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2025 SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW JANUARY, 2026

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SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

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I. EXECUTIVE SUMMARY

The Southern Nevada Strong (“SNS”) *Underutilized Lands Inventory* (“the ULI study”, “study” or “the ULI”) report identifies 78,285 acres of vacant and “underutilized” land within the urbanized portions of Clark County including the Las Vegas Valley, Boulder City, and Mesquite. This inventory is intended to inform the *Southern Nevada Strong 2050* regional plan. RCG Economics (RCG's) technical review examines the ULI's methodology and identifies critical market factors not addressed in the study's scope that are necessary for assessing whether the land inventory is helpful for determining how much land is available for development.

RCG's findings indicate that, while the ULI provides valuable land inventory data, translating this information into a tool that the real estate industry and the economic development authorities can effectively and practically use requires additional market/economic-based research and analysis.

What is the ULI Study Measuring?

As noted above, ULI prepared by ECONorthwest for the SNS and commissioned by the Regional Transportation Commission of Southern Nevada (“RTC”), identifies approximately 78,000 acres of vacant and underutilized land within urbanized Clark County (aka Las Vegas Valley). The ULI study separately measured two distinct categories:

1. 69,300 acres of vacant land, based on land use codes and physical characteristics.
2. 8,985 acres of underutilized land, identifies using improvement-to-land value ratios and ranked by a stakeholder-weighted composite index emphasizing planning preferences.

The ULI Study's overall estimate of vacant land is reasonable, when compared to research conducted previously by RCG¹ as seen in Table I-1. However, the 69,300 acres of vacant land noted in the ULI may overestimate the amount of developable vacant land when additional factors are taken into account. These additional factors include lesser slopes, distance to roads, distance to existing development, and private ownership. These filters are all key considerations when determining land developability, which is a critical goal of the ULI Study and SNS' planning efforts.

Overall, the study provides an inventory showing where vacant land is located and what planning characteristics that land may have. It does not assess whether that land can feasibly support development or when it might be available.

¹ State of Nevada AB 213 Housing Reports 2024.
<https://housing.nv.gov/uploadedFiles/housingnewnv.gov/Content/Programs/HDB/AB213.pdf>.

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Table I-1: RCG Economics Existing Research on Estimates of Vacant Land

Category	Parcel Filter Description	1	6
Topography	Average Slope of Parcel	<12%	<7%
Access	Nearest Distance to Freeway	<10 miles	<5 miles
Access	Nearest Distance to Major Street	<5 miles	<3/4 mile
Ownership	Includes Federally Owned Parcels w/in BLM Disposal Boundary	Yes	No
Ownership	Includes Municipally Owned Parcels	Yes	No
Infrastructure Proxy	Nearest Distance to Developed Parcel	N/A	<1/4 mile
Total Vacant Acres (LV Valley, Boulder City, Mesquite)		90,053	22,300

Source: State of Nevada AB 213 Housing Reports, 2024.

How Is the ULI Measuring Vacant and Underutilized Land?

Vacant Land: The ULI study uses objective criteria to identify vacant land. These criteria include: Clark County Assessor land use codes, minimum size thresholds (5,000 sq. ft. for residential, 0.5 acres for employment), and excluding land with slopes exceeding 15 percent (employment) or 25 percent (residential). The authors of the study also conducted a manual review and corrected over 5,800 parcels, the ULI identifies 69,300 acres as vacant.

Underutilized Developed Land: The ULI uses both objective data, as well as subjective rankings based on planning preferences to estimate “underutilized lands”. Per the ULI, properties must meet both improvement-to-land value ratio thresholds (0.5 for residential, 0.85 for employment), determined using assessor data, and site coverage ratio thresholds (40 percent for employment, 50 percent for residential). These parcels were then scored using a composite index weighing seven factors found in Table I-2 and ranked from low to high underutilization as determined by the ULI study’s ranking and weights scale. The ULI identifies 8,985 developed acres as underutilized.

Table I-2: Underutilization Scoring Factors and Composite Index Weighting

Access to High Frequency Transit (10%)	Job and Population Density (30%)
CDC Social Vulnerability Index (5%)	Matching Planned Land Use Type (10%)
Developed Share of Land (20%)	Walk Score (5%)
Economic Development Areas (20%)	

Source: Southern Nevada Strong Underutilized Lands Inventory: Technical Methodology Report.

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Other Market Factors That Should Be Considered?

RCG's review identified four critical market/economic factors outside the ULI's public planning-focused approach that are necessary for assessing practical real estate and economic development potential in the Las Vegas Valley:

1. **Utility Infrastructure:** The ULI does not assess whether identified parcels have adequate utility infrastructure to support development, and by extension, regional economic development. Understanding infrastructure is essential for distinguishing near-term developable land from parcels requiring expensive upgrades and that potentially cost millions of dollars and multi-year timelines.
2. **Market Economics:** The ULI methodology emphasizes planning preferences without assessing financial feasibility of the site such as development costs, regulatory burdens, and timelines. Understanding these economic factors is necessary to assess which parcels are likely to support development given market conditions.
3. **Development Timing:** The ULI provides a 2024 snapshot but does not analyze how long the identified supply of developable land in the Las Vegas Valley will last given market absorption rates, or whether land supply adequately spans the 2050 planning horizon. A static inventory is unable to indicate whether identified land can accommodate growth over 25 years without accounting for absorption rates, market cycles, and infrastructure coordination timelines.
4. **Geographic Detail:** The ULI does not report vacant land by jurisdiction or distinguish land inside versus outside the Southern Nevada Public Land Management Act ("SNPLMA") disposal boundary. This geographic information is necessary to assess whether adequate supply exists within specific locations.

What Additional Analysis Do Key Stakeholders Require?

The ULI provides valuable inventory data. However, additional market/economic-based analysis and data are needed to enable key members of the infrastructure providers, local jurisdictions, business community and economic development agencies to most effectively address their specific decision-making needs. For example:

- **Infrastructure Providers** would need assessments to identify which areas need investment to enable development.
- **Local Jurisdictions** need entity-specific land totals and adequacy assessment relative to their projected growth shares, enabling local planning and infrastructure coordination.
- **The Business Community** needs analyses incorporating infrastructure readiness, regulatory considerations, and market economics to identify parcels where conditions align for near-term feasibility.

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- **Economic Development Agencies** need accurate employment land estimates categorized by infrastructure characteristics (utilities, size, transportation access) to determine which sites can accommodate target industries like advanced manufacturing, healthcare and logistics operations.

What Conclusions Are These General Results Adequate/Inadequate For?

The results from the ULI Study are **potentially helpful for**:

- General discussions about existing development patterns
- Showing where vacant land is located geographically
- Identifying areas where planning goals and current conditions diverge
- Starting point requiring additional analysis

However, without additional analysis, **the ULI Study results are not sufficiently helpful for**:

- Determining if land supply is adequate for 25-year growth
- Addressing housing affordability
- Guiding investment decisions

What Matters?

The ULI study matters because: It provides important general base-line inventory data that informs regional planning decisions affecting future residents, influences billions of dollars in development and infrastructure investment, and contributes to discussions with long-term consequences for housing affordability and regional competitiveness.

RCG's findings matter because: Understanding what additional market-based analysis is needed to complement the ULI's inventory data helps ensure that decisions rest on complete and real-world information, data and assumptions. Without further analysis addressing infrastructure limitations, economic development priorities, development timing questions, and geographic distribution, several risks emerge:

- **Regional economic competitiveness:** Without employment land categorized by infrastructure characteristics, economic development efforts in Southern Nevada may not adequately identify the best sites to meeting region's target industry requirements and goals, especially in the context of the land needed for housing, aka the jobs-housing balance challenge.
- **Infrastructure investment:** Without utility availability/capacity assessments, infrastructure planning may not align investments with areas that can feasibly support real estate development.
- **Regional growth planning:** Without an accurate understanding of geographic details, such as slope, regarding land developability and absorption analysis, long-term growth projections may not reflect practical land supply limits.

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Summary of RCG's Findings

The core question of RCG's review is: Does the ULI study provide the information needed to determine whether the identified land can feasibly support development and when it might be available. This is necessary to determine if the supply of land is sufficient to accommodate Southern Nevada's projected population and employment growth over the next 25 years. Accordingly, our review has three goals:

1. Assess what the ULI methodology reveals about regional land inventory and where technical parameters affect interpretation of findings.
2. Identify market factors requiring further, more detailed analysis to translate inventory data into practical development analyses, such as utility infrastructure, development economics, regulatory considerations, and time-based dynamics.
3. Connect findings to practical application for regional growth discussions, infrastructure investment, and stakeholder decision-making.

Our approach is not a critique of study authors' competence, nor advocacy for predetermined results. Rather, it is a technical assessment identifying what additional market-based analysis would complement the ULI's inventory data to provide complete information for evidence-based decisions.

Several factors critical to assessing practical development limits lie outside the ULI study's scope:

Technical Considerations:

- Slope thresholds (12 percent vs. reported 15 percent) may not align with industry standards.
- Partial deduction approach can create parcels too fragmented for development.
- Underutilized land rankings reflect stakeholder planning preferences, not market feasibility predictions.
- Improvement-to-land ratios can classify properties as "underutilized" based on building age rather than genuine redevelopment potential.

Missing Market Analysis:

- No infrastructure assessments distinguishing ready sites from those needing major investment.
- No market economic analysis of development feasibility, costs, or timing.
- No absorption rate projections over the 25-year planning horizon.
- No geographic reporting by jurisdiction or inside/outside SNPLMA boundary.

