat is located on BLM lands. The Blue Diamond Cholla is a federally listed protected species.

The location of the Blue Diamond Cholla (*Opuntia whipplei*) was field researched by the Nevada Natural Heritage Program for the US Fish and Wildlife Service in 1992. Their findings were included in GC Wallace's Draft Feasibility Report dated September 2002.

The exhibits of these reports were used to create GIS layer and map showing the location of the Blue Diamond Cholla.

[27] Good identification and recognition of the native plant life on the property. This is the first step for a genuine respect for earth in this bioregion. This is valuable information for perspective residents who may want to arrive and start planting non-native species (e.g. maple and oak trees they grew up with back east, or Kentucky Blue grass or ....)

Cholla habitat NORTH



3.9 WILDLIFE[28]

The most frequently observed wildlife on the property and adjacent study areas are black-tailed jackrabbit, desert cottontail, white-tailed antelope squirrel, and burros. Coyotes, mule deer, skunks, raccoons, ground squirrels, pocket mice, kangaroo mice, kangaroo rats, cactus mouse, canyon mouse, southern grasshopper mouse, woodrats, desert iguana, zebra-tailed lizard, desert horned lizard, striped whitesnake, western whipsnake, red coachwhip, desert tortoise, banded Gila Monster, chuckwalla Mojave rattlesnake, and up to twelve bat species *may be* on the study area. Bighorn sheep and wild horses were historically seen on-site, but have not been observed in recent years.

The desert tortoise and Gila Monster are protected species and the burros are protected by the Wild Free-Roaming Horse and Burro Act. The entire study area is within the Red Rock Canyon Herd Management Area.

The desert tortoise has been observed on the historic mine access road and the gypsum processing plant area, but has not been observed on the mine property. The Gila Monster is a BLM special status species.

The following wildlife has been observed or are likely to utilize the study area lands:

Birds:	Ash-throated flycatcher, black-chinned hummingbird, black-throated houserow, blue-grey gnatcatcher, broad-tailed hummingbird, common raven, sparfinch, mourning dove, phainopepla, pinon jay, rock wren, song sparrow, verdin, and white-throated swift.
Mammals:	White-tailed antelope squirrel, desert cottontail, coyote, desert woodrat,Merriam kangaroo rat, mule deer, bighorn sheep, cougar, kit fox, ringtail, and feral burros.
Reptiles:	Side-blotched lizard and chuckwalla.
Amphibians:	Pacific treefrog and red-spotted toad.

3.10 CLIMATE[29]

The regions climate is a subtropical arid climate typical of the Mojave Desert in which it is located. The area enjoys abundant sunshine year-round: it has an average of about 300 sunny days per year with more than 3,800 hours of sunshine.[30]

The summer months of June through September are very hot and mostly dry for the area, with average Las Vegas daytime highs of 99 degrees. In comparison, the average daytime highs for the site are only 82 degrees. The site averages only 6 days per year above 100 degrees, with most of those days occurring in July and August. By contrast, Las Vegas experiences an average of 72 days per year with temperatures above 100 degrees. Humidity is very low, often under 10%.

The winters are of short duration and generally mild, with daytime highs in Las Vegas near 60 °F. The site and the mountains surrounding Las Vegas accumulate snow during the winter, but the average daytime highs are 45 degrees.

Annual precipitation is 5.7 inches per year in comparison to Las Vegas, which experiences roughly 4.5 inches per year of rainfall. Rainfall occurs on average 29 days per year.

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[28] Good identification and recognition of the native plant life on the property. This is the first step for a genuine respect for earth in this bioregion. This is valuable information for perspective residents who may want to arrive and start planting non-native species (e.g. maple and oak trees they grew up with back east, or Kentucky Blue grass or ….)

[29] With climate change and global warming ahead of us, locating at 4500' is not necessarily a bad thing.

[30] What a great natural asset that can fully utilized with mutual benefit

The microclimate of the site affords generally comfortable living conditions with the summers being more moderate than the surrounding valley. On average the temperature readings are 10 to 15 degrees cooler than the highs recorded in the Las Vegas valley. The escarpment that frames the easterly edge of the property buffers the winds from the east. The predominate wind direction is from the southwest, 45% of the time, and is characterized by wind speeds ranging from 9 to 15 mph. Strong and persistent winds, generally acknowledged as common in the region, are similar in frequency and intensity for the site.

3.11 VIEWSHED ANALYSIS

In an effort to protect the scenic resources of the area and to minimize any impacts to the surrounding viewshed by proposed development, Gypsum Resources undertook a comprehensive analysis of the Study Area's geologic and topographic features. Specific attention was directed to potential viewshed impacts associated with the reclamation plan – development that could be visible to motorists along SR 159 and the Red Rock Scenic Loop, bicyclists, pedestrians, hikers, and visitors to the RRCNCA.

The purpose of the viewshed analysis is to identify lands within the study area that are visible from various locations along SR 159 and along the Red Rock Canyon Scenic Loop within the RRCNCA. The methodology used in this analysis incorporated GIS generated data and ESRI's 3D Analyst computer software. This program created a TIN (Triangulated Irregular Network) surface representing existing terrain. The study area for the Viewshed Analysis covered over 240 square miles. The following geometry was used in the analysis:

- 2-foot contour intervals from photogrammetry were sampled down to 5-foot intervals
- GIS data from Clark County 1996 flight using 5-foot contour intervals
- USGS 7.5 minute quadrangle contours

The Composite Viewshed Analysis was performed using vertices along the polyline representing SR 159 and the Red Rock Loop, with each vertex representing an observation point spaced approximately 90 feet apart. It should also be noted that the park in the Town of Blue Diamond was an additional point identified for this analysis.

The TIN surface is then converted to a raster grid, which created equally sized square areas (cells) covering the entire terrain. An elevation was assigned to each cell, based on the average interpolated elevation of the TIN faces within the cell. A 6-foot vertical offset was applied to each observer point's ground elevation. Each cell that can see the observer point is given a value of 1 and all cells that cannot see the observer point are given a value of 0. The cells with a value of 1, landforms that can be seen from the selected points, are visible as yellow areas on the corresponding maps.

As depicted on the two Composite Viewshed Analysis exhibits, very little of the proposed project site can be seen from the visually sensitive corridors of SR 159 and the Red Rock Canyon Loop.

SR 159 Viewshed Summary

As shown in the SR 159 Composite Viewshed Analysis, the majority of lands that can be seen from the corridor are located at the edges of the Gypsum Resources properties. Lands that can be seen from this corridor total approximately 688 acres, or 20% of the total 3,466.4acres referred to as the secondary Study Area or "Project". The majority of the property is hidden from view by an intervening ridge that exists directly to the east of SR 159 for the majority of the scenic corridor. This ridge rises considerably in elevation and effectively screens the property from view.

The southerly parcels located adjacent to SR 159 are clearly visible, due to the close proximately to the roadway, lack of any intervening topographic features, and the general slope characteristics of these parcels. These visible areas account for approximately 273 acres of the total 688 acres of visible lands. These lands have been suggested for possible transfer from private ownership to public ownership to ensure permanent open space Designation.

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The southwestern facing slopes, consisting of ridgelines that fall in a southwesterly direction, are also visible from the identified points along the SR 159 corridor. These highly visible ridgelines effectively

block views to the properties at higher elevations. These visible ridge lines account for approximately 126 acres of the total 688 acres of visible lands. The majority of these lands have been suggested for possible transfer from private ownership to public ownership to ensure permanent open space designation.

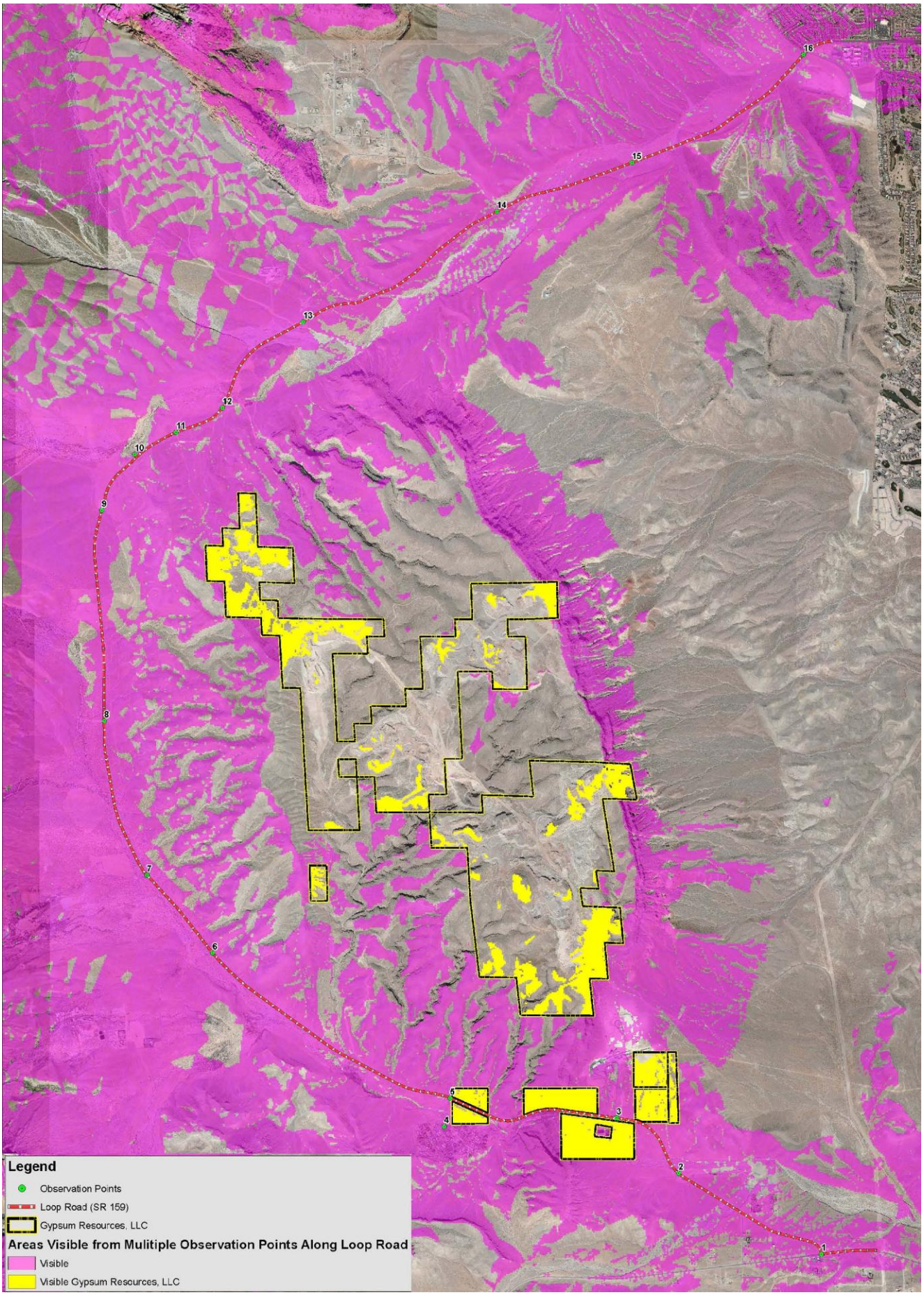
The third area of high visual significance within the Gypsum Resources property is commonly referred to as the "Margo Claim". These lands are located in the northern most areas of the property, are more gently sloping, rising in elevation from the north to the south. From a section of SR 159, approximately ¼ mile in length, several areas of the Margo Claim can be seen. While this is a relatively small portion (1/4 mile) of the overall length of the scenic corridor, none the less it is a sensitive viewshed. These visible areas account for approximately 128 acres of the total 688 acres of visible lands. These lands have been suggested for possible transfer from private ownership to public ownership to ensure permanent open space designation.

Other, isolated portions of the property are visible from the SR 159 corridor. These lands are typically the tops of ridgelines or tailings from the mining operations. These areas total approximately 161 acres of the total 688 acres of lands visible along the corridor.