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Key Recommendations

Before determining whether adequate land exists within the current SNPLMA boundary to accommodate the projected growth by 2050, Southern Nevada's policy makers and the business community need additional comprehensive analyses that address the identified methodological gaps in the ULI study:

1. **Utility Infrastructure-Constrained Supply Assessment:** Identify which parcels have adequate water, sewer, and electric infrastructure versus those requiring major upgrades. Quantify investment requirements and timelines. Distinguish near-term developable land from long-term theoretical supply.
2. **Realistic Absorption Analysis:** Project land consumption rates based on historical patterns. Model supply adequacy over 2050 horizon under various growth scenarios. Assess whether land supply can accommodate projected demand timing.
3. **Employment Land Categorization:** Match available employment land to target industry requirements (utilities, size, access). Separate analysis by land use type (industrial, office, retail).
4. **Geographic and Jurisdictional Analysis:** Report vacant and underutilized land totals by jurisdiction.. Enable local jurisdictions to assess adequacy for projected growth.

Conclusion

The ULI inventory tells us where land is located. Answering whether that land, available within the current boundaries established by the SNPLMA, can practically accommodate 800,000 new residents through 2050 requires combining this inventory data with utility infrastructure assessments, market economic analysis, realistic absorption projections, and geographic detail.

For development and investment decisions: Understanding which sites have infrastructure, reasonable regulatory pathways, and financial feasibility requires analysis beyond the planning-preference rankings the study provides.

Without supplementary analyses, major investment decisions rest on incomplete information about practical development limits over the planning horizon.

Methodological Note:

This review is based on the published ULI Technical Methodology Report, publicly available GIS data, county assessor records, and comparisons with established development industry and economic development standards and planning literature. Where the ULI study would benefit from additional transparency about specific methodological choices or data sources, we note these areas and explain why additional research and analysis would enhance the ULI's utility.

II. VACANT LAND METHODOLOGY — KEY FINDINGS

The ULI study identifies vacant land using Clark County Assessor land use codes and applies physical constraint filters (slopes, floodplains) and minimum size thresholds. After manual review correcting over 5,800 parcels, the study identifies 69,300 acres as vacant.

The study's estimate of vacant land is within reason when compared to research conducted previously by RCG² as shown in Table II-1. However, the 69,300 acres of vacant land may overestimate the amount of developable vacant land when additional factors are taken into account. These additional factors include parcel slopes, distance to roads, distance to existing development, and private ownership. These filters are all key considerations when determining land developability, which is a critical goal of the ULI Study and SNS' planning efforts.

Overall, the study provides an inventory showing where vacant land is located and what planning characteristics that land may have. It does not assess whether that land can feasibly support development or when it might be available.

Table II-1: RCG Economics Existing Research on Estimates of Vacant Land

Category	Parcel Filter Description	1	6
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Infrastructure Proxy	Nearest Distance to Developed Parcel	N/A	<1/4 mile
Total Vacant Acres (LV Valley, Boulder City, Mesquite)		90,053	22,300

Source: State of Nevada AB 213 Housing Reports, 2024.

A. Key Technical Issues

Slope Thresholds and Fragmentation

The ULI study's slope analysis raises several questions about threshold selection and practical applications. Industry standards establish that non-residential development typically becomes prohibitively expensive above 12 percent slope—a threshold documented in planning literature dating back to 1967.

² State of Nevada AB 213 Housing Reports 2024.

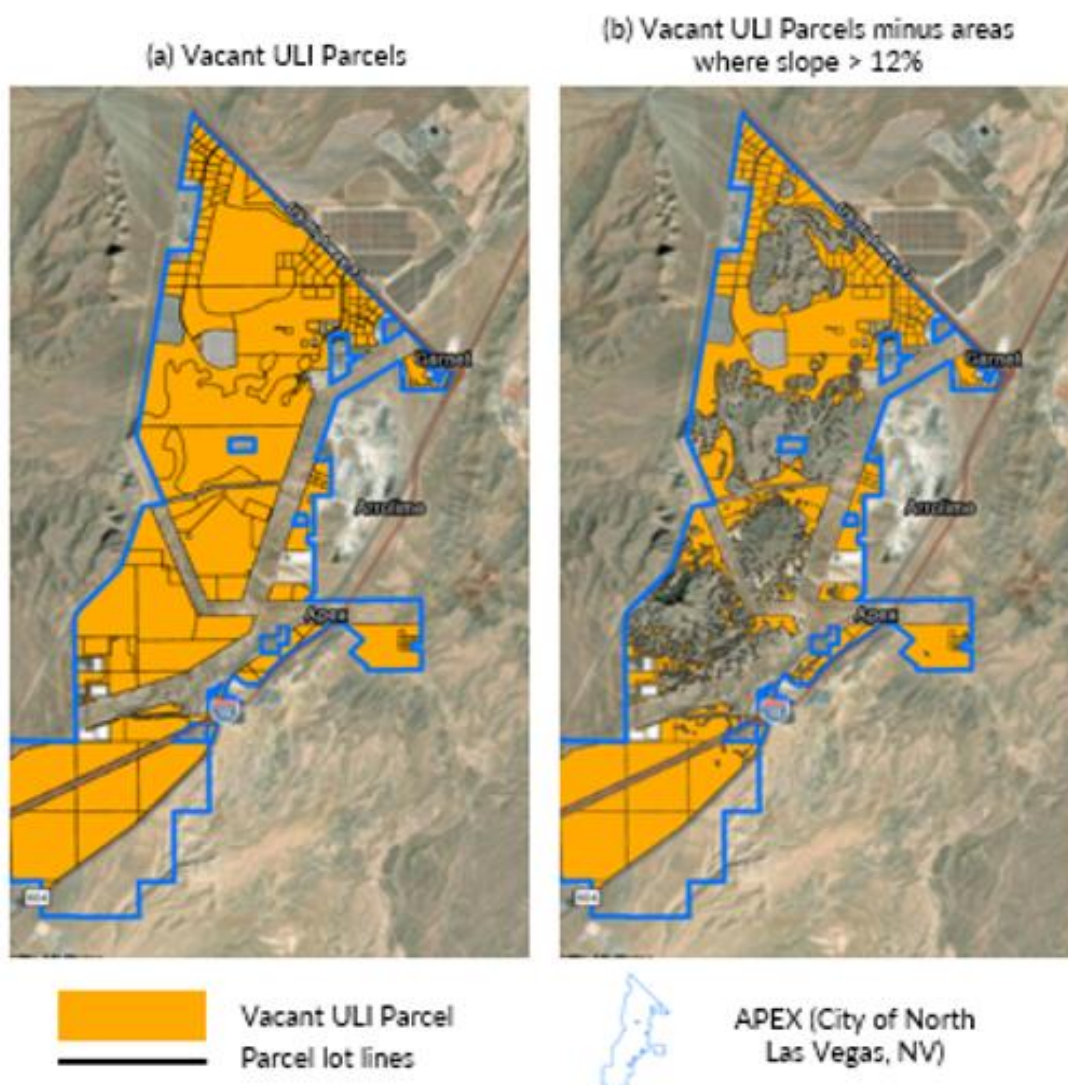
<https://housing.nv.gov/uploadedFiles/housingnewnv.gov/Content/Programs/HDB/AB213.pdf>.

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The ULI reports using 15 percent for employment land, but GISMO (the cited data source) categorizes slopes as: <12 percent, 12-25 percent, 25-50 percent, or >50 percent. The 15 percent threshold does not match these available categories. This suggests either a data discrepancy or reporting inconsistency. More practically significant: the methodology deducts steep portions of parcels rather than excluding entire parcels. This potentially creates fragmented remnants that look available on paper but may be too small or oddly-configured for actual development. The study's maps color entire parcels as developable even though only portions of many parcels are considered pragmatically developable. This can visually overstate the amount of readily developable land.

As shown in Figure II-1, this approach introduces a significant practical limitation. The “developable” parcel areas are potentially fragmented, particularly smaller remnants, raising uncertainty as to whether these remnants can feasibly support development. While large parcels may still contain areas that are large enough to support development, this assumption does not hold up well for smaller parcels. Notably, the ULI dataset includes commercial parcels as small as 0.5 acres, for which even minor fragmentation could render development infeasible. To further illustrate this issue, several examples are included in Exhibits 4, 5 and 6 found in the Appendix.

Figure II-1: Example of ULI Study Slope Computation and Mapping Compared to Alternative



Source: SNS ULI Data, RCG Analysis.

Missing Geographic Detail

The ULI study aggregates all vacant land into a single regional total without breaking it down by jurisdiction, which makes it difficult for local governments to assess whether an adequate supply of developable land exists within their boundaries relative to their projected regional growth shares.

Similarly, the study does not separate employment land from residential land, making it impossible to match available supply to projected demand by land use. This is a critical distinction since industrial sites requiring specific infrastructure can't simply be swapped for residential parcels. Finally, the methodology does not distinguish between publicly-owned parcels (BLM, state, municipal) and private parcels. This matters because BLM and other public lands move through much slower federal disposition processes,

affecting whether they represent near-term buildable supply or long-term theoretical supply that may not be available within realistic planning timeframes.

Minimum Size Thresholds

The ULI study uses 0.5 acres for commercial parcels based on stakeholder feedback and "best practices" from other regions, but it does not provide empirical validation showing this aligns with actual development patterns in Southern Nevada's market.

B. Implications for Implementation of Results

For developers: Without knowing which vacant parcels are actually buildable after slope/floodplain deductions, which have adequate size and configuration, and which are in private vs. BLM ownership, developers can't assess real near-term development opportunities. A parcel may appear vacant in the data but be too fragmented or require multi-year federal processes.

For infrastructure planning: Without geographic breakdown, utility providers can't prioritize investments by jurisdiction or coordinate with local growth projections.

For economic development: Without separating employment from residential land, economic development authorities can't assess whether adequate sites exist for target industries versus housing needs.

C. Additional Data Quality Considerations

The ULI study required manual correction of 13.8 percent of reviewed parcels (5,800 out of 42,000) to "fix" development status classifications. The study does not document what types of errors were most common, what imagery sources and vintages were used for verification, or how corrections affected geographic distribution.

The study's vacant land inventory provides useful baseline data about where unimproved land exists, but, as previously noted, translating this into a practical and developable land supply assessment requires additional analyses that address utility infrastructure availability, parcel configuration after constraint deductions, geographic distribution by jurisdiction and boundary location, and BLM vs. private ownership timing.

[See Technical Methodology Appendix for detailed analysis of slope data sources, parameter selection, sensitivity analysis, and validation procedures.]

III. UNDERUTILIZED LAND METHODOLOGY — KEY FINDINGS

The ULI study's approach to identifying "underutilized" land differs fundamentally from its vacant land methodology. While vacant land identification relies primarily on objective criteria (land use codes, physical constraints), the study employs improvement-to-land value ratios, site coverage thresholds, and a stakeholder-weighted composite index to rank parcels. In total, the ULI identifies 8,985 acres as underutilized.

A. Key Technical Issues

Planning Preferences vs. Market Feasibility

The ULI methodology serves two purposes: (1) objective screening using value ratios and site coverage, (2) preference-based ranking using stakeholder weights. Understanding this distinction is critical:

- Composite index weights: Job/population density (30 percent), developed share (20 percent), economic development areas (20 percent), planned land use match (10 percent), transit access (10 percent), social vulnerability (5 percent), walkability (5 percent).
- These weights reflect stakeholder planning goals as to where planners believe development should occur based on their preferences for density and transit orientation.
- They do not project where development will occur based on market economics.
- They do not factor in property owners' preferences on what is appropriate to build on their land.

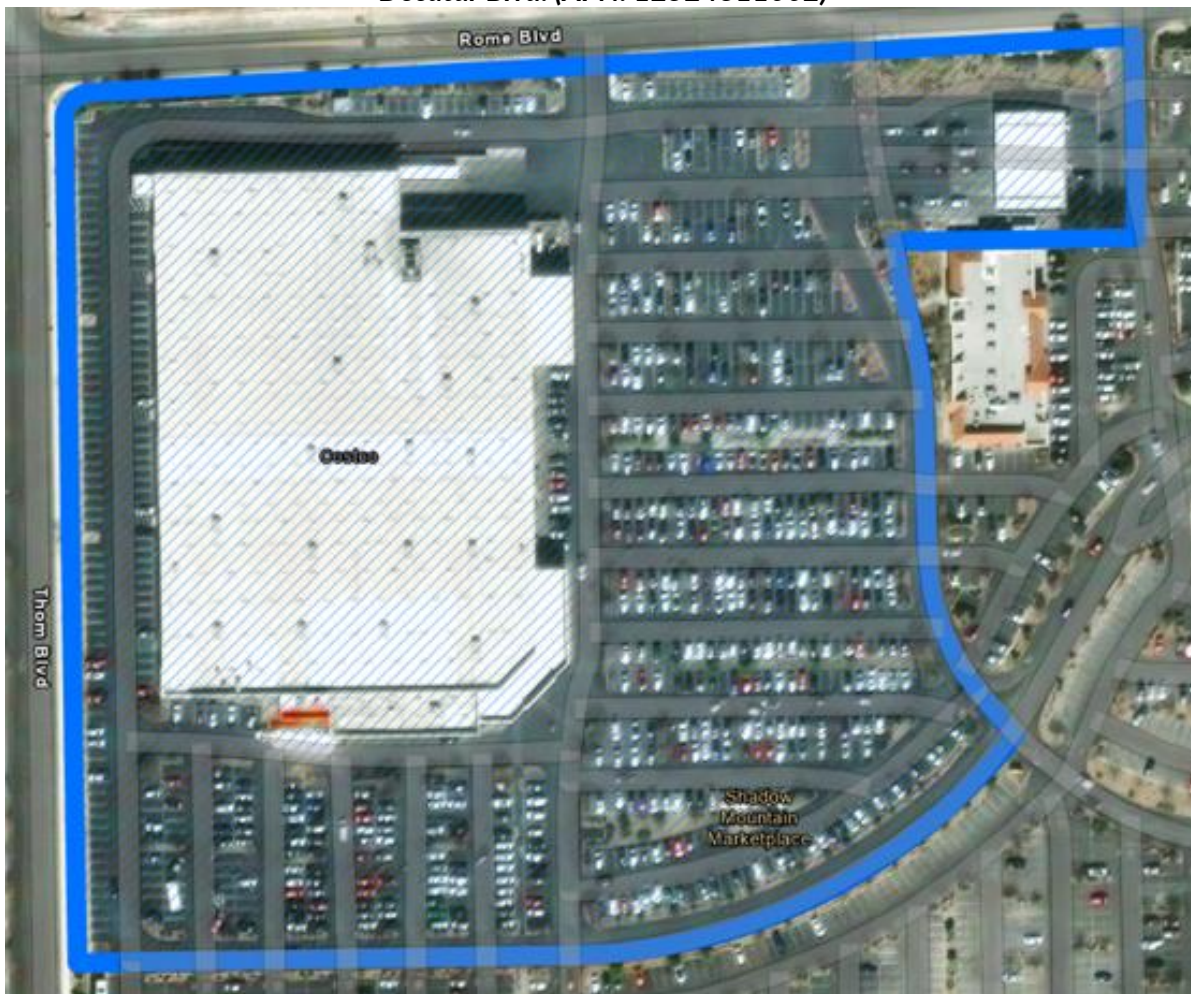
As a result parcels rank in the ULI study highly when they align with planning preferences (urban core, near transit, high existing density), not necessarily when they're financially viable to develop. This explains why development tends to occur regularly at boundary edges despite lower composite rankings. Developers focus on market and financial feasibility, not subjective planning scores.

In general, the ULI study methodology heavily weighs what planners believe is desirable and not necessarily what the market or property owners support or need. As a result, a parcel could be determined to be underutilized by the ULI authors and stakeholders, but in the opinion of the property owner and the market, the same parcel could be fully utilized.

Many "underutilized" parcels are currently developed with operating businesses with owners who may not have interest in redeveloping them. For example, Figure IV-1 shows a parcel where a Costco is located that was ranked underutilized in the ULI study. We are unclear why the Costco parcel was designated as "highly underutilized" especially considering the parking lot is essential for operations (and was generally full at the time the photo in the Figure was taken).

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Figure III-1: Example of Partially vacant (underutilized) parcel in ULI inventory Costco 6555 N Decatur Blvd. (APN: 12524811002)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

Assessor Valuation Issues

Underutilized land in the ULI study includes tax lots that meet two criteria: (1) an improvement-to-land value ratio below a specified threshold and (2) a site coverage percentage below a specified threshold.

For non-residentially-zoned parcels, the improvement-to-land ratio must be 85 percent or less, meaning the assessor's definition of value of the land is higher than the assessor's definition of the value of the improvements. In effect, the improvements must be worth no more than 85 percent of the land value.

The central concern with this approach is that the ULI study does not explain how improvement and land values are derived from assessor data.

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This raises a potential issue: two identical properties can classify differently based solely on building age, not actual development intensity, redevelopment potential, or market value.

Example: Two identical Walmart properties with the same land value (\$7.7M) and replacement cost (\$6.7M) have an 87 percent ratio - not meeting the 85 percent threshold. But if one was built in 2000 versus 2025, the older property has 25 years of depreciation (37.5 percent reduction), lowering its ratio to 54 percent and classifying it as "underutilized" despite being functionally identical.

Additionally, many "underutilized" parcels may serve legitimate current purposes that are highly valued by the market (such as having operational space, parking required for business function, expansion potential), but that assessor methodology undervalues or misses.

Ground-Truth Validation Gaps

The ULI study does not verify that highly-ranked parcels are actually suitable for redevelopment. Examples from the study's own dataset (which can be found in the Appendix) include:

- Schools with required playgrounds and operational space.
- Churches with parking and congregation space.
- Retail operations (the Costco example above) with extensive parking required for business model.
- Drive-in theaters where open space is the core business function.

Without validation, rankings may include properties that meet technical criteria but have no practical redevelopment potential.

Factor Correlation Concerns

Several factors likely correlate highly, meaning they measure the same underlying dimension:

- Density + walkability + transit access (45 percent combined weight) all measure essentially the same thing, "urban core proximity".
- When factors correlate, urban core parcels get compounding advantages across multiple factors, while suburban parcels are systematically disadvantaged.

As a result, geographic concentration in urban cores (noted in the study) may reflect correlated factors favoring the same locations rather than genuine redevelopment potential distributed across the region.

B. Implications for Implementation of Results

Without accounting for the desire or ability to redevelop, it is difficult to determine the practical usefulness of an estimate of underutilized land supply.

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For developers: Rankings explain where public planners might want development, but not necessarily where it is financially viable. Developers should be careful to not confuse a "highly underutilized" ranking with a ready-to-build/feasible opportunity. Developers need separate analysis of utility infrastructure, development costs, regulatory timelines, and market conditions.

For economic development: Highly-ranked sites are typically urban core locations prioritized for residential density. These may lack characteristics needed for economic development target industries (large parcels, heavy power, highway access). Without categorizing employment land by infrastructure characteristics, economic developers and site selectors can't match sites to industry requirements.

C. What the Underutilization Rankings Actually Measure

These estimates are most appropriate to be used to identify areas where stakeholders believe intensification aligns or diverges with regional planning goals (compact development, transit orientation, existing urban services). These are legitimate planning objectives, but achieving them may be challenging because market economics do not automatically support development in highly-ranked locations. Accordingly, these estimates are not appropriate to be used to reasonably plan for where development will actually occur, identifying financially viable opportunities, or determining which parcels will redevelop within the planning horizon.

Underutilized land rankings ultimately reflect stakeholder planning preferences about where intensification should occur, not market-based expectations of where development is likely to occur or is desirable from an owner property rights perspective. High rankings indicate alignment with planning goals, not readiness for development, as the ULI authors point out. Understanding this distinction is essential for appropriate interpretation and application.

[See Technical Methodology Appendix for detailed analysis of composite index methodology, factor weighting rationale, correlation analysis, threshold selection, and ground-truth validation examples.]

IV. ECONOMIC CONTEXT AND REGIONAL GROWTH IMPLICATIONS

The preceding sections have examined the ULI study's technical methodology. This section shifts from methodological assessment to practical application.