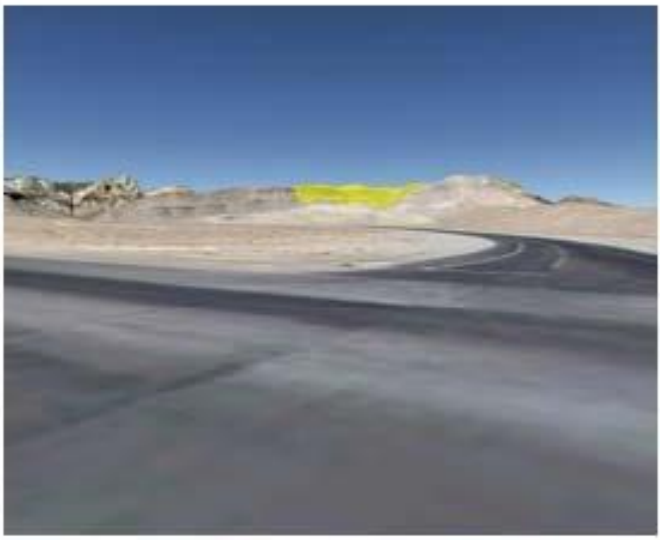
In summary, the analysis clearly shows that the majority of areas within the project can be developed without compromising the viewshed along SR 159, the Town of Blue Diamond, and the Red Rock Loop. Most importantly, the proposed "Community Core" is located in an area of the site that is almost completely out of public view from these vantage points. This siting of the Community Core ensures that the development zone with the highest concentration of structures and intensity will not detract from the scenic quality of the adjacent lands. The viewshed analysis has also confirmed the appropriate siting of the lowest density/intensity uses along the project edges and further supports the concept of land transfer to public open space for those areas most visible from the scenic ways.

Red Rock Canyon Scenic Loop Viewshed Summary

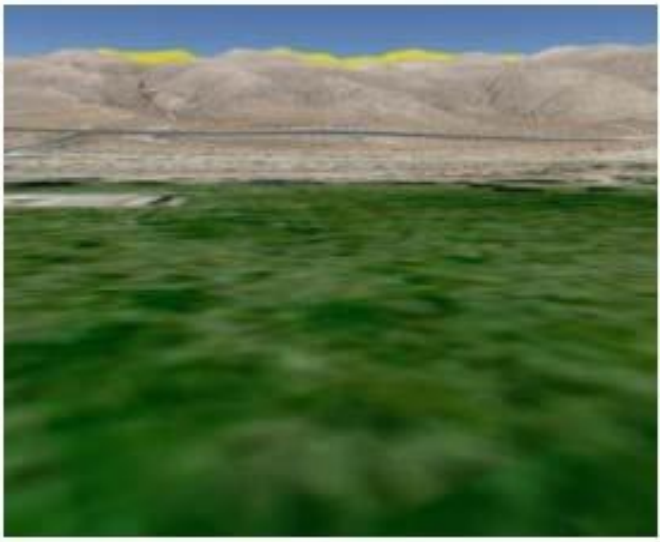
As shown in the Red Rock Canyon Scenic Loop Composite Viewshed Analysis, the majority of lands that can be seen from the corridor are located at the northeastern edges of the Study Area and Gypsum Resources properties. Lands that can be seen from this corridor total approximately 507 acres, or 14% of the total 3,466.4 acres referred to as the secondary Study Area or "Project". The vast majority of the lands seen from the Red Rock Canyon Scenic Loop are referred to as the "Margo Claim" lands. In large part due to this viewshed exposure these lands have been suggested for transfer from private ownership to public ownership in order to ensure preservation of this scenic corridor.


Legend
Observation Points
Loop Road (SR 159)
Gypsum Resources, LLC
Areas Visible from Mulitiple Observation Points Along Loop Road
Visible
Visible Gypsum Resources, LLC

NORTH



VIEWPOINT 1: INTERSECTION OF SR-160/SR-159



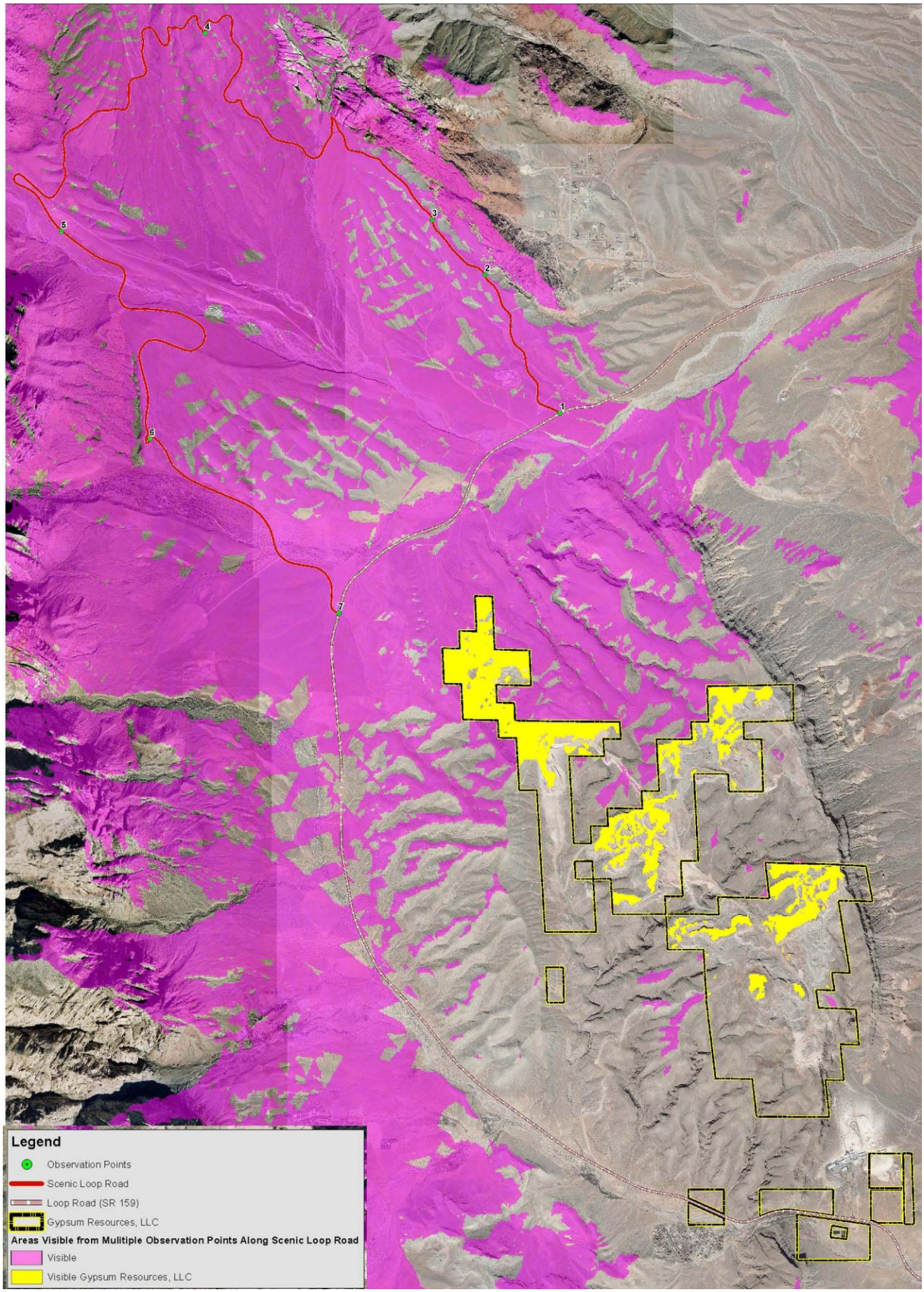
VIEWPOINT 4: BLUE DIAMOND PARK

VIEWPOINT 6: BONNIE SPRINGS ROAD

VIEWPOINT 8: FIRST CREEK TRAIL

VIEWPOINT 9: SCENIC LOOP DRIVE

VIEWPOINT 11: PICNIC AREA


1
2
3
4
5
6
7
Legend
Observation Points
Scenic Loop Road
Loop Road (SR 159)
Gypsum Resources, LLC
Areas Visible from Mulitiple Observation Points Along Scenic Loop Road
Visible
Visible Gypsum Resources, LLC

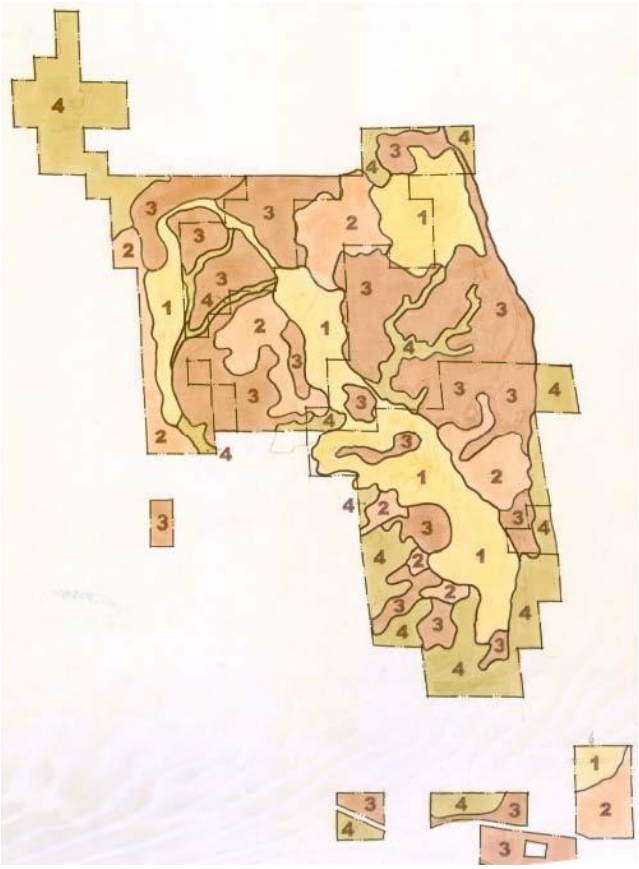
3.13 CONSTRAINTS COMPOSITE + DEVELOPMENT SUITABILITY

The Gypsum Resources Reclamation Concept Plan was informed by a composite analysis of the GIS resource mapping, viewshed analysis, background reports, and field studies of the various project consultants.

From this analysis, along with project issues identified through the public outreach programs, a preliminary constraints composite was produced. The composite analysis is an initial summary of the physical fact ors that influence the planning process. These factors. include drainage, slope, aspect, elevation, viewshed, skyline, vegetation, and areas impacted by the mining activities.

This analysis informs the planning process, location of uses, intensity and density of those uses, and the general characteristics of community design. The analysis identified four areas:

1 Least Constrained (most developable)
2 Minor Constraints
3 Moderately Constrained
4 Most Constrained (least developable)



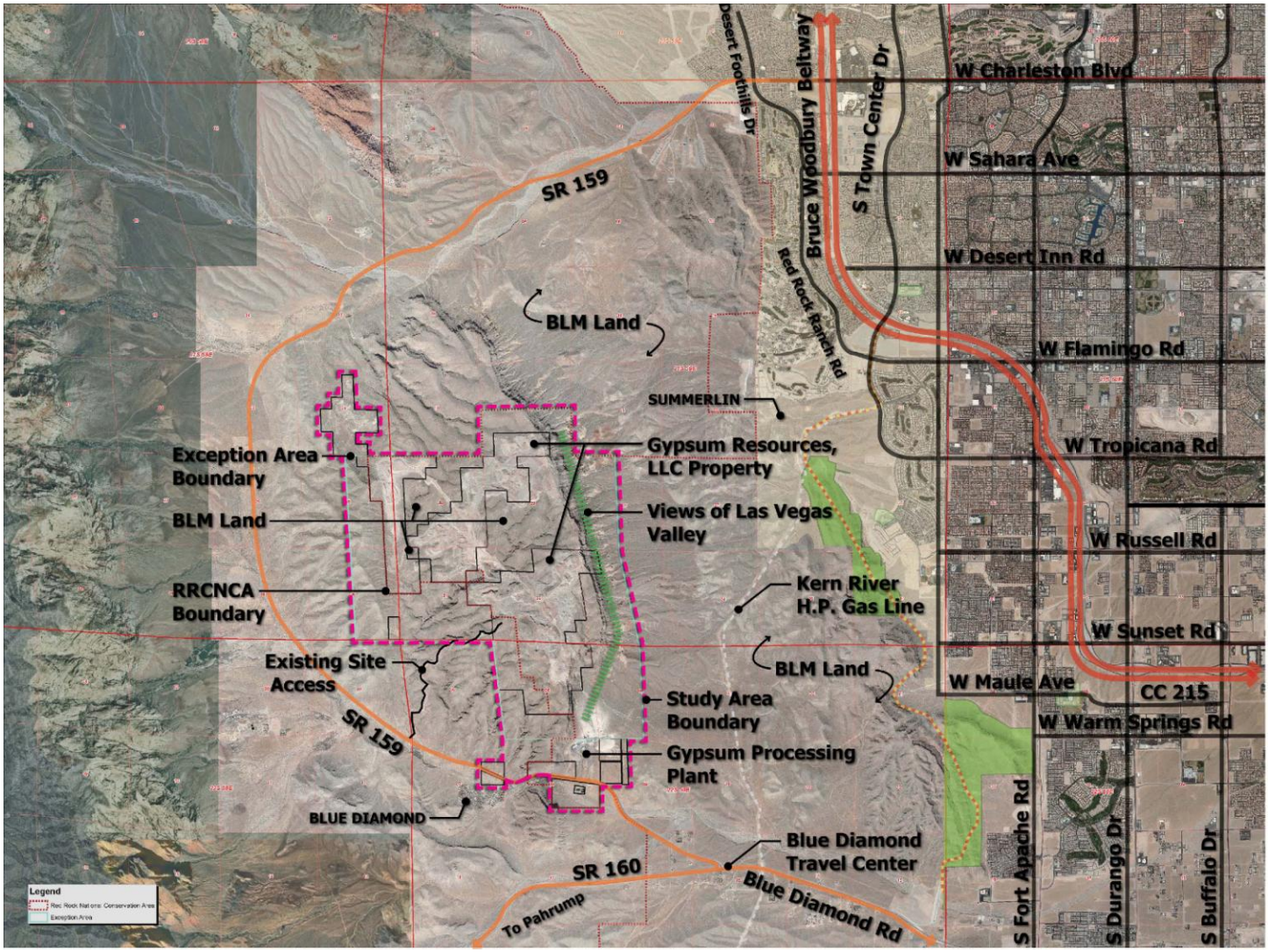
4.0 COMMUNITY PLAN

4.1 STUDY AREA

For purposes of the Gypsum Reclamation/ Development Concept Plan, a Primary Study Area has been designated and totals approximately 5,830 acres. A subset of the Study Area is the property owned by Gypsum Resources, L.L.C. totaling approximately 2,464 acres.

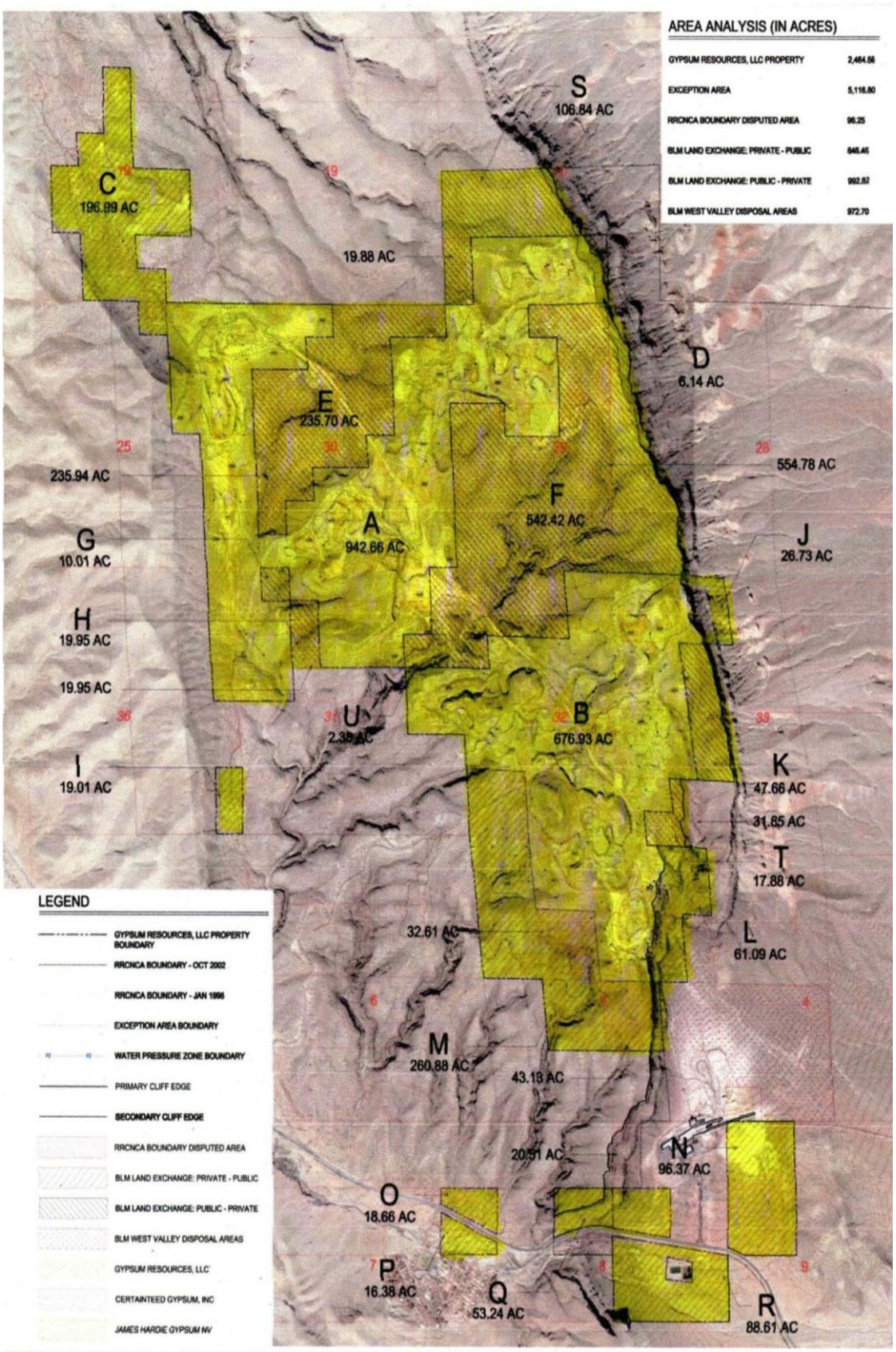
A secondary Study Area (Project) of approximately 3,466 acres has been delineated that includes lands owned by Gypsum Resources and BLM. The purpose of defining this secondary Study Area is to analyze and evaluate alternate concepts plans and potential land transfer options. The lands identified within the secondary Study Area are comprised of lands identified for potential transfer from private to public, public to private, and lands owned by Gypsum Resources.

This Study Area has been identified to analyze and evaluate the impacts associated with the Gypsum Reclamation / Development Plan proposal beyond the boundaries of Gypsum Resources lands and to establish a comprehensive plan for those lands surrounding the Reclamation/ Development plan.



Primary Study area map

JUNE 2011



SECONDARY AREA ("PROJECT") DELINEATION MAP

4.2 CONCEPT PLAN OVERVIEW

The Gypsum Reclamation/Development Concept Plan is designed to exemplify the values of sustainable living and 'best practices' of community building:

- environmentally sensitive and ethically responsible for all life forms native to this desert bioregion that are/will be affected by this Reclamation/Development project[31] as indicated in the Vision Statement (Section 2.0)

  ".....creating great places for all natural & native life as well as newly arrived human life."

  This Plan acknowledges the site has been injured by past mining activities and can be helped to heal with a mindful Reclamation / Development Plan as proposed (and amended).

- resource efficient –this includes Energy, Air, Water, Minerals/Materials

  Sustainable Living Example: All Homes and Businesses and Community Buildings will be powered by the Sun.

  The proposed community will promote a sustainable life style and allow residents to harvest sufficient sunlight (solar energy / renewable energy) to support their particular individual/family energy needs (electrical power, hot water, heating & cooling, transportation, recreation, entertainment, etc.) as well as community needs (education, safety, communication, etc.).

  Homes will be oriented to provide unobstructed roof access to sunlight – preferable south facing roof area, then southeast facing, then southwest facing, then East facing, then West facing. Solar PV and Solar thermal panels will be an integral part of every home, commercial and community building to take advantage of Nevada's natural resource – sunlight. (In addition to sunlight, it would be appropriate to consider if the natural topography lends itself to harvesting any wind energy, if that hasn't already been done.). Using the Springs Preserve and other similar sites as examples, community areas could include parking area shades consisting of solar PV panels. In theory, a well designed community could be a net energy exporter and financially benefit from selling electrical power to NV Energy.

  Residents living in this community will be able to assume responsible self-sufficient sustainable adult roles in life.

  The proposed community will promote sustainable living and allow residents to live full lives with zero waste / consumption. Through self-imposed carbon dumping fees, the residents who choose to burn hydrocarbons on the property and dump the combustion products into the common atmosphere will be assessed a dumping fee – the proceeds from this assessment will be used to help these same residents transition to zero waste / renewable energy living.

- socially responsible – the Concept Plan illustrates the intent to assembly as much human awareness / consciousness as possible – interdependent web of life , and
- 'economically sustainable'[32] - works within the current flawed economic system as well as the Real World Eco-nomic system

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[31] This includes disincentives to introduce intrusive/invasive species from other bioregions e.g. those humans who migrate here from the Eastern U.S. are discouraged from bringing with them their Kentucky Blue grass that expects an annual rainfall of 48 inches rather than 4.8 inches.

[32] The term "economically sustainable" is troublesome in that it requires a great deal of elaboration before it really conveys a clear message. Sustainable living is the primary concern of this reviewer. Knowing that today's economics (created by humans – not by the natural world) are fatally flawed and erroneously influencing humans to make unsustainable choices, e.g. choosing to burn ancient one-time-only reserves of hydrocarbon (sequestered carbon), dumping the combustion products into the common atmosphere, and altering the heat balance of the planet is insane behavior. Any economic system that says this is "cheaper" and therefore the preferred human choice is equally insane.

In keeping with the intent of the Major Projects process, a **community design framework plan** has been developed to describe the conceptual community character, land use, circulation, open space, infrastructure and circulation relationships of the plan.

The **framework plan** is useful in establishing the conceptual community character, land use, circulation, open space, infrastructure and circulation relationships (as indicated in the previous sentence).

~~The~~ One intent of the **conceptual community design framework plan** is to describe a Reclamation/Development approach/blue print that in turn can be used to create an attractive and cohesive community.

The **conceptual community design framework** plan is also intended to guide future more specific studies and planning efforts towards a more detailed **Reclamation/Development plan** that embraces the scenic beauty and natural resources of the site and demonstrates how humans can be of mutual benefit to this bioregion.

Additionally, the **conceptual community design framework plan** will provide residents and visitors with an experience consistent with the **Gypsum Reclamation/Development Plan vision** (see Section 2.0 Vision Statement).

> ***"Create a multi-dimensional community that overcomes the compartmentalized anthropocentric approach of conventional planning and instead focuses on a holistic, sustainable, integrated view of creating great places for all natural & native life as well as newly arrived human life ."***

As described in previous sections, several planning goals, objectives and principles have been established for the **Gypsum Reclamation/Development Plan.**

The following sections describe the organizing principles, the conceptual community character , land use program, circulation, access, open space, infrastructure, circulation relationships and general characteristics of the proposed **Gypsum Reclamation/Development Concept Plan**. A The process of constructing a Reclamation/Development Concept Plan allows the developer to ~~that~~ balance~~s~~ the existing qualities of the land with the human forces and needs ~~best guides creating places for human communities~~ (deleted the hogwash).

Capturing the site's enduring connection with the natural surroundings is the fundamental planning and design principle that has guided the Concept Plan. The realities of the current condition of the site (unprincipled alteration from anthropocentric "Mine-ing"" practices). provide an opportunity to implement a reclamation/development plan that serves a wide-variety of community needs.

Character Zones

Three primary areas o~~r~~f the study area have been identified; core zone, general zone, and edge zone.

Each of these zones has characteristics that will influence the ultimate design and development patterns of the community.

Based on the developability analysis, the project area has been organized into four distinct character zones. These zones have guided the land use distribution of the Concept Plan and are intended to guide future planning and design efforts in defining specific land use, character, image, intensity, and density.

Core Zone

The "Core" zone is located in the central portions of the property. These areas have been characterized as the most impacted by the historic mining operations, are generally flat, and are almost entirely out of the sensitive viewshed.

The Core zone is proposed as a mixed-use area and is where the Community Core is proposed. The Core Zone is proposed to incorporate the largest mix of land uses and the highest average intensity within the community plan.