The ULI provides valuable inventory data identifying the 78,285 acres of vacant and underutilized land, but this inventory represents only part of the analysis needed to assess whether identified land can feasibly accommodate Southern Nevada's projected growth through 2050.

Specifically, the ULI identifies *where* land is located and *what* its planning characteristics are, but does not assess *whether* that land has the infrastructure, market economics, and regulatory conditions necessary to support development within the planning horizon. This section examines these additional market factors, which the ULI authors also identify, that must be considered to translate the ULI's inventory into a practical understanding of developable land supply.

A. Utility Infrastructure

While the study identifies parcels based on physical characteristics and planning metrics, understanding whether those parcels can feasibly support development requires evaluating utility infrastructure. A site may look perfect on paper (it has appropriate zoning, no steep slopes, good size), but without appropriate utility infrastructure, it can't be developed without major investment and years of lead time.

Electric Power Infrastructure

Many parcels, particularly in older urban areas classified as "highly underutilized" based on density and transit metrics, are served by aging electrical infrastructure which may be operating at or near capacity. Adding density may require substation upgrades or new transformer installations that can cost millions of dollars and require years to complete.

The distinction between residential and employment land is critical for electrical infrastructure. Industrial facilities and modern logistics operations require substantially more power than residential uses. In some cases, infrastructure upgrade costs may even exceed land value, particularly for smaller parcels.

Water and Sewer Infrastructure

Older urban areas with "underutilized" parcels often also have aging water and sewer infrastructure designed for lower-density development patterns. Adding density generally requires adequate water pressure, sewer lines, and treatment plant capacity.

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For vacant parcels beyond existing service areas, the study does not assess distance to nearest infrastructure, extension costs, whether the existing can serve additional development, or timing for planning, funding, and construction.

Combining the ULI's inventory data with a utility infrastructure assessment would provide a more complete picture of developable land supply. Without this type of analysis, the distinction between parcels that can feasibly support near-term development and those requiring multi-year infrastructure investments costing millions of dollars remains unclear.

B. Market Economics and Development Feasibility

Beyond infrastructure needs, translating inventory data into practical development projections requires considering regulatory approval processes and financial feasibility. These are market factors outside the ULI's planning-focused scope.

Regulatory and Approval Complexities

The ULI study acknowledges that "land use policy and ease of permitting varies across jurisdictions." Translating inventory data into developable land supply projections requires accounting for how these variations affect feasibility:

- What takes six months in one jurisdiction may require significantly more time in another.
- Urban infill projects may require many discretionary approvals, adding uncertainty, time, and cost.
- Public engagement processes can vary by location and project type.
- Each additional month adds property taxes, debt service, professional fees, and market risk.

Understanding these regulatory realities helps distinguish parcels where development is likely to proceed on relatively predictable timelines from those facing more complex approval processes.

One reason for a number of these parcels being labeled as underutilized may in fact be due to regulatory requirements, such as minimum parking requirements or other development standards that developers must take into account when designing their properties.

Financial Feasibility: Market Economic Factors

Parcels face significantly different development economics depending on their characteristics. For example:

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- Infill sites requiring demolition, environmental remediation, and utility upgrades face cost premiums above greenfield development.³
- Constrained site access, staging limitations, and protection of adjacent structures add costs.
- Extended regulatory timelines increase carrying costs and soft costs.
- Sites requiring land assembly face transaction costs and holdout risks.

Many parcels described as “underutilized” based on improvement-to-land ratios serve economically viable purposes: outdoor storage, vehicle staging, expansion potential, required parking and landscaping, or operational space. Understanding whether these uses represent genuine business needs versus redevelopment opportunities requires market analysis beyond assessor data.

Additionally, market behavior provides information about development feasibility. The continued concentration of development at certain locations, despite the different planning rankings given in the ULI study, suggests that development decisions reflect economic feasibility considerations alongside planning preferences. As noted previously, developers focus on market and financial viability, not planning preference sources.

C. Market Timing and Land Supply Developability

The ULI provides a 2024 snapshot of land characteristics. Assessing whether this inventory can accommodate growth through 2050 requires temporal analysis examining how development feasibility changes over time and how land moves through the development pipeline.

Market Cycles and Timing Realities

The 78,000 acres identified in the ULI are not analyzed as when this land would likely be absorbed by the market/economy. Even with adequate supply in aggregate, development must match demand timing. A static inventory cannot indicate whether the identified land will be developable during periods of market weakness or credit constraints.

The study acknowledges some parcels “currently under development” are incorrectly classified but provides no assessment of parcels that are under contract, in entitlement/permitting, recently entitled awaiting financing, or subject to development agreements. These parcels may appear as “available” in 2024 data but are actually committed to near-term development.

³ <https://www.epa.gov/sites/default/files/2014-06/documents/developer-infill-paper-508b.pdf> and https://www.finehomesandliving.com/luxury_homes/infill-construction-explained-the-real-estate-trend-thats-creating-millionaire-investors/article_7d9e34e4-107d-4639-8d5c-4c0d3b631da1.html

The 25-Year Planning Challenge

The ULI is intended to inform planning through 2050, yet the static inventory approach creates fundamental problems. First, to assess whether the 78,285 acres is adequate for 25 years of development you must analyze annual absorption rates and whether the available supply adequately spans the planning horizon. The ULI provides no such analysis.

Second, major infrastructure investments require 5-10 year planning horizons for water/sewer systems and even longer for transportation. Land in the ULI study classified as “available” in 2024 may require infrastructure investments not yet planned or funded. Without understanding infrastructure timing, development may be blocked by lack of supporting systems.

Assessing Land Supply Developability

To assess whether the identified land inventory in the ULI study can actually accommodate projected growth requires multiple complementary analyses including:

- Consumption rate analysis showing historical land absorption patterns and projected requirements for estimated new population growth.
- Infrastructure coordination showing when utilities will be available to support development.
- Geographic distribution enabling jurisdiction-by-jurisdiction assessments.
- Use-type allocation matching residential and employment land to projected demand.
- Phasing analysis showing how land moves through the development pipeline over time.

This market/economic-based analysis would provide the foundation for determining whether the identified inventory, after accounting for practical constraints, can accommodate regional growth needs over the planning horizon.

D. Economic Development Considerations

Southern Nevada wants to attract advanced manufacturing, data centers, healthcare/life sciences, and logistics/distribution. Assessing whether available employment land can support these industries requires understanding infrastructure characteristics:

- Utility infrastructure requirements.
- Parcel size and configuration (logistics operations may require 100+ acres; manufacturing may need 50+ acres).
- Transportation access (interstate highway proximity, rail access where applicable).
- Site characteristics (flat terrain, adequate clearances, operational flexibility).

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Categorizing employment land by these characteristics would enable assessment of whether the inventory matches target industry requirements and identification of potential gaps in specific land types needed for economic development objectives.

Translating the ULI's inventory into actionable information for key stakeholders requires supplementary market-based analysis. Specifically:

- **Economic Development Agencies** would benefit from employment land categorization by infrastructure characteristics and industry fit; assessment of whether available land meets utility, size, and access requirements for target industries.
- **Infrastructure Providers** would benefit from assessments identifying which areas need investment to enable development; priority ranking based on development likelihood and regional growth objectives; coordination framework linking infrastructure planning to development phasing.
- **Local Jurisdictions** would benefit from jurisdiction-specific land totals and adequacy assessment relative to projected growth shares; identification of infrastructure investment needs within their boundaries; understanding of regulatory and site factors affecting development feasibility in their areas.
- **Developers** would benefit from identification of sites where infrastructure, regulatory, and economic factors align for near-term feasibility; understanding of infrastructure investment timelines and cost-sharing expectations; clarity on which parcels face significant constraints requiring long-term solutions versus near-term opportunities.

These supplementary analyses are necessary to address “whether land can feasibly be developed and when” rather than simply “where is this land located?” Without this information, each stakeholder group cannot make informed decisions within their respective areas of responsibility.

E. Summary: Market Based Development Factors

The ULI study provides valuable inventory data identifying where vacant and underutilized land is located within the SNPLMA disposal boundary and what planning characteristics these parcels possess. This represents an important contribution to understanding the region's land base and provides a useful foundation for further analysis.

However, translating this inventory data into practical assessments of developable land supply over the 2050 planning horizon requires supplementary analyses addressing market factors outside the ULI's planning-focused scope including: utilities, regulatory and economic feasibility, development timing and absorption rates, and geographic distribution by jurisdiction and boundary location.

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The gap between identifying land on a map and assessing whether it is developable centers on factors that determine whether and when development can feasibly occur:

- **Infrastructure readiness** determines near-term potential vs land requiring multi-year investment.
- **Regulatory and economic factors** affect development timelines, costs, and likelihood.
- **Market absorption rates** determine how the market responds to new development over 25 years
- **Geographic distribution** enables location-specific adequacy assessment.
- **Use-type categorization** allows matching supply to demand for residential versus employment needs.

A comprehensive approach to understanding the land situation in Southern Nevada would need to integrate the ULI's planning-focused inventory with market-based feasibility analysis. This would provide decision-makers with the complete information necessary for informed choices about regional growth strategies and infrastructure investment priorities affecting Southern Nevada's development through 2050.

The ULI study is one important piece of the research and analysis needed for major regional decisions. The supplementary market-based analyses recommended here complement the ULI's contributions and provide the complete picture necessary for confident, evidence-based regional planning.

V. APPENDIX A: VACANT LAND METHODOLOGY REVIEW

The ULI's vacant land methodology identifies parcels using Clark County assessor land use codes, applies physical constraint filters (slope, floodplains), and establishes minimum size thresholds. This section examines these methodological components to understand what the inventory reveals about vacant land distribution and where additional analysis or transparency would enhance interpretation of the findings.

A. Physical Constraint Parameters

Slope

The ULI reports using slope upper thresholds of 15 percent for employment land and 25 percent for residential land. The study deducts portions of parcels exceeding these thresholds rather than eliminating entire parcels, and summing the remaining acreage as developable. It is important to note that it unclear why 15 percent was chosen as the appropriate cutoff for employment development. According to industry standards from planning and development literature: non-residential vertical development typically becomes prohibitive above 12 percent slope. This has been established as early as 1967 in research published in the Journal of the Urban Planning Division (Proceedings of the American Society of Civil Engineers, Exhibit 1 in Appendix).