General Zone

The "General" Zone is characterized geographically as the areas directly adjacent to the Core Zone, moderately impacted by the mining operations, gradual slope, and low or no vegetative communities. These areas would predominately be comprised of residential, and various densities, community facilities, educational, open space, and recreational uses.

Edge Zone

The "Edge" zones are areas located at the edges of the planning area, adjacent to natural open space and are characterized by steeper topography, little or no impacts by the historical mining operations, and have moderate to high levels of viewshed exposure from sensitive lands. The Edge Zone areas would be primarily low to rural density residential with supporting public facilities, open space, and recreational facilities. The Edge Zone is the lowest density/intensity development areas within the community plan.

Open Space

The Open Space zones are sensitive natural areas designated for the Open Lands land use category. These areas are the most sensitive lands and have been identified as valuable open-space resource. These areas also have high levels of viewshed exposure from identified sensitive areas. The Open Space Areas are proposed to be primarily Open Lands land use category.

Planning Areas + Villages

The Concept Plan is organized as a series of planning areas or villages. Each planning area is specifically programmed and designed to fit within the context of the overall characteristics of the place. Regardless of the land use, intensity or density, the Gypsum Reclamation Concept Plan is based on the tangible connection of development on the site to the area's underlying character. The Concept Plan fuses connected and diverse community forms into a development character that is defined by an array of natural patterning. Exiting landforms (natural and man-made), washes, ridges, view corridors, and gradient provide breaks in development patterns, edges, and interest. Each village is envisioned to incorporate a variety of land uses, housing types, densities, character and image types, open space and recreational facilities, and community services.

Generally, the Concept Plan can be summarized in the following concepts:

Community Core

Strategically located in the geographical and elevation center of the plan, the proposed Community Core is envisioned as a dynamic mixed-use hub for employment, education, shopping, dining, entertainment, hospitality, and unique housing opportunities. In part due to the fact that this area has already been graded flat, the Community Core will be a highly pedestrian-oriented district. The Community Core will serve as the center for community gathering for the entire community as well as the greater west Las Vegas communities. At the heart of the Community Core will be the central park or square. Other recreational facilities include the town park, active and passive parks and open space as well as linear parks and trails.

Research + Technology + Educational Institutions

These areas, or districts are located in close proximity to the Community Core and provide the economic and educational foundation for the community. These special use areas are located primarily within the central portions of the project and on lands previously impacted by the mining operations. A diverse mix of uses is proposed within these areas to support the primary land uses such as recreational facilities, open space, and public facilities.

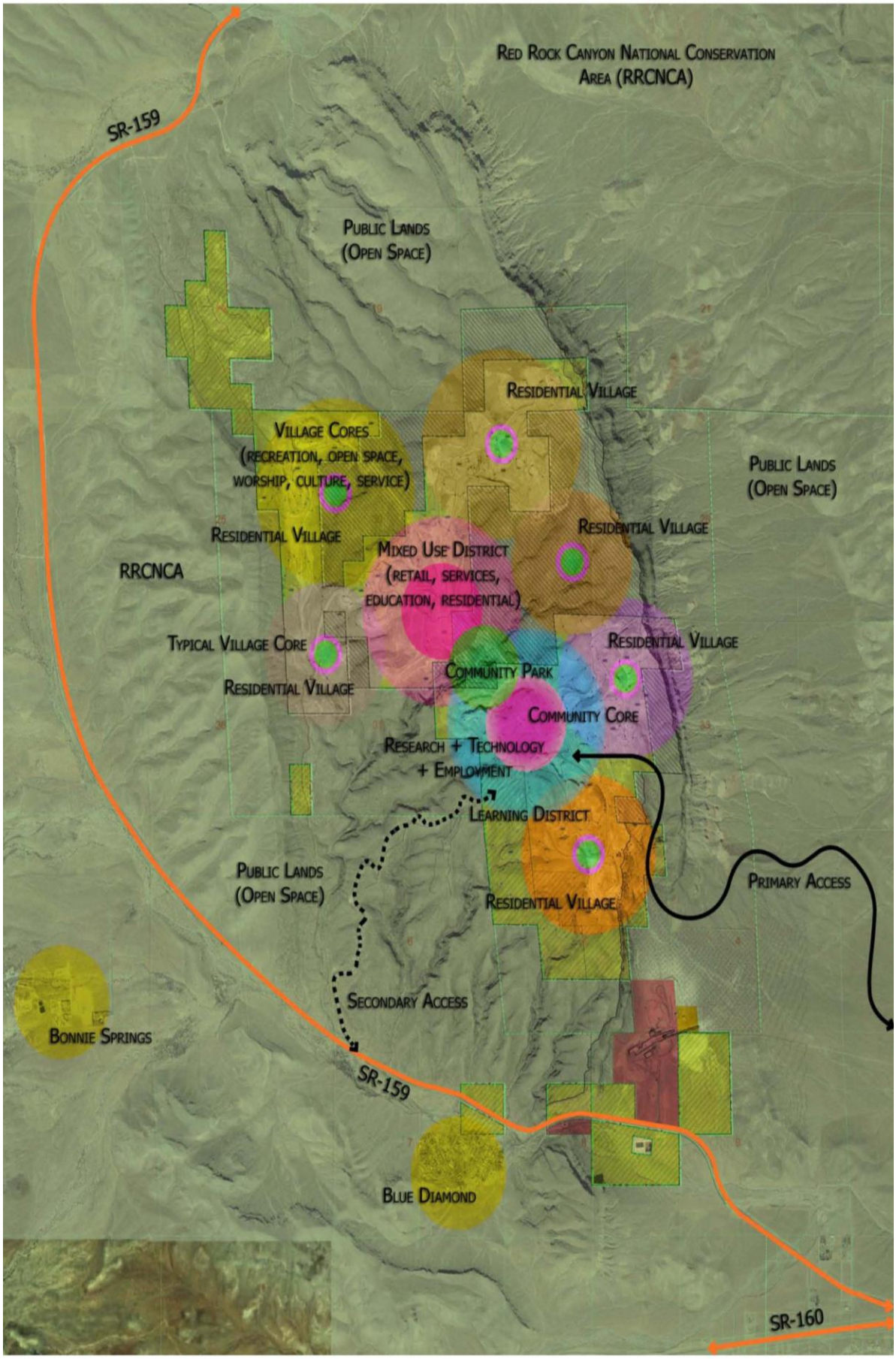
Residential Villages

A series of residential villages, or districts are located within the community plan providing opportunities for a wide variety of home type, density, configuration, and styles. Each of these villages is anticipated to meet the market demands for a broad spectrum of segments and demographics. Each residential village is organized around a centralized open space feature, recreational facility, and community facility. The villages adjacent to the community core and special use districts are proposed as medium density, while the edge villages would be comprised of the lowest density, largest lot residential.

Major Points of the Gypsum Reclamation Concept Plan are:

- Primary access from the east, no primary access from SR 159
- Potential land transfer preserves most sensitive areas
- Creates public access through trails, open space, parks, recreation, educational facilities, and interpretive center
- Locates mixed-use community core in the center of the property, on lands most impacted by mining activities and in the least sensitive areas
- Locates the lowest density/rural residential at the edges
- Provides a centralized, active use park at the core of the community
- Provides a broad diversity of parks, open space and recreation
- An extensive trail system that provides access through the community and connects uses and neighborhoods
- Includes a wide variety of land uses, residential types, and community facilities
- Creates a series of "village cores" organized around a park, recreational element, and/or community facility

The project will be designed and constructed to meet the stringent requirements prescribed by the governing agencies, including; Clark County Sanitation District, Nevada Division of Water Resources, Clark County Health District, Clark County Regional Flood Control District and Clark County Public Works.



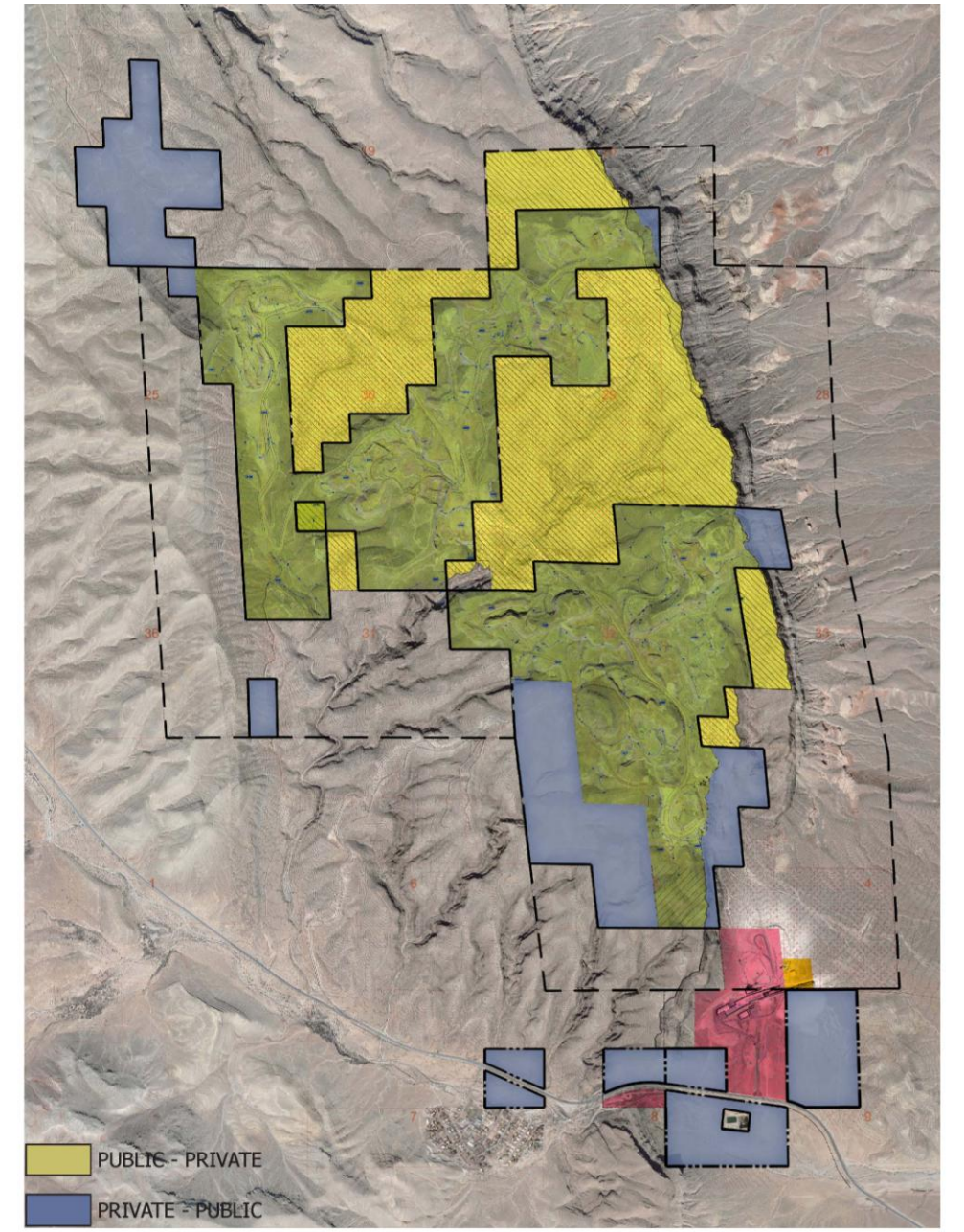
Concept Plan

4.3 SENSITIVE LANDS + LAND TRANSFER

The Gypsum Reclamation Concept Plan contemplates a land transfer between the BLM and another entity yet to be defined to facilitate the preservation of the most sensitive natural lands. The methods, transaction process, exact acreage, and timing will be defined in subsequent phases of planning and entitlement.

Gypsum Resources will work with Clark County, the BLM, and community stakeholders to identify sensitive lands that would be potential transfer properties for consideration. The primary goal in proposing a land transfer is to preserve the most sensitive (visual, vegetation, slope, etc.) and to protect the visual integrity of the Conservation Area, Red Rock and Blue Diamond.

Gypsum Resources has introduced the land transfer with the BLM in an informal setting and will file applications for the transfer with the support of Clark County and Community Stakeholders.



LAND TRANSFER
JUNE 2011
GYPSUM RECLAMATION STUDY
CLARK COUNTY, NEVADA
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4.4 PLANNING PRINCIPLES + PROGRAMMATIC GOALS

Create a "Complete Community"

- Create a dynamic, multi-functional, supportive, and multi-generational community that emphasizes neighborliness and evokes a strong "pride of place."
- Establish a multi-dimensional, sustainable, human community within a harmonious and balanced built environment.
- Create a feasible Reclamation/Development plan that will repair the damage done to the property by the mining activities
- The measure will be sustainability of the Social, Environmental, and Economic systems.
- Ensure the long-term management of the property and its resources; contribute to the long-term management of the surrounding natural resources.
- Respect the needs and interests of the surrounding communities, the RRCNCA, Clark County, and the region.
- Address a wide range of community needs such as open space, conservation, sustainability, housing diversity, job creation, and education.
- Actively develop strategies and programs that lead to creating an integrative, inclusive, and environmentally responsive development.
- Emphasize a process of planning and design that aims not merely to protect the land inits current state, but to fulfill a wide range of other objectives and opportunities.
- Adhere to a planning process that is based on a rigorous analysis of the natural systems present on the site
- Seek to foster community within the context of a comprehensive and inclusive public outreach process.
- Ensure that the process and the project reflects Clark County's long-term commitment to envision, establish, and maintain high-quality communities

Redevelopment Stewardship

- Reclaim and develop the former mining site in a prudent manner that responds to the needs of the community; local, county, state, federal agencies and private owners consistent with; sound, fiscally sustainable business practices

Site Integrity

- The site's proximity to one of the nation's most beautiful and treasured natural environments provides unique opportunities, challenges, and inherent responsibilities –celebrate the unique qualities of this place
- The planning process and development of the project program, uses, design guidelines, and builtscape will respond to this unique setting
- The potential exists to set the standard and create new models for the development of new human communities and their relationships with the natural environment
- Implement the most advanced models of development including such practices as community-wide water conservation programs, low-impact design engineering, **renewable energy generation**, and green building.
- Explore and evaluate potential BLM land exchange opportunities, or other conservation measures, with the goal to preserve lands inside the RRCNCA and other sensitive lands as open space in perpetuity
- Establish and implement a public outreach program and dynamic planning process that overcomes the compartmentalized approach of conventional methods
- Focus on an integrated, holistic approach to problem solving

Economic Development

- Emphasize the unique and special attributes of the land and its location in identifying economic development opportunities (R&D, business, education, medical, etc.)
- Emphasize "green" technologies, sustainability industries
- Attract uses that benefit the regional and local economy
- Create a development plan that generates enough revenue to fund the reclamation of the mining impacts, infrastructure improvements and maintenance, and public services
- Create a plan and management program that ensures public benefit in the forms of open space and recreational uses, public access, civic uses, education, and interpretive programs

Lifelong Learning

- Create and implement a community model that emphasizes lifelong learning and education
- Stimulate learning and discovery

Traffic and Mobility

- Create and sustain a comprehensive transportation system – interconnected roads, trails, and paths
- Create a community fabric that minimizes traffic, reliance on the automobile, and carbon emissions
- Create a circulation system that minimizes traffic impacts on adjacent communities
- Create opportunities for public access and mobility within and through the site
- Create a comprehensive system of parks, trails, and open space that connects neighborhoods and uses

Open Space

- Create a community open space network that is responsive to the desert environment
- Provide natural, active, and passive open space and recreational uses
- Create public access opportunities
- Create an open space system that encourages accessibility, amenities, education, and preservation of highly sensitive areas

Land Use

- Program land uses and intensities in response to adjacent communities and open spaces
- Promote economic development; emphasize the diversification of the region's economy
- Create a "community core" that serves as the heart and soul of the place and provides abroad spectrum of community needs (recreation, services, education, research, health and wellness, and housing types.
- Create opportunities for a wide diversity of educational facilities including higher education.
- Residential development should be programmed and designed in such a way as to include a broad diversity of home types, density ranges, sizes, and pricing levels.

Community Character

- Development of the site should reflect the rural and rustic characteristics of the area.
- Design and development standards should emphasize environmental compatibility.
- Minimize offsite viewshed impacts by locating the majority of development out of critical view paths, implementing design criteria that emphasize natural color and materials, and imposing "dark skies" lighting restrictions.
- Community design should be attractive, high quality, and timeless.
- Emphasize a diversity of form, character, materials, and color.
- Orient roads, open space corridors, and development patterns towards natural features and views.
- Create a vibrant community core.

4.5 PROPOSED LAND USES

The Concept Plan proposes a wide variety of land uses supporting the "complete community" concept. The land uses proposed are based on the Enterprise Land Use Plan of Clark County.

Proposed land uses include the following:

- Rural Neighborhood (RN)
- Residential Low (RL)
- Residential Suburban (RS)
- Residential Medium (RM)
- Mixed-Use Development (MUD)
- Office Professional (OP)
- Commercial Neighborhood (CN)
- Business and Design Research Park (BDRP)
- Public Facilities (PF)

These land use categories correspond to the Clark County Land Use Plan and are general categories of planned land uses. Each category includes a variety of zoning districts and a range of intensities and densities of uses. The following provides a description of each as defined in the Enterprise Land Use Plan.

Land Use	Percent of Total Area
Residential	64%-73%
Education/Campus	4%-8%
Mixed-Use/Commercial/ Employment	5%-10%
Civic	3%
Roadways	7%
Program Open Space	8%

Land Use Categories – Residential

The following summarizes the various residential categories as proposed in the Gypsum Reclamation Plan. The residential categories listed are based on those cited in the Enterprise Land Use Plan approved in 1999 and located within Clark County.

The residential categories are intended to fulfill the goals and objectives outlined in the vision and provide a wide diversity of home type and configuration.

The residential land use designations are general categories of planned uses. Each category has a range of densities and residential configurations. These designations do not guarantee that a specific parcel will be approved for a particular zoning classification or density in future entitlement stages.

Of the total primary Study Area of approximately 3,466.1 acres, approximately 1,916.5 acres has been designated as residential uses. Within the residential categories, a broad mix of home types is proposed including rural lots, estate lots, resort residential, single family detached at various lot sizes, single family attached, cluster, and live/work supporting a wide variety of income levels, family types, and age groups.

Additional land uses anticipated in the residential areas include: schools, parks, recreational facilities, place of worship, and public facilities. Village retail/service areas of 5 acres or less may also be located within the residential areas to allow greater access by residents to daily needs and services.

All residential categories allow for a range of densities.

The following residential land use categories are proposed:

RN – Rural Neighborhood (up to 2 du/ac, up to 2.5 du/ac with an approved PUD)

The Rural Neighborhood category allows a maximum of 2 dwelling units per gross acre. The predominant housing type in Rural Neighborhood is detached single-family residential development at low densities. Multiple family dwellings are not appropriate. Local supporting public facility uses are also allowed in this category with appropriate buffering and setbacks.

The category also includes the following zoning districts: Rural Open Land (R-U), Residential Agricultural (R-A), Rural Estates Residential (R-E), and Public Facility (P-F).

The Rural Neighborhood land use category is the lowest residential land use category proposed and generally located at the edges of the community providing a low intensity transitional land use buffer to the natural open spaces that surround the project. Factors that determine the location of this residential category include adjacency to sensitive natural lands, viewshed exposure, topography, and distance from the community core.

The average residential gross density for areas defined as Rural Neighborhood will not exceed 2dwelling units per acre.

RL – Residential Low (up to 3.5 du/ac)

Residential Low allows a maximum of 3.5 dwelling units per gross acre. Public infrastructure and service availability affect the intensity and density within this category. The predominant housing type in Residential Low is single-family detached development. Multiple family dwelling units are not appropriate. Local supporting public facility uses are also allowed in the category with appropriate buffering and setbacks.

This category includes the following zoning districts: Rural Open Land (R-U), Residential Agricultural(R-A), Rural Estates Residential (R-E), Suburban Estates Residential (R-D), Suburban Estates Residential PUD (R-D PUD), and Public Facility (P-F).

The Residential Medium land use category is general located in the general and edge zones of the project.

The average residential density for areas defined as Residential Low will not exceed 3.5 dwelling units per gross acre.

RS – Residential Suburban (up to 8du/ac)

The Residential Suburban category allows a maximum of 8 dwelling units per gross acre. Public infrastructure and service availability affect the intensity and density within this category. The predominant housing type in Residential Suburban is single-family residential detached development. Multiple family dwelling units are not appropriate. Local supporting public facility uses are also allowed in this category with appropriate buffering and setbacks.

This category includes the following zoning districts: Rural Open Land (R-U), Residential Agricultural(R-A), Suburban Estates Residential (R-D), Rural Estates Residential ((R-E), Single Family Residential(R-1), Medium Density Residential (R-2), and Public Facility (P-F).

The Residential Suburban land use category is general located in the general zones of the project.

The average residential density for areas defined as Residential Suburban will not exceed 8 dwelling units per gross acre.

RM – Residential Medium (from 3du/ac to 14 du/ac, up to 16 du/ac with approved PUD)

Residential Medium category permits a range from 3 dwelling units per gross acre up to 14 dwelling units per gross acre. The Residential Medium category allows for single-family uses and planned unit developments. It is appropriate for single family attached, but not multiple family housing. Local supporting uses are also allowed in this category with appropriate buffering and setbacks.

This category includes the following zoning districts: Suburban Estates Residential (R-D), Single Family Residential (R-1), Medium Density Residential (R-2), Residential Urban District (RUD), and Public Facility (P-F).

The Residential Medium land use category is general located in the core and general zones of the project.

The average residential gross density for areas defined as Residential Medium will not exceed 15 dwelling units per acre.

Land Use Categories – Non-Residential

To support the proposed vision for the Planning Area, it is essential to incorporate a broad range of land use types and community support uses in the Gypsum Reclamation Concept Plan. The following describes the proposed non-residential land uses .

MUD – Mixed-Use Development

The purpose of the Mixed Use category is to encourage a diversity of compatible land uses, including a mixture of residential with commercial, office, educational, institutional and other appropriate uses. The MUD designation provides a mechanism to encourage new housing and innovative design that is less dependent on automobile transit. The MUD category is intended to create and sustain pedestrian oriented neighborhoods where local residents have convenient access to jobs, schools, shops, public facilities, transit and various services.

Approximately 94 acres of the overall project proposal consist of Mixed-Use that will create a vibrant community core.

The proposed Mixed-Use zone is located within the geographic center of the property and predominately out of the sensitive viewshed of surrounding natural areas and existing communities.

The Mixed-Use zone is intended to become the "heart and soul" of the community emphasizing a broad mix of land uses, building types, services, community facilities, recreation, open space, and residential types. It is designed to allow residents and visitors access to employment, retail, services, educational resources, and recreational facilities. Place making principles will be applied to this zone including the creation of public and civic spaces; building organized and designed to create a strong public realm, and the design of streets for people as well as automobiles.

Uses anticipated for the Mixed-Use zone include commercial and civic/institutional space for private business and non-profit entities (e.g. schools, cafes, post office, wellness/health centers, day care, spiritual center, community meeting space, performing arts theatre, amphitheater, interpretive centers, fire and police stations, library, environmental center for study, playing fields, interpretive gardens, and indoor and outdoor recreation facilities). Other commercial uses associated with this area will include restaurants, bars, financial institutions, coffee shops, galleries, art studios, personal service, live work and home-based business, and professional offices.

OP – Office Professional

The Office Professional category applies to areas where the primary uses are low intensity business and professional services and accessory service uses. With appropriate mitigation and design criteria, this category may provide a good buffer between higher intensity land uses and residential land uses. Typical uses include offices where medical, legal, financial, day care services and other business/professional services are performed. Accessory commercial uses are appropriate when associated with the principle use. Local supporting public facility uses are also allowed in this category with appropriate buffering and setbacks.

The category includes the following zoning districts: Commercial Residential Transitional (CRT), Office Professional (C-P), and Public Facility (P-F).

Up to 88.5 acres of Office Professional is proposed.

CN – Commercial Neighborhood

The Commercial Neighborhood category allows low to medium intensity retail and service commercial uses that serves primarily local area patrons, and do not include more intense general commercial characteristics. Examples include neighborhood shopping centers, banks, restaurants, hardware stores, and other similar retail and service uses. Developments should be sized to fit the surrounding neighborhood. This category also includes offices either singly or grouped as office centers with professional and business services. Local supporting public facility uses are also allowed in this category with appropriate buffering and setbacks. Commercial Neighborhood uses should be developed in nodes or centers and not configured in a "strip commercial" pattern.