A visual example can be helpful to understand the slope filters. To provide the reader with clarity on the types of terrain captured by slopes greater than 12 percent, **Exhibit 2** in the Appendix presents a 3D visualization of Cliff Shadows Open Desert Park. The visualization overlays the GISMO slope map and highlights three slope classifications: areas with slopes less than 12 percent (unshaded), slopes between 12 percent and 25 percent (light red), and slopes greater than 25 percent (dark red). Three control points (A, B, and C) were selected to show terrain that falls within the 12 percent–25 percent category. These areas are presumably excluded from the ULI study's counts of developable employment land but are simultaneously treated as developable for residential purposes according to the study's methodology.

RCG reviewed the data sources referenced in the ULI study. As noted in Appendix C of the ULI study, the study identifies GISMO as the origin of its slope data.⁴ Within GISMO, the corresponding slope product is accessible here.⁵ Inspection confirms that GISMO's slope dataset (consistent with OpenWEB) contains only four categorical slope intervals:

⁴ <https://clarkcountygis-ccgismo.hub.arcgis.com/>.

⁵ <https://clarkcountygis-ccgismo.hub.arcgis.com/datasets/ccgismo::other-data-layers/explore?layer=8&location=35.918769%2C-114.964650%2C8.71>.

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(a) < 12%; (b) 12–25% (c) 25–50% and (d) > 50%

Given that GISMO's slope data set is constructed in predefined discrete intervals as noted above, and because these predefined intervals do not align with the 15 percent threshold cited in the ULI study, it remains unclear how the ULI derived a discrete >15 percent classification using GISMO's slope dataset.

This leads to two significant issues requiring clarity:

Issue 1: Threshold Data Irregularity

- ULI reports using 15 percent for employment land (exceeds the most common industrial development standard).
- GISMO's slope dataset (the cited source) uses categorical intervals: <12%, 12-25%, 25-50%, >50%.
- The 15 percent threshold does not align with GISMO's data categories, suggesting either: (a) the ULI actually used 12 percent thresholds, or (b) accessed different data than publicly available.
- Metadata in ULI shapefiles suggests 12 percent thresholds may have been used despite the study language stating 15 percent.

If 12 percent thresholds were used (aligning with commercial real estate industry standards and data structure), the methodology and analytical results would be more conservative than reported. If 15 percent was actually used, the approach may include steeper terrain than typically considered developable by the industry at least in the Las Vegas MSA. Understanding which threshold was actually applied in the ULI affects interpretation of the size of the developable land inventory in the Las Vegas Valley.

Issue 2: Parcel Partial Deduction Approach

- Rather than excluding entire parcels with steep slopes, the ULI deducts only the steep portions.
- Remaining portions may be fragmented into discontinuous pieces.
- Small parcels (including those at the 0.5-acre minimum) may become too fragmented for practical development after deductions.
- Visual examples (Exhibits 3-6 in Appendix) show how this creates irregular remnants, particularly in areas like APEX region in North Las Vegas.

The inventory may count acreage that appears "developable" after slope deductions but is actually too fragmented or oddly configured for feasible development. This is especially true concerning for smaller parcels where even modest slope deductions significantly affect usability.

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Assuming 12 percent slope thresholds were indeed used in the ULI study, panel (a) of **Exhibit 3** in the Appendix illustrates the full set of parcels in the APEX business park in the City of North Las Vegas categorized as “vacant” and displayed as vacant in the ULI inventory maps. Panel (b) eliminates portions of parcels (using Gismo’s slope dataset) that are above 12 percent.

As shown in **Exhibit 3**, this approach introduces a significant **practical limitation**. The retained portions are potentially **fragmented**, particularly smaller parcels, raising uncertainty as to whether these remnants can feasibly support development. While large parcels may still contain subareas of sufficient size for development, this assumption weakens considerably for smaller parcels. Notably, the ULI dataset includes commercial parcels as small as **0.5 acres**, for which even minor fragmentation could render development infeasible. To further illustrate the issue of parcel fragmentation, several examples are included in Exhibits 4, 5 and 6 found in the Appendix.

FEMA Floodplains

In line with the ULI study’s approach to deducting acreage from parcels, based on portions that exceed the chosen slope thresholds, the study applies a similar methodology to deduct portions of parcels that fall within the FEMA 100-year floodplain. This introduces the same parcel-fragmentation issues raised earlier: portions of a parcel may appear technically “developable” once the floodplain is subtracted, even if the remaining pieces are functionally unusable or discontinuous. As with slope deductions, the study does not assess how this filtering step affects the final inventory or how sensitive the results are to the inclusion or exclusion of floodplain-impacted land.

A more robust analysis would present alternative scenarios: (a) results without applying the FEMA floodplain filter, and (b) results that fully exclude parcels intersecting the floodplain rather than deducting only the affected acreage. Comparing these alternatives to the ULI’s reported results would allow readers to understand the magnitude of the floodplain filter’s influence on the regional inventory, the extent of parcel fragmentation introduced by this step, and the stability of the study’s conclusions under reasonable methodological variation.

Lack of Sensitivity and Robustness Analysis

The ULI report lacks any sensitivity analysis with respect to its key model parameters—particularly the slope exclusion thresholds (≥ 15 percent for employment lands; ≥ 25 percent for residential) and the minimum parcel size filters (0.5 acre for commercial, 5,000 square feet for residential). These parameters represent important determinants of the model’s output, yet their empirical justification and influence on overall results are not explored.

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Sensitivity testing is essential to establish model credibility for spatial analyses. Sensitivity testing refers to the process of showing how overall model results (e.g., vacant land acreage inventories) change in response to changes in model filters or parameters (such as parcel slope thresholds and parcel size/acre thresholds). Even small variations in slope cutoffs—for instance, adjusting the employment-land threshold from 15 to 12 percent—could produce substantial shifts in total developable acreage, especially within regions characterized by gradual topographic transition such as the Las Vegas Valley. Similarly, altering the parcel-size criterion from 0.5 to 1.0 acre could reclassify thousands of parcels, materially affecting both the geographic distribution and magnitude of the identified underutilized land.

The report provides no indication that such sensitivity checks or scenarios were examined. Consequently, it is difficult to assess how resilient the ULIs findings are to alternative model assumptions.

B. Minimum Size Thresholds and Parameter Transparency

The ULI study establishes a **minimum parcel size of 0.5 acres for commercial land**, citing stakeholder feedback and “best practices” from comparison regions as the rationale for this threshold. However, the report offers little empirical validation grounded in observed development patterns in the Southern Nevada market. In the absence of such analysis, the selected cutoff functions should be interpreted as **general rather than precedent local market-driven**.

This is not to suggest that **commercial parcels smaller than 0.5 acres are inherently undevelopable**. Rather, the issue lies in the lack of quantitative evidence supporting where this boundary should be drawn. Parcel-level analysis of built environments in Clark County would likely reveal significant variation in parcel sizes where a small subset of compact, infill-scale sites coexists alongside substantially larger tracts typical of regional employment centers. Without documenting this distribution, the ULI study does not explain whether the 0.5-acre filter systematically excludes viable small sites or, conversely, inflates developable acreage by including parcels unsuitable for modern commercial use.

IMPORTANT NOTE: If this filter is set too low, it risks overstating the supply of infill land by counting parcels that are physically constrained or irregularly shaped. If it is set too high, it may prematurely eliminate parcels that could feasibly accommodate smaller-scale or mixed-use redevelopment projects. Either case introduces bias into the results.

It is unclear if this assumptions aligns with the **actual distribution of developed parcel sizes** within the urban Clark County commercial market.

C. Geographic Reporting and Ownership Structure

The ULI reports a total acreage estimate for urban Clark County (the Las Vegas Valley) but does not provide certain geographic and categorical breakdowns that would enhance understanding of land supply distribution and development timing.

Missing Geographic Detail

Use-Type Separation: While the methodology in the study identifies employment and residential parcels separately, final reporting combines them into aggregate totals. This limits the ability to:

- Assess whether adequate employment land exists for projected job growth.
- Determine if residential land supply matches housing demand projections.
- Identify use-type specific shortages or imbalances.
- Coordinate infrastructure planning with appropriate land uses.

Jurisdictional Distribution: The study does not report vacant land totals by jurisdiction, preventing:

- Local assessment of supply adequacy relative to projected growth shares.
- Jurisdiction-specific planning and infrastructure coordination.
- Understanding of how supply is distributed across the region.

Boundary Location: The ULI does not distinguish land inside versus outside the SNPLMA disposal boundary.

Ownership Structure

BLM Land Timing: The ULI study appropriately includes BLM-owned land but does not report what portion of the total inventory consists of BLM parcels. This matters because:

- BLM parcels move into the development pipeline more slowly due to federal disposition processes.
- Auction timelines and interagency coordination create longer lead times.
- These parcels represent longer-term potential rather than near-term supply.

Presenting results both with and without BLM land would help clarify:

- How much inventory is realistically available in near to medium term.
- What portion represents longer-term theoretical supply.
- How timing considerations affect practical supply adequacy assessment.

D. Data Quality and Validation Transparency

The ULI's development status classification required significant ad hoc manual review and adjusting by the authors of the study. However, not much detail on the scope and nature of these adjustments is provided. If the authors had included more detail of these adjustments it would enhance confidence in the dataset.

Manual Adjustment Scope

Approximately 42,000 parcels underwent manual review, with 5,800 parcels (13.8 percent) requiring development status corrections. This represents a substantial adjustment rate for a foundational classification.

The ULI study does not document:

- What types of errors were most common.
- Which parcel characteristics were most prone to misclassification.
- What underlying data quality issues necessitated corrections.
- How corrections were validated and what imagery sources were used.

Imagery and Timing

Imagery predating recent development activity could systematically classify developed parcels as vacant, when in fact they are not. Understanding imagery timing and consistency helps assess classification reliability.