The category includes the following zoning districts: Commercial Residential Transitional (CRT), Office and Professional (C-P), Local Business (C-1), and Public Facility (P-F).
Approximately 20 acres of land is proposed as Commercial Neighborhood.

CT – Commercial Tourist

The Commercial Tourist category designates areas for commercial establishments that primarily cater to tourists. The predominate land uses include resorts, hotels, time-shared condominiums, and resort residential.

The category includes the following districts: Commercial Residential Transitional (CRT), Office and Professional (C-P), Local Business (C-1), General Commercial (C-2), Limited Resort and Apartment(H-1), and Public Facility (PF).

The Commercial Tourist land use is a critical component to the achieving the overall vision of the Gypsum Reclamation Plan. Given the location and natural setting it is envisioned that the property could support a destination resort(s) of various types and configurations. Anticipated resort types include "purpose driven" resort,

spa resort, destination resort, Eco resort, medical care and recovery, etc.

Approximately 47 acres has been allocated to the Commercial Tourist land use category.

IND – Industrial

The Industrial category applies to area of industrial use and provides areas for new and existing industrial development in proximity to major transportation facilities. These uses should be reviewed for safety and aesthetic reasons when they adjoin other uses. Public facility uses are also allowed also allowed in this category with appropriate buffering and setbacks.

The category includes the following zoning districts: Designed Manufacturing (M – D), Light Industrial and Public Facility (P – F).

Approximately 40 Acres is proposed for the Industrial land use category.

BDRP – Business and Design/Research Park

The Business and Design/Research Park category applies to areas where commercial, professional or manufacturing developments are designed to insure minimal impact on surrounding areas. Major uses in this category include research and development, incubator businesses, food sales and distribution, postal and data processing centers, vehicle sales and repair (inside), and general nonhazardous warehousing. Public facility uses are also allowed in this category with appropriate buffering ands setbacks.

The category includes the following zoning districts: Office and Professional (C-P), Local Business (C1), General Commercial (C-2), Designed Manufacturing (M-D), and Public Facility (P-F).

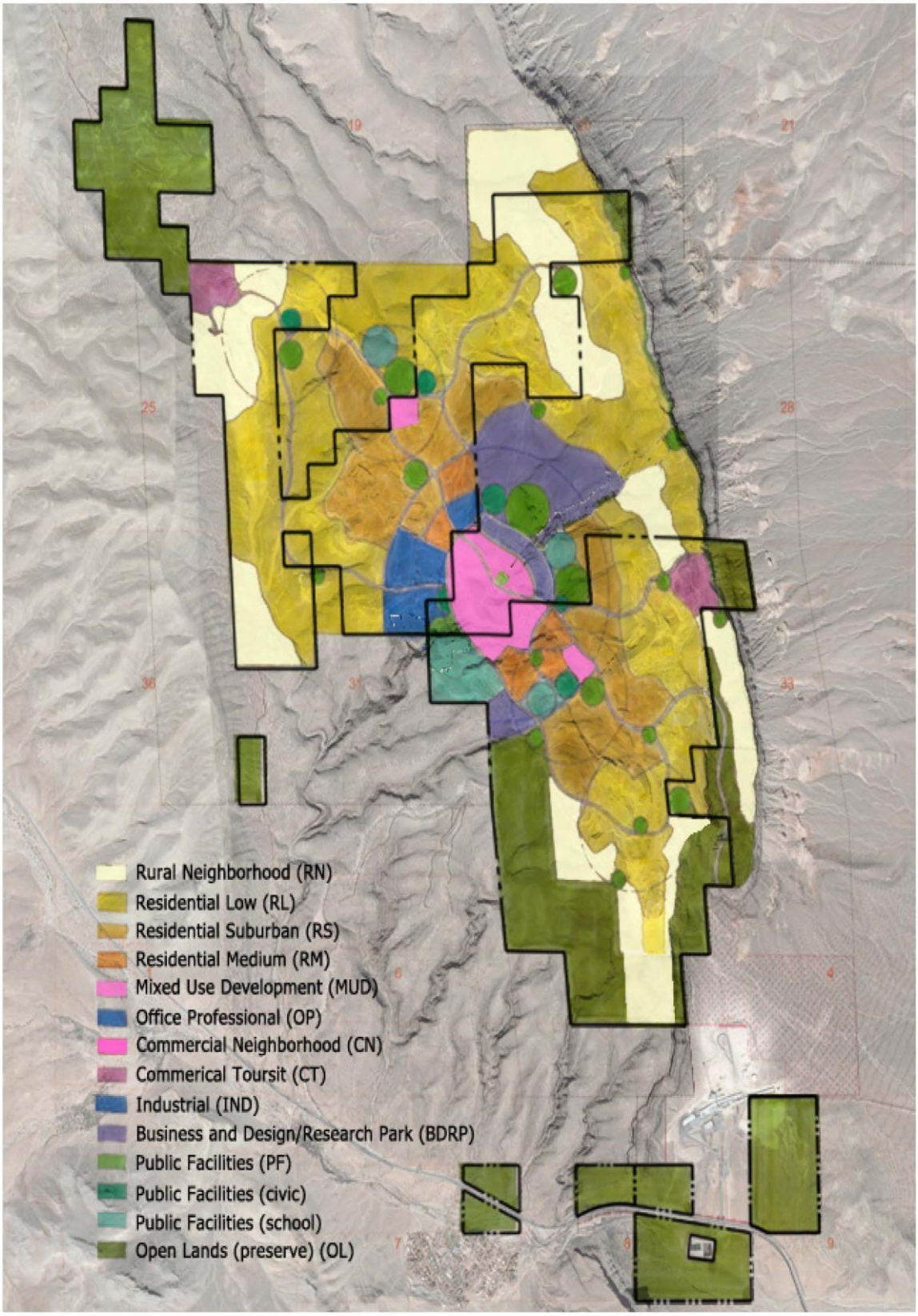
Up to 193 acres of the property has been planned for Business and Design/Research Park land uses.

PF – Public Facilities

The Public Facilities category allows public and private parks and recreational areas such as trails and easements; drainage ways and detention basins; storm water control facilities; and any large areas of permanent open land. Public Facilities include governmental building sites and complexes, police and fire facilities, non-commercial hospitals and rehabilitation sites, schools, and other uses considered public and quasi public such as libraries, clubs, religious facilities, and other public utility facilities.

Public utility facilities including but not limited to reservoirs, lift stations, pump houses, electrical substations, maintenance facilities and like uses may be located within any of the described land use categories with a Special Use Permit.

Zoning districts included in this category are: Public Facility (P-F).



CONCEPT MASTER PLAN GYPSUM RECLAMATION STUDY

NORTH NTS

JUNE 2011 CLARK COUNTY, NEVADA

LAND USE SUMMARY

GYPSUM RECLAMATION STUDY
28-Jun-11
Concept Plan Summary

Zoning District	Designation	Max Density	Max Density w/ PUD	Actual Density	Acreage	% of Total Acreage	Proposed Total Units
Rural Neighborhood	RN	2.0	2.5	1.5	535.3	15.4%	803
Residential Low	RL	3.5	N/A	3.0	968.6	27.9%	2,900
Residential Suburban	RS	8.0	10.0	6.2	436.4	12.6%	2,726
Residential Medium	RM	14.0	16.0	15.0	46.0	1.3%	690
Subtotal Residential					1,986.3	57.3%	7,119
Mixed-Use Development	MUD				91.0	2.6%	150
Office Professional	OP				88.5	2.6%	
Commercial Neighborhood	CN				20.0	0.6%	
Commercial Tourist	CT				46.0	1.3%	
Industrial	IND				40	1.2%	
Business and Design/Research Park	BDRP				193	5.6%	
Public Facilities	PF				246.8	7.1%	
Open Lands (preserve)	OL				754.8	21.8%	
Project Totals (% of Project Area)				**2.10**	**3,466.4**	**100.0%**	**7,269**
Project Totals (% of Owned Lands)				**2.95**	**2,464.0**	**100.0%**	**7,269**

Notes:
1. Schools total 123 acres (2 elem., 1 elem/middle, 1 K-12).
2. BDRP consists of a university campus along with associated R&D.
3. Commercial Tourist is intended as "Purpose Driven" Resort, Destination Resort, Spa Resort, Eco Resort, etc.
4. Public Facilities includes parks, recreational areas, trails, drainageways, easements, governmental buildings, police and worship, fire facilities, schools, libraries, places of and other utility facilities.
5. Total acreage assumes transfer of identified BLM lands to private ownership and transfer of sensitive private lands to public ownership for preservation.
6. Densities are "gross" densities.

4.6 CIRCULATION + MOBILITY

The proposed circulation framework plan creates a connective fabric that links together many of the plan's major elements, development and open space. Given the project's emphasis on environmental responsiveness, sustainability and livability, a comprehensive system of roadways and active trail system is proposed. This system of connectivity is one of the cornerstone elements of the community structure. This comprehensive, hierarchal system will allow access to each of the project's uses, amenities, and neighborhoods.

The roadway system is planned to conform to the site's topography and complimentary to the openspace system. The circulation system will consist of a wide variety of road types ensuring efficient and connected circulation throughout the community. An interconnected pedestrian and bicycle path will also be established throughout the community. This system of pathways and trials will provide both functional connectivity as well as opportunities for residents and visitors to enjoy the parks and recreational features and the natural open space resource.

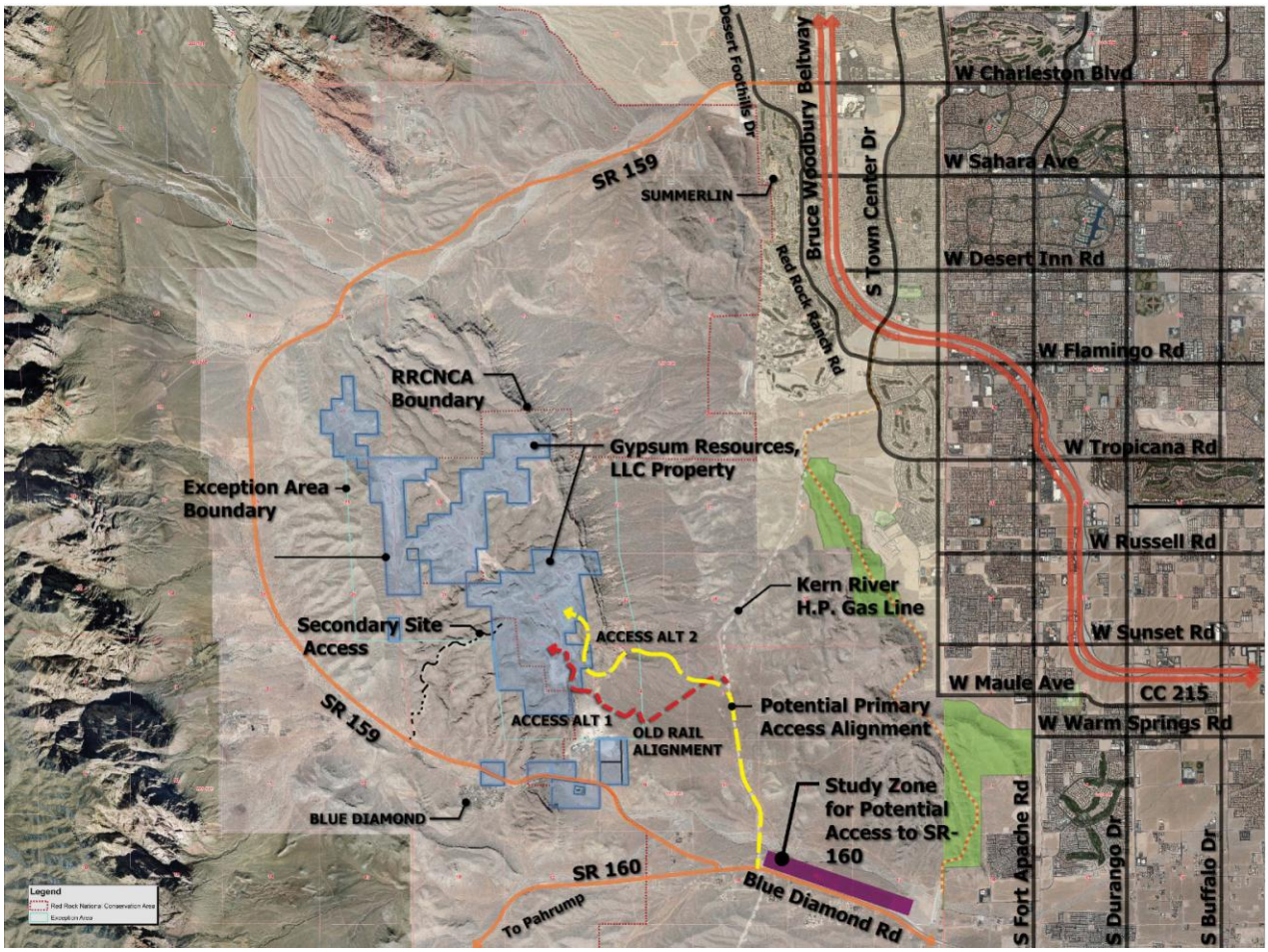
Primary Project Access

One of the primary issues facing the area is the continuing increasing traffic volume on SR 159 and the impact of traffic on the RRCNCA environment and experience. The continued growth of the area, along with anticipated growth of the region will no doubt continue to put pressure on SR 159. For these reasons and to preserve the quality of life for the surrounding communities, primary access to the project will be from the east. There will be no primary access to SR 159

Throughout the Public Outreach Process several alternative alignments for the primary access road were studied. A preliminary traffic/access study was prepared by Kimley-Horn identifying the various alignments and the carrying capacity of those roadways. The traffic dynamics in the area have changed considerably over the last few years and it is anticipated that future growth will continue to change the character of the area. For these reasons and others, three separate access alignment alternatives were evaluated and shared with the public and governmental agencies. Some of these studies mirrored previous regional transportation studies prepared by NDOT and included a " west loop bypass" that ultimately connected to the existing arterial roadway systems located in Summerlin South. These alternatives may serve to reduce the pressure of traffic congestion on SR159 in the long term. However, through the Public Outreach Process several concerns were identified and ultimately it was agreed that this project proposal would focus on an access road connecting directly to Blue Diamond Road (SR 160).

An intersection will be developed at Blue Diamond Road (SR 160) in a zone preliminarily defined as approximately 1-mile east of the intersection of SR 159 and SR 160, and west of the regional flood control detention basin. More detailed analysis and design of the actual intersection will be done in subsequent phases of planning. It is anticipated that the primary access road would be a four-lane roadway at build out. The roadway will also implement alternative hillside roadway standards to ensure it is developed with sensitivity to the environment, existing gradients, and viewshed. The primary access road will traverse the natural topography in a series of S-Curves to gain elevation as it moves up the easterly project escarpment. Grades on the primary access road will average 6 – 8%. It is anticipated that the maximum grade at the top of the road will range from 10-12% for short distances.

Only secondary and emergency access is planned from Route 159, consequently there will be no additional traffic impact on Blue Diamond or on the scenic loop. Gypsum Resources, by evaluating alternative access points to the East and upon a complete environmental and engineering study of the alternatives, in conjunction with Clark County, shall apply for BLM Right-Of-Way to provide an Easterly access for the property.



Access Map

JUNE 2011

Mobility:

The overall goal for the Gypsum Reclamation Concept Plan is to develop a comprehensive system of land use, open space, and circulation elements that minimizes the dependency on the internal combustion powered automobile that utilizes carbon based fuels – particularly those fuels derived from ancient hydrocarbons (petroleum, coal, natural gas, tar sands oil, shale oil). One major focus of the plan is to encourage alternative means of transportation and create land use relationships that make alternate forms of travel possible. Creating a comprehensive system of pedestrian and bicycle pathways is key to enhancing accessibility. Creating a comprehensive system of re-charging stations for plug-in hybrid and all electric vehicles is also a key element.

Specific transportation and mobility programs and strategies that will be incorporated as part of more detailed planning include car share programs, community bike share, ride share programs, a ~~natural gas~~ biofuel bus/van system, a network of paths and trails, and a well-designed, connected street system.

Sustainable Living Example: Regenerative Brakes

The use of hybrid or all electric vehicles with regenerative braking systems will be the standard for residents.

There is significant amount of energy required to ascend the hill (discussed elsewhere in this

document). Regenerative braking systems will recover a significant portion of the energy expended to ascend the hill, whereas obsolete friction brakes simple convert this potential energy into waste heat during the descent down the hill.

Sustainable Living Example: Electric Vehicles (Zero Emission/Waste).

Electric vehicles are the "standard" means of transportation for residents. Plug-in hybrids may be used as a bridge to all-electric vehicles or plug-in hybrids that burn biofuels or preferable a hydrogen based fuel rather than a hydrocarbon fuel.

Residents who choose not to use all-electric vehicles always have the option of taking responsibility for the carbon they dump into the atmosphere by choosing to fund the Carbon Dumping/ Transition Program. The fee for being responsible for the CO_2 waste an internal combustion engine dumps into the atmosphere is based on the amount of carbon (CO_2) the vehicle generates (how much gasoline or diesel or biodiesel it burns) and the cost to remove that CO_2 back out of the atmosphere and sequester it so it does not affect the Earth's heat balance and contribute to climate change. A typical surcharge would be $25/metric ton of CO_2 dumped into the atmosphere is a fee being considered by other nations[33]. A more considered approach would make a distinction between burning recent biomass (a renewable resource) and burning fossil fuel (ancient one-time-only hydrocarbons.)

Carbon Dumping / Transition Fees paid into the Fund will be used by those who pay into it to assist them in making the transition away from carbon-based fuels for transportation.

From a previous example, let's assume the access road into the community is about 5 miles (one way). Assume the resident utilizes an internal combustion engine car that burns gasoline (ancient hydrocarbon) and the vehicle burns one gallon for each 25 miles traveled in an urban settings (i.e. 25 mpg).

Each round trip up and down the Blue Diamond Hill access road would be 10 miles or 0.4 gallons.

Each gallon of gasoline, when burned releases 19 pounds of CO_2 into the common atmosphere.[34] (This is 0.00892 metric tons of CO_2 per gallon of gasoline. 1 metric ton = 1000 kg = 2200 pounds)

This Carbon Dumping / Transition Fee for driving just the access road would be less than a dime round trip up the hill and down @ $25 / metric ton. For two trips a day, or two cars each one trip, the monthly Carbon Dumping / Transition Fee would be around $40. (~$450 / year). Residents would be reimbursed for all Carbon Dumping / Transition Fees previously paid when they purchase a new or used electric or plug-in hybrid vehicle.

Secondary Access:

Secondary access to the project (e.g. emergency vehicle access, interim construction access, maintenance access, etc.) will be provided via the existing historical mine haul road located to the west of the project. This historic mine haul road currently provides access to the site and is accessible through a controlled gate structure at SR 159 approximately 1 mile west of Blue Diamond. This roadway in its current configuration and status provides adequate egress for pre-development activities. It is anticipated that improvements would need to be made in order to meet public works and life safety standards. Anticipated modifications include minor re-alignment of curve radii and surface stabilization.

4.7 PHASING PLAN

The Gypsum Reclamation Plan will be implemented on a phased basis. Development of infrastructure and associated land uses will be determined by market demand, required supporting infrastructure and public facilities, and as approved by the Clark County Board of Commissioners as defined in the approved development agreement.

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[33] For example, Australia is considering a "carbon tax.". see: http://www.carbontax.net.au/category/what-is-the-carbon-tax/

[34] Green Power Equivalency Calculator Methodologies, see: http://www.epa.gov/greenpower/pubs/calcmeth.htm also, http://www.stewartmarion.com/carbon-footprint/html/carbon-footprint-car.html

Given that initial phase infrastructure development will generally be coming from the southeast, it is anticipated that the early phases of project development will begin in the southern portions of the property.

Based on anticipated market conditions, the initial phases of development are proposed to begin by 2013. The development will proceed in an orderly and contiguous pattern with subsequent phases beginning approximately 12 months apart.

4.8 PLAN FLEXIBILITY

The generalized Conceptual Framework Plan depicts the general allocation and location of land use, open space, and circulation patterns. Actual land uses and specific locations will be refined subject to future phase entitlement studies and reports, planning and technical considerations, market and economic factors, and more detailed analysis and design. For these and other reasons, it is assumed for the Concept Plan that the land use allocations maintain a flexibility of up to 20% of the acreage in each non-residential category and 10% of the acreage in each residential land use category. (Not sure what the implications of this caveat is)

5.0 COMMUNITY SERVICES

5.1 POLICE SERVICE

The Metropolitan Police Department provides police service for the area and will ultimately provide police services for the Study Area and the project. The Metro Resident Officer Program currently services rural communities in the area as well.

The proposed development will increase demand for police services and it is likely that a police station or at a minimum a new substation will be required as part of the ultimate development build-out.

5.2 FIRE SERVICE

The Clark County Fire Department provides fire protection for the Northwest Clark County including the Study Area, the project area, and surrounding communities. Stations responsible for responding to medical and fire emergencies are currently located in Blue Diamond. The Blue Diamond Volunteer Fire Department mans Fire Station 80.

It is assumed that development of the proposed project will result in additional Fire/EMS apparatus and fire service facilities being provided.

Fire protection services for the project during development will be provided as required by Clark County Ordinance and the currently adopted Uniform Fire Code.

5.3 WATER SERVICE

The developer will be responsible for providing new connections to the existing water, sewer and power infrastructure in the Las Vegas Valley. Because of the limited capacity that currently exists in the area, new offsite mains and feeders will be needed to support the project. These new facilities will be provided in accordance with the utility provider's service rules and will, as is normal for a master plan development, be provided at the developer's cost with no financial impact on the general public.

> Because this Reclamation / Development project is intended to result in a sustainable community, the energy required to pump the water uphill will be provided by the community infrastructure. Solar PV panels installed on the site will be used to generate the power for pumping the water the 1500 feet from its source at the bottom of the hill to the end users at the top.
>
> The integration of the solar PV system with the water system invites some interesting synergism that needs to be further investigated. Normally it's not a good thing to have pump water uphill, but when the

"total system" includes renewable energy such as solar or wind, sources are only generating power at certain periods of time, often unpredictable times, some methods of storing excess energy is required. Batteries are one approach, compressed air is another method of energy storage, and pumping water up to a holding reservoir with the excess power during the day and then releasing it at night to generate power when the sun isn't shining is still another proven approach to energy storage.

We will "run some numbers" and assess the practicality of integrating the water and power subsystems.

One of the fundamental concerns of course is related to the fact that this is the desert trying to support more humans than is sustainable. How does Blue Diamond Hill expect to overcome this fundamental issue? Where is the water for Blue Diamond supposed to come from in a sustainable manner? Much to be discussed here because this is a potential show stopper for what otherwise could be an interesting reclamation/development project. Water is required to support human life – maybe not as much as we currently think – particularly if it is more rigorously managed and reused but nevertheless, a certain amount of "consumption" may be inevitable – or not.

Again it is appropriate to "run some numbers" and see how far the 5-6 inches of annual rainfall over 2000 acres can take this community – recognizing that non-human life is also involved on this property.

Off-Site Facilities

A conceptual plan to provide potable water service to the project is presented on the following diagram (Option 4). Potable water is planned to be supplied from the Las Vegas Valley Water District Facilities. Initial Service will be from the existing Meranto Reservoir (2975) and 3090 Pump Station located on Hualapai south of Blue Diamond Road. This will transport potable water up a series of reservoir and pump stations through a 36" – 42" Mainline running primarily in the Blue Diamond Corridor and ultimately navigating an 1,100' Elevation Gain through the primary access road to the site.

Off-Site Reservoirs and Pumps:

Future 3090 Reservoir and 3435 Pump Station (3 Zone Lift)
Future 3435 Reservoir and 3780 Pump Station (3 Zone Lift)
Future 3780 Reservoir and 4355 Pump Station (High Lift)

This system of Reservoirs and Lifts and transmission lines would transport the water to an Onsite 4355 Reservoir.

On-Site Facilities

The Project site Developable Areas range in Elevation from approximately 3,900 to just under 5,000 feet. As a result of the developable elevation difference, the project was divided into 10 standard, 115 foot LVVWD pressure zones, based on the existing LVVWD system. It is assumed that the potable water transmission system would be constructed in the style of "West Summerlin", in that pump stations would be allowed to pump up-slope as much as three pressure zones to reservoirs, with the interim zones served by pressure reducing valves (PRV's). Each zone would have the required redundancy in the form of two water sources to meet LVVWD requirements. The Pressure Zones are 5045, 4930, 4815, 4700, 4585, 4470, 4355, 4240, 4125, and 4010.