The ULI study also does not specify:

- What year or vintage of satellite imagery was used.
- Whether imagery timing aligns with the study date (2024).
- Whether different imagery vintages were used across jurisdictions.
- How recent development activity might appear in imagery used.

Understanding the nature and distribution of classification errors would reveal:

- Whether certain parcel types or characteristics are more prone to misclassification.
- What data quality improvements might enhance future inventory accuracy.
- How corrections affected the geographic and use-type distribution of identified parcels.

The ULI's vacant land methodology provides valuable inventory data showing where vacant parcels are located within the study area. The approach relies primarily on objective criteria (assessor codes, physical constraints, size thresholds). However and importantly, additional analyses are needed in order to

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accurately identify and assess filter (parameter) sensitivity, geographic and land-category detail, fragmentation assessment, and data quality. These factors and indicators are crucial for obtaining the knowledge and data required to accurately estimate the region's actual amount of vacant developable land for market, economic development, and resilience purposes.

VI. APPENDIX B: DETAILED UNDERUTILIZED LAND METHODOLOGY REVIEW

The ULI's approach to identifying underutilized land differs fundamentally from its vacant land methodology. While vacant land identification relies primarily on objective criteria (land use codes, physical constraints), the underutilized land analysis employs improvement-to-land value ratios, site coverage thresholds, and a stakeholder-weighted composite index to rank parcels. This section examines these methodological components and identifies where additional analysis or transparency would enhance understanding of what the rankings measure and how they relate to market-driven development potential.

A. Planning Preferences and Empirical Analysis

The ULI study is a mix between empirical analysis and planning preference. While presented as a technical inventory, the study functions largely as a visualization tool shaped by stakeholder judgments. In doing so, it merges quantitative indicators (e.g., slope, zoning, ownership) with qualitative, normative inputs derived from planning priorities without distinguishing the relative importance of each factor.

This combination of objective and subjective preferences compromises objectivity and reproducibility, producing results that reflect stakeholder perception as much as measurable physical constraints. The model's outputs therefore represent a planning-weighted interpretation of developable land, not an empirically derived determination of developable land that could be independently reproduced with primary data sources.

B. Valuation Thresholds and Classification Criteria

Underutilized land in the ULI study includes tax lots that meet two criteria: (a) an improvement-to-land value ratio below a specified threshold and (b) a site coverage percentage below a specified threshold.

For employment-zoned parcels, the improvement-to-land ratio must be 85 percent or less, meaning the assessor's definition of value of the land is higher than the assessors definition of the value of the improvements. In effect, the improvements must be worth no more than 85 percent of the land value.

The central concern with this approach is that the ULI study does not explain how improvement and land values are derived from assessor data. In Nevada, as detailed here at <https://www.clarkcountynv.gov/government/assessor/real-property>, all real property must be assessed annually. Importantly:

- Improvement values are based on replacement cost, as determined by the Marshall & Swift Building Cost Service, minus depreciation.
- Land values are derived using a market value approach.

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For improvements, depreciation is applied at 1.5 percent per year based on building age, regardless of actual market performance or functional obsolescence.

This valuation structure introduces a methodology distortion. Two parcels may have the same land values, building footprints, parking lots, and identical replacement costs for the structures, but differences in building age will produce substantial differences in the assessor's improvement value. If the ULI study is indeed relying on depreciated improvement values, a parcel may fall below the 85 percent improvement-to-land ratio threshold solely due to building age, not because the parcel is genuinely underbuilt or underutilized in any economic or market sense.

For example, consider two Walmart shopping centers—Walmart A and Walmart B—that are identical in every respect except for the year they were constructed. Assume that both parcels have identical land values and identical improvement replacement costs before tax depreciation. For example, suppose the land value for each Walmart is \$7.7 million and the replacement cost of the improvements is \$6.7 million. The resulting improvement-to-land value ratio is 87 percent, meaning neither parcel would meet the ULI study's 85 percent threshold and both would be excluded from the underutilized inventory.

However, now assume Walmart A was built in 2025 while Walmart B was built in 2000. Under Nevada's assessment rules, Walmart B would accumulate 25 years of depreciation at 1.5 percent per year leading to a total reduction of 37.5 percent. In this scenario, the assessor-recorded improvement value for Walmart B would fall to approximately \$4.18 million. This would reduce its improvement-to-land ratio to 54.2 percent, causing Walmart B, but not Walmart A, to be classified as underutilized under the ULI methodology, despite the fact that the two properties are identical in all economically relevant ways.

This example underscores a core problem: the ULI's approach can classify parcels as "underutilized" solely due to assessor depreciation rules tied to building age rather than any actual deficiency in development intensity, market performance, or redevelopment potential.

The second criterion for classifying land as underutilized requires that buildings or structures occupy 40 percent or less of the parcel area. However, the ULI study does not evaluate how the remaining 60 percent of the parcel is spatially configured. Unimproved areas may be highly fragmented, irregularly shaped, topographically constrained, or obstructed by easements, access limitations, or the placement of existing buildings. In such cases, a parcel may satisfy the 40 percent site-coverage threshold yet still be operationally or economically infeasible to redevelop.

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As with the improvement-to-land ratio, the site-coverage threshold appears to be based on subjective judgment rather than empirical calibration. The ULI study provides no data-driven justification for choosing 40 percent, nor does it analyze how alternative thresholds would affect the results. This underscores the need for sensitivity testing to show how changes in the site-coverage threshold alter the number, location, and characteristics of parcels classified as underutilized. Without such analysis, it is impossible to determine whether the chosen thresholds are appropriate—or whether they materially shape, and potentially distort, the study's final inventory.

Taken together, these issues highlight a broader methodological concern: key components of the ULI's classification system rely on untested assumptions that may systematically misidentify parcels as underutilized, thereby weakening the reliability and interpretability of the study's findings.

C. Composite Index Methodology

The ULI's composite index ranks underutilized parcels using seven stakeholder-weighted factors. Understanding the weighting rationale, potential factor correlations, and classification thresholds is important for interpreting what rankings measure.

Factor Weighting Methodology

The Weights:

- Job and Population Density: 30 percent
- Developed Share of Land: 20 percent
- Economic Development Areas: 15 percent
- Matched Planned Land Use Type: 15 percent
- Access to High-Frequency Transit: 10 percent
- CDC Social Vulnerability Index: 5 percent
- Walk Score: 5 percent

The ULI study indicates weights were "co-established by stakeholders and the Project Team" but does not document:

- What decision-making process produced these specific percentages.
- Whether empirical analysis informed weight selection.
- How conflicts among stakeholder priorities were resolved.
- Whether alternative weighting schemes were tested.

The weighting approach inserts stakeholder planning preferences into the ranking system. The 30 percent weight on density and 10 percent on transit access reflects planning goals favoring compact, transit-

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oriented development. This is a legitimate planning approach but represents normative choices about desired development patterns rather than empirically-derived predictions of where development is likely to occur.

Potential Factor Correlations

Several factors may be substantially correlated based on urban development patterns:

Density + Walk Score + Transit Access (45 percent combined weight): Urban core areas typically score high on all three, while suburban areas score low on all three. These factors may largely measure "urban core proximity" rather than three independent dimensions.

Developed Share + Site Coverage Threshold: Parcels must meet a coverage threshold to be classified as underutilized, then are scored on developed share. This creates structural correlation with the initial screening criteria.

Planned Land Use + Economic Development Areas (30 percent combined): Both reflect alignment with planning goals, potentially measuring consistency with local planning objectives rather than independent factors.

If factors are highly correlated, the composite index may not represent balanced assessment across multiple independent dimensions. Instead, parcels in urban core locations may receive compounding advantages across multiple correlated factors, while parcels elsewhere are systematically disadvantaged regardless of site-specific development potential.

Classification Thresholds

The ULI study creates the following classifications based on the results of the composite index. They are:

- Low underutilization: scores below 0.60
- Medium: 0.60 to 0.75
- Medium-to-high: 0.75 to 0.90
- High: above 0.90

The UL does not explain why these specific breakpoints were chosen or analyze how alternative thresholds would affect acreage totals and geographic distribution in each category.

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The ULI study reports "over 10,000 acres received medium or high rankings." If thresholds were 0.55 and 0.70 instead of 0.60 and 0.75, this acreage could change significantly. Without sensitivity analysis, the robustness of this finding cannot be assessed.

Comparing classification categories to actual development outcomes would reveal:

- Whether highly-ranked parcels experience redevelopment more frequently.
- Whether categories correspond to meaningful differences in redevelopment timing or intensity.
- Whether thresholds distinguish genuine opportunity differences or create arbitrary categorical boundaries.

D. Ground Truth Validation Considerations

The ULI study does not provide any evidence of ground-truth validation to confirm whether parcels classified as "underutilized" actually exhibit the physical or operational characteristics implied by the index.

The study relies entirely on assessor data, remote sensing, and GIS-derived metrics but does not document any on-the-ground verification, visual audits, or systematic review of a representative sample of parcels. Without such validation, it is unclear whether the classification criteria meaningfully reflect real-world development conditions or whether they inadvertently misidentify parcels that are fully utilized, recently redeveloped, or otherwise unsuitable for additional development. For example, the Appendix presents aerial imagery for several parcels the ULI study identifies as underutilized. These examples are shown as Exhibits 7 to 12 found in the Appendix.

These include:

- Schools with required playgrounds and operational space.
- Churches with parking and open space for congregation activities.
- Retail operations (like Costco) with extensive parking required for business operations.
- Drive-in theaters with large open space as core business function.

Without ground-truth validation the rankings may include properties that meet technical criteria but lack practical redevelopment potential given actual site conditions and operational requirements.

The ULI's underutilized land methodology provides valuable information about where stakeholders believe intensification opportunities exist based on planning preferences. The composite index identifies areas where current development patterns diverge from planning goals, which can inform discussions about where interventions might encourage desired development patterns.