Fire Flow Criteria

Gypsum Resources plan for development calls for primarily residential construction with light to medium commercial and potentially light industrial uses that will drive fire flows. With the potential for larger homes with fire flows in excess of 1,500 gpm the design and reservoir storage calculations are assumed to be 3,000 gpm; which should meet or exceed any sprinkled structure fire flow demand in the developable area.

5.4 WASTEWATER SERVICE

Gypsum Resources is committed to pursuing economically viable conservation measures. One such measure will be re-using sanitary sewer effluent. Sewer effluent will be processed in a self-contained re-use plant and the resulting gray water will be utilized to irrigate landscaped areas, thereby reducing demands on both the Las Vegas Valley Water District's and the Clark County Sanitation District's infrastructure. The use of gray water is expected to save an estimated 600 million gallons of water annually.

Again because this Reclamation/Development project is focused on sustainable living waste water becomes another opportunity. Note that in theory the energy required to pump the water up the hill could be recovered when it is released to go downhill. But on site use of treated water (not allowing it flow to the bottom of the hill) is certainly another consideration. The Las Vegas Valley water district takes pride in the fact that the water used by valley residents is used as many as three times before it ends up in Lake Mead and flows down the Colorado River.

Off-Site Facilities

A conceptual plan to provide wastewater to Blue Diamond Hill is presented in the following diagram (Exhibit 1). There are no public sewer systems in the area; therefore Gypsum Resources has studied several alternatives and access alignments for wastewater treatment. All scenarios assume service will fall under the jurisdiction of the Clark County Water Reclamation District (CCWRD). Accordingly, the wastewater generation of the Gypsum Resources Site was determined based on the same land use assumptions as the water system, but using the CCWRD Design and Construction Standards, Gypsum Resources assumes that wastewater treatment will begin with an onsite treatment facility designed for re-use demands on-site including; construction water, dust control, fire protection and park/open space uses. This system would be followed by an off-site sewer on Blue Diamond Road that connects into the Mountains Edge and/or Rhodes Ranch systems near Durango or Ft. Apache in SR160 and then finally far into the future this connection will route flows into the future Enterprise Water Reclamation Center planned for the future based on regional development.

On-Site Sewer

The topography of the site slopes generally south and west. Due to the site topography it is assumed that at least one onsite lift station will be required to serve the project. According to CCWRD standards, the lift station would be designed as a public facility for Operation by the CCWRD. Additional lift stations may be required depending on land use and roadway alignments.

Design solutions will be addressed to meet CCWRD standards for slope and velocity. These will be identified during the Wastewater Master Planning process and included in the Public Facility Needs Assessment.

5.5 DRAINAGE AND FLOOD CONTROL

The potential for pollutants entering groundwater sources from a mixed-use residential project is lower than the potential risk that currently exists with mining and the associated industrial operations. Storm water runoff will be controlled on site to ensure that the quantity and velocity of flow leaving the site can be safely accommodated in the natural and manmade downstream storm drainage conveyance systems. If permitted, it may be necessary to capture and keep 100% of the storm water falling on the site. The Clark County Regional Flood Control District (CCRFCD) sets strict design criteria to ensure that downstream properties and facilities are not adversely impacted by new development. The project will met or exceed the CCRFCD design criteria.

5.6 SCHOOLS

Education is one of the cornerstones of the community vision for the Gypsum Reclamation Plan. Collective learning is obviously one the most important human endeavors – passing the accumulated knowledge and wisdom of past generations to the next generation – one behavior that uniquely characterizes homo sapiens among the

known 1.9 million living species on the planet –something we humans can be quite good at when we give it a place of value / importance. We know now that the first five years of a child life are some of the most important and formative years of its life. A healthy, stress free, environment that allows youth to experience and interact with the local bioregion is important to instill in them a respect for all life that in turn will help them become more conscious adults.

The Conceptual Framework Plan incorporates a variety of school sites distributed throughout the community. The plan anticipates a variety of school types including public and private pre-school, elementary, middle, and high school along with adult education, higher education institutions, and specialty education facilities.

The location, number, and type of schools identified in the Conceptual Framework Plan are preliminary and intended to be guide towards more detailed, comprehensive analysis of the educational uses ultimately provided within the community. Many factors will determine the ultimate school facilities needs (e.g. housing types, percentage of age targeted/age qualified housing, private institutions, etc.). The developer will work closely with the Clark County School District to identify the facility needs and location within the plan. The ultimate demand for school services for the project will be determined during the Specific Plan, Public Facilities Needs Assessment, and Development Agreement phases of the application utilizing the using approved student generation rates.

Until such time the construction of schools in the community is warranted, children will be transported to the nearest school in the Las Vegas Valley. Clark County School District will determine the appropriate schools that are best suited to the projects easterly access. There would be no impact on the Blue Diamond School.

Life- long learning was mentioned earlier in this plan. It is a part of the overall education plan. Providing an opportunity for elders to become mentors and respected sources of life lessons can also be a key part of this eventual community.

6.0 GOING FORWARD

6.1 OUR PHILOSOPHY

Clark County has the opportunity to partner with Gypsum Resources, LLC to reclaim a mining site and build a new master-planned community that will become the standard for the Southwest. This unique Reclamation / Development Project's ~~development's~~ success will be the result of following these core philosophies:

- Insisting on Helping Heal the Earth at this Abandoned Mining Site
- Insisting on Creating a Sustainable Community in a Desert Bioregion
- Working Collaboratively with all Human (and Non-Human) Stakeholders
- Designing in a Sustainable Life Style Using a Multi-Disciplinary Approach
- Studying the Detail and Creating the Integrated Whole
- Producing Feasible Plans for a Phased Approach
- Confirming Progress through Measured Outcomes at the End of Each Phase
- Collaborating with the Community for the Mutual Benefit of All Stakeholders

In creating this special place, adaptation of a new ethic of sustainability and flexibility "to think outside the box" will be key in ensuring the principals and designs envisioned are followed and improved upon. At the same time, as the project proceeds, the community character and regional beauty will be protected by Master Community Covenants, Conditions and Restrictions. These CC&R's will be in place to maintain the community's open spaces, parks, trails, fundamental design features and dedication to sustainable living in a finite world. ~~development.~~

APPENDIX A Mining Act of 1872 (Approved, May 10, 1872)

Several amendments to this law have been put into effect since it's passage, such as the Mineral Leasing Act of 1920, the Mineral Materials Act of 1947 and the Federal Land Policy and Management Act of 1976, among others.

Based on the injured Earth at this spent mining site, it is obvious that the 140 year old mining law needs to be update to reflect the Real World.

General **Mining Act** of **1872** - Wikipedia, the free encyclopedia
*en.wikipedia.org/wiki/General_**Mining_Act**_of_**1872***
The General **Mining Act** of **1872** is a United States federal law that authorizes and governs prospecting and mining for economic minerals, such as gold, **...**
Western miners' codes - Mining legislation before 1872 - The Mining Law of 1872

1872 Mining Law & Summary - ICMJ's Prospecting and Mining Journal
*www.icmj.com/**1872-mining-law**-summary.php*
See Volume 30 of the United States Code of Federal Regulations for the complete **1872 Mining Law**. §21. Mineral lands reserved. In all cases lands valuable for **...**

Mining Law
*www.blm.gov/wo/st/en/info/regulations/**mining**_claims.html*
Mar 28, 2011 – This includes the General **Mining Law** of **1872**, as amended; those portions of the Federal Land Policy and Management Act of 1976, **...**

1872 Mining Law
*www.montanariver**act**ion.org/**1872.mining.law**.html*
Congress needs to reform the antiquated Federal **Mining Law** of **1872**. Mining companies have removed billions of dollars worth of gold, silver and other **...**

Two Cheers for the **1872 Mining Law**
www.cato.org/pubs/pas/pa-300.html
by R Gordon - Cited by 8 - Related articles
The **Mining Law** of **1872** allows U.S. citizens to claim land for mining purposes in units of 20 acres as long as $100 per year is spent on the land. The law also **...**

1872 Mining Law - General Mining Act of 1872
*goldplacer.com/**1872MiningLaw**.htm*
Have you read the **1872 Mining Law**? This is the text of the General Mining Act of 1872, passed on May 10th, 1872. Discuss the **1872 Mining Law** on our Forums **...**

EARTHWORKS | General **Mining Law** of **1872**
www.earthworksaction.org › Issues
The **1872 Mining Law** was signed into law by President Ulysses S. Grant. It was passed to promote the development and settlement of publicly-owned lands in **...**

A **Mining Law** Whose Time Has Passed - NYTimes.com
*www.nytimes.com/2012/.../a-**mining-law**-whose-time-has-passed.htm...*
Jan 11, 2012 – IN **1872**, President Ulysses S. Grant signed a **mining law** to spur the development of the West by giving hard-rock mining precedence over **...**

Pew Campaign for Responsible **Mining** - Pew Environment Group
www.pewenvironment.org › Campaigns
Mining of hardrock minerals—gold, uranium and other metals—on U.S. public lands is governed by the General **Mining Law** of **1872**. Virtually unchanged since **...**

Tell Congress: Update the **Mining Law** of **1872**!
***act**.credo**act**ion.com/campaign/**1872**/*
Apr 9, 2012 – Our country's 140-year-old **mining law** is a relic that today represents a massive giveaway to mining companies. The law rips taxpayers off to **...**

APPENDIX B "Economics" Primer

Homo sapiens invented/created the concept of economics.

Homo sapiens have evolved to possess tremendous abilities, capabilities, range of behavior, and free will – so broad a range, that if these possible behaviors/actions are not constrained (hopefully voluntarily) it can be detrimental to the general well being of the species as well as to all of life on the planet.

Being an aware, conscious, rationale species, homo sapiens observed that cooperation and certain self-constraint will result in individual and collective benefits. So 'social contracts' that define "acceptable or preferred behavior" have been created throughout human history - ranging from superstitions, taboos, traditions, customs, religions, common laws, to forms of self – government and "economics" – all intended to influence human behavior in a positive life-supporting manner – all intended to incorporate lessons learned from human history.

> John Morton in "The Economic Way of Thinking" states:
> [Economics].... is a unique way of thinking that offers insights into the seemingly chaotic confusion of human behavior in a world of different values, resources, and cultures.
>
> We could reframe this as:
> [Economics].... is a way (one of many ways) of thinking for the purpose of making choices that offers some stability into the seemingly chaotic confusion of human behavior in a finite world of 10 million interdependent living species, including, one species, homo sapiens, who now number over 7 billion souls with different values, life experiences, and access to earth's common resources. In addition to "economics," humans also use ethics, religion, customs, etc. to help make choices.
>
> Unfortunately the economic theories derived by Smith/Keynes, et. al. in the 1800s are based on an infinite world premise and are totally inadequate for the finite Real World we are aware of today. These obsolete anthropocentric economic principles are currently influencing us to make unsustainable choices in our human behavior.

Note the emphasis on human behavior. According to John Maynard Keynes,

> [Economics] .... is a method rather than a doctrine, an apparatus of the mind, a technique [or way] of thinking [intended to help humans]... draw correct conclusions." [1]
>
> [Economics] .... assumes that individuals maximize welfare (wellbeing/interests/happiness) as they conceive it, whether they be selfish, altruistic, loyal, spiteful, or masochistic. Their behavior (i.e choice) is forward looking, based on information they understand and believe, based on their life experiences, based on current fears, influenced by observing others, and it is also assumed to be consistent over time (although we know that human behavior changes as incentives change).[2]
>
> ... individuals choose; those individual choices drive society. According to Paul Heyne, "All social phenomena emerge from the choices individuals make in response to expected benefits and costs to themselves."[3] This is obviously a fallacious over-reaching statement because we observe "heroics" as a real social phenomenon that does not conform to this formula. For example, parents/teachers/first responders/soldiers (and even most voters) make choices that are not in response to expected benefits and costs to themselves but rather in response to the wellbeing of future generations, the greater good, and moral principles – choices that are often to the detriment of their own safety and wellbeing.
>
> Economics is really about incentives. Economic theory is based on the idea that changes in incentives influence behavior in predictable ways. Incentives are nothing more than changes in costs and benefits, which in turn influence choices.
>
> According to Steven Landsburg, "Most of economics can be summarized in four words: 'People respond to incentives.' The rest is commentary. [4]