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The rankings are most appropriately used for identifying areas where planning goals and existing conditions differ from one another, informing discussions about where incentives might be needed, or how planning goals may need to be updated based on market realities.

Understanding that rankings reflect stakeholder planning preferences rather than market-based feasibility assessments helps ensure appropriate interpretation and application for regional planning decisions.

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VII. APPENDIX C: EXHIBITS

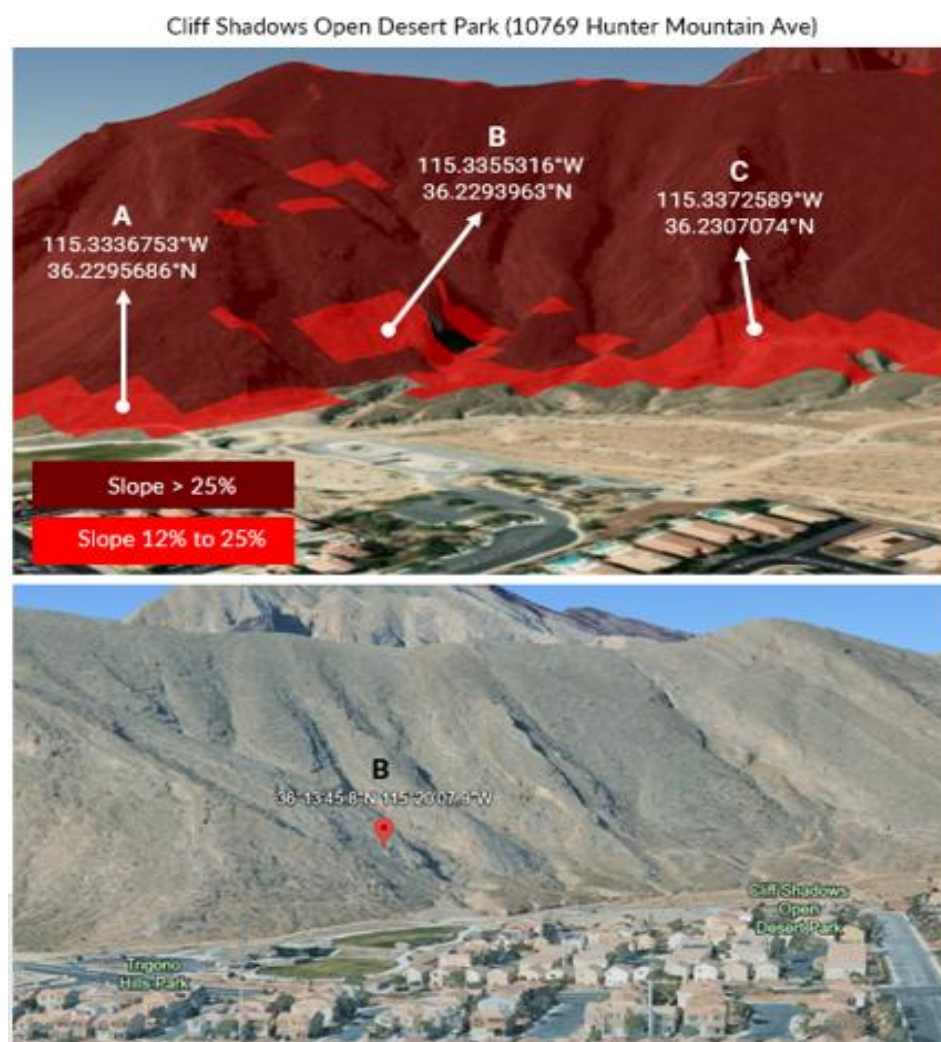
Exhibit 1: Established Slope Thresholds

Slope Suitability for Urban Development: Slopes Suitable for Development by Land Use Type

Limitations	Suitability Rating	Residential	Commercial	Industrial Park
Slight	Optimum	0–6%	0–6%	0–2%
Moderate	Satisfactory	6–12%	6–12%	2–6%
Severe	Marginal	12–18%	12–18%	6–12%
Very Severe	Unsatisfactory	>18%	>18 %	>12 %

Adapted from Keifer, Ralph W. "Terrain Analysis for Metropolitan Fringe Area Planning" *Journal of Urban Planning Division, Proceedings of the American Society of Civil Engineers*, December 1967. Moechnig, Howard, *Inventory and Evaluation of Soils for Urban Development* (St. Paul HRA C.P. District 6 - North End), Ramsey Soil and Water Conservation District.

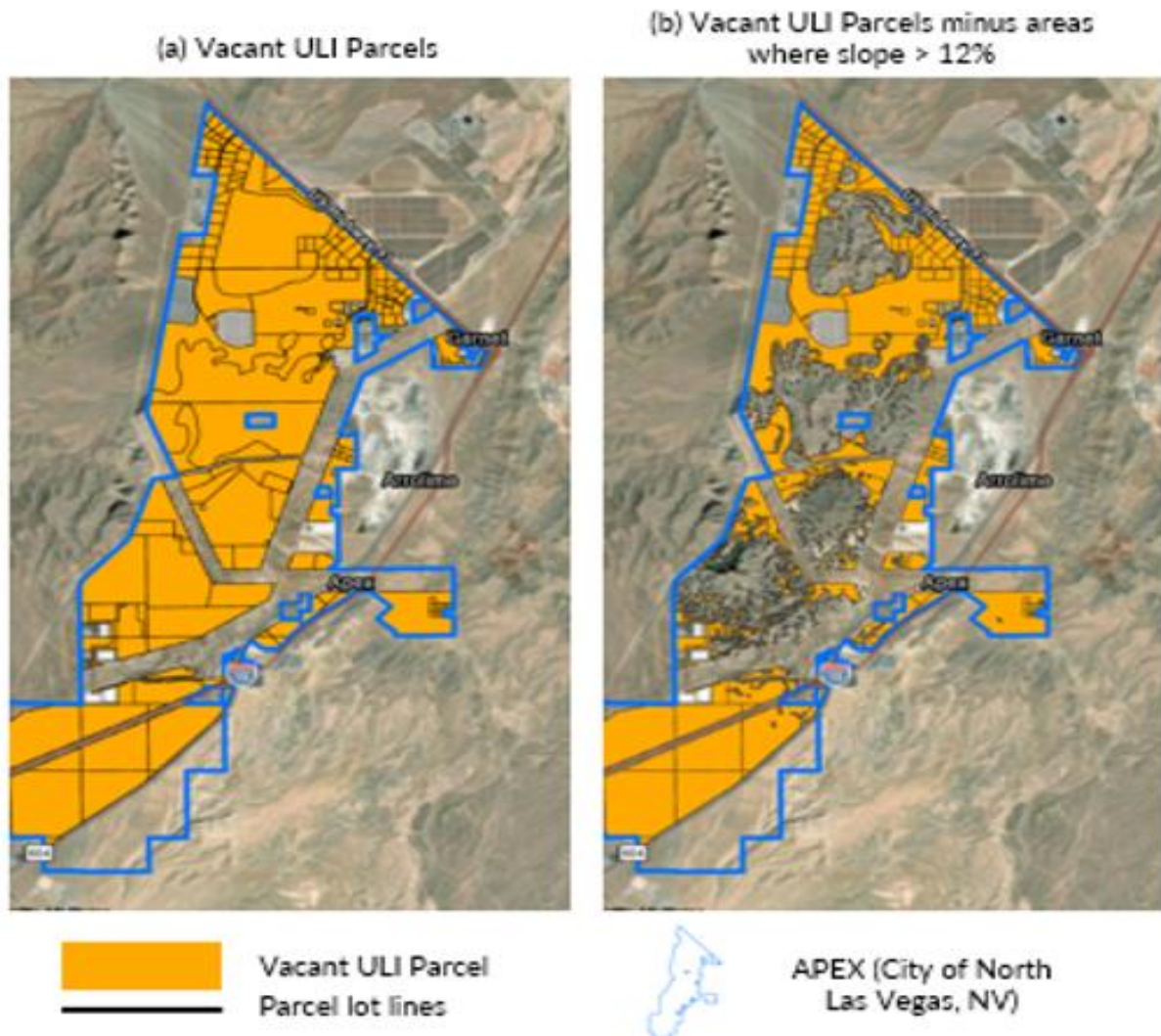
Exhibit 2: Example of Terrain Slope



Source: GISMO Data, RCG Analysis.

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Exhibit 3: Example of ULIs Slope Computation



Source: SNS ULI Data, RCG Analysis.

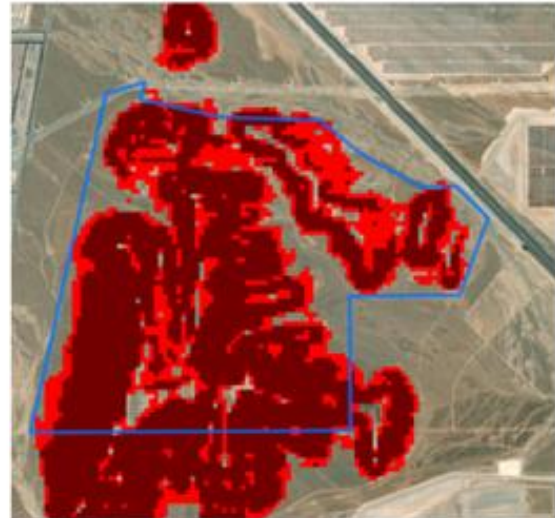
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Exhibit 4: Example of ULIs Slope Computation: Sample NLV Parcel

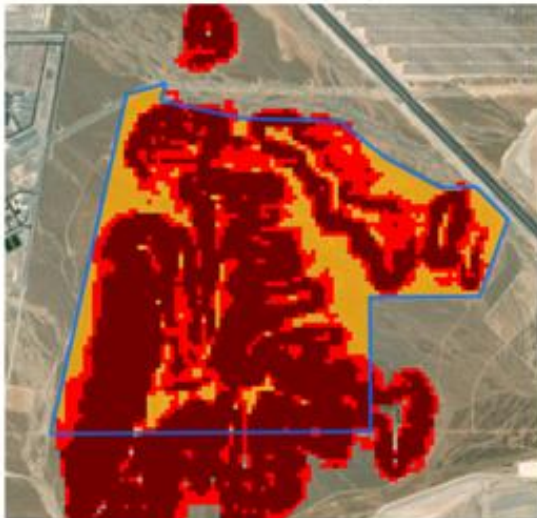
(a) Vacant parcel in ULI Inventory



(b) GISMO's slope map (slope >12%)



(c) Vacant parcel overlaid with slope map



(d) Portions of parcel <12% slope

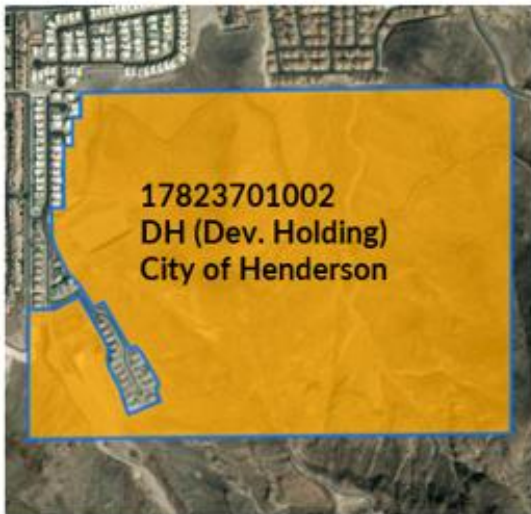


Source: SNS ULI Data, RCG Analysis.

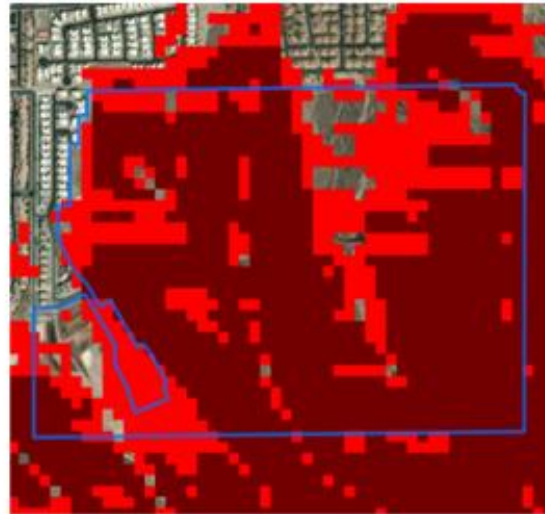
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Exhibit 5: Example of ULIs Slope Computation: Sample COH Parcel

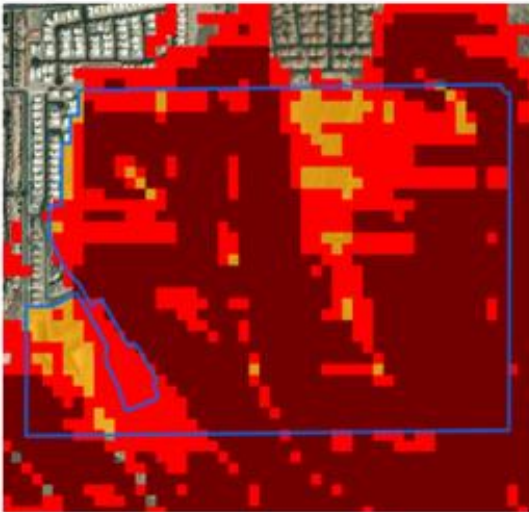
(a) Vacant parcel in ULI Inventory



(b) GISMO's slope map (slope > 12%)



(c) Vacant parcel overlaid with slope map



(d) Portions of parcel < 12%



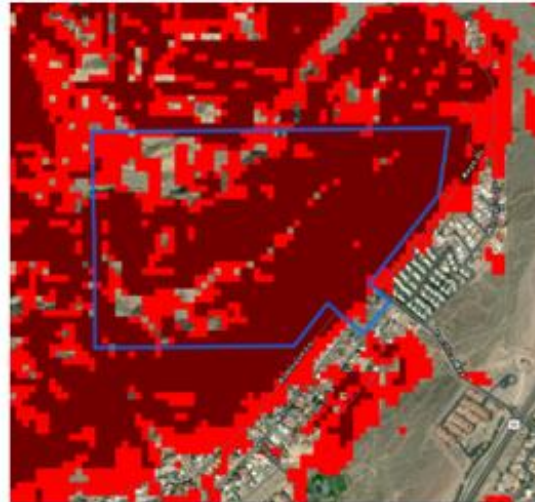
Source: SNS ULI Data, RCG Analysis.

Exhibit 6: Example of ULIs Slope Computation: Sample Boulder City Parcel

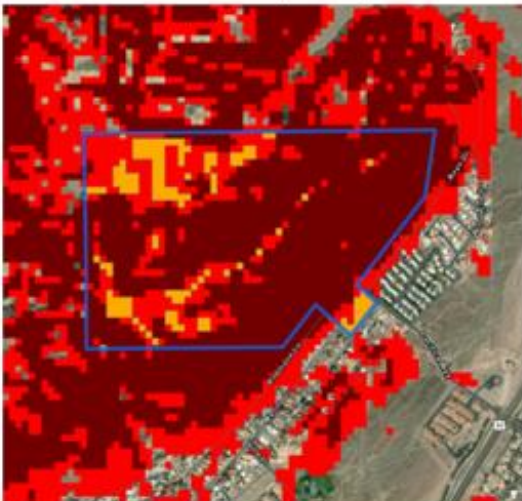
(a) Vacant parcel in ULI Inventory



(b) GISMO's slope map (slope >12%)



(c) Vacant parcel overlaid with slope map



(d) Portions of parcel <12%



Source: SNS ULI Data, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

*Exhibit 7: Example of Partially vacant (underutilized) parcel in ULI inventory
Henry & Evelyn Bozarth Elementary School (APN: 12613701016)*



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

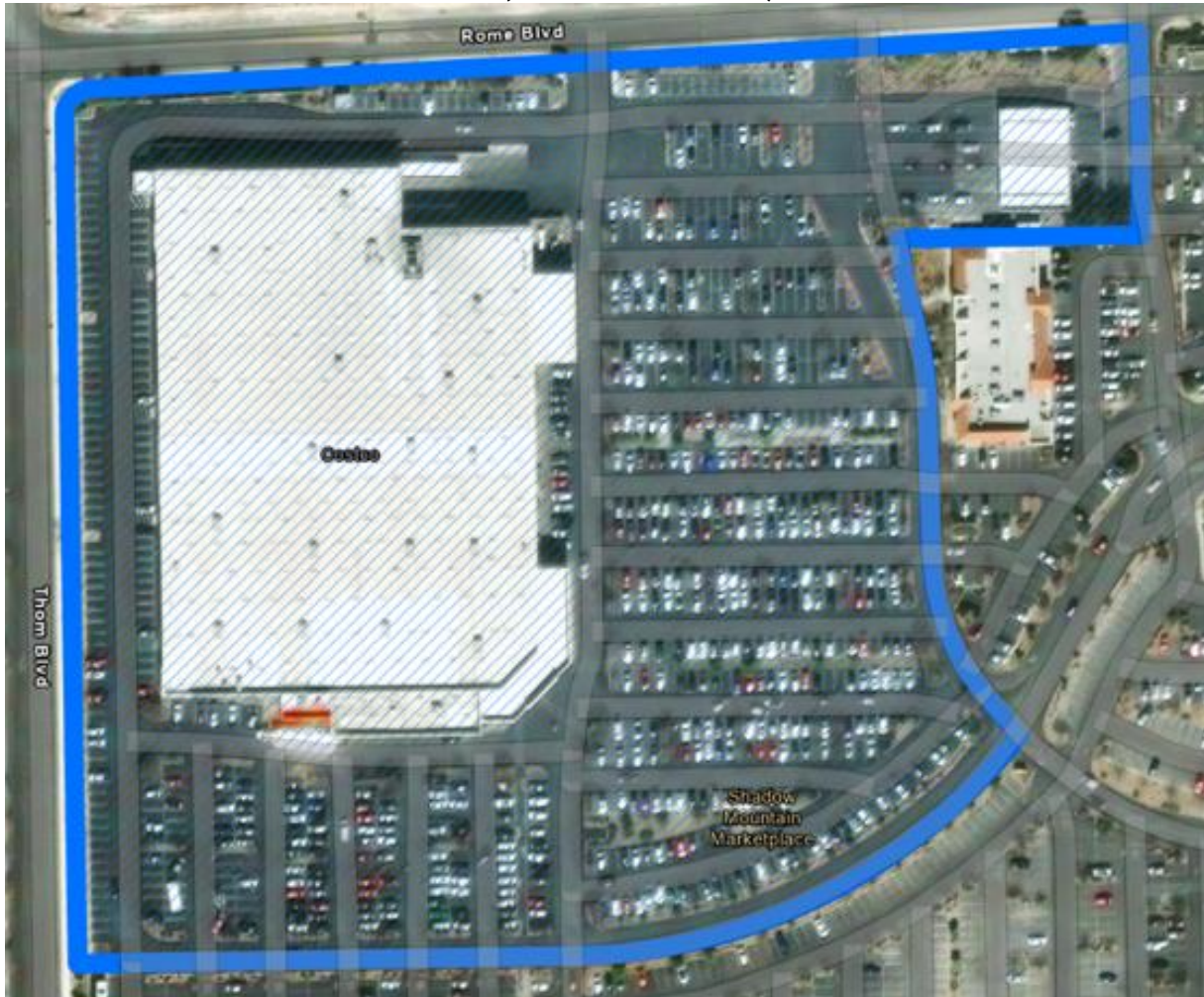
Exhibit 8: Example of Partially vacant (underutilized) parcel in ULI inventory Billy & Rosemary Vassiliadis Elementary School (APN: 13727813001)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

Exhibit 9: Example of Partially vacant (underutilized) parcel in ULI inventory Costco 6555 N Decatur Blvd. (APN: 12524811002)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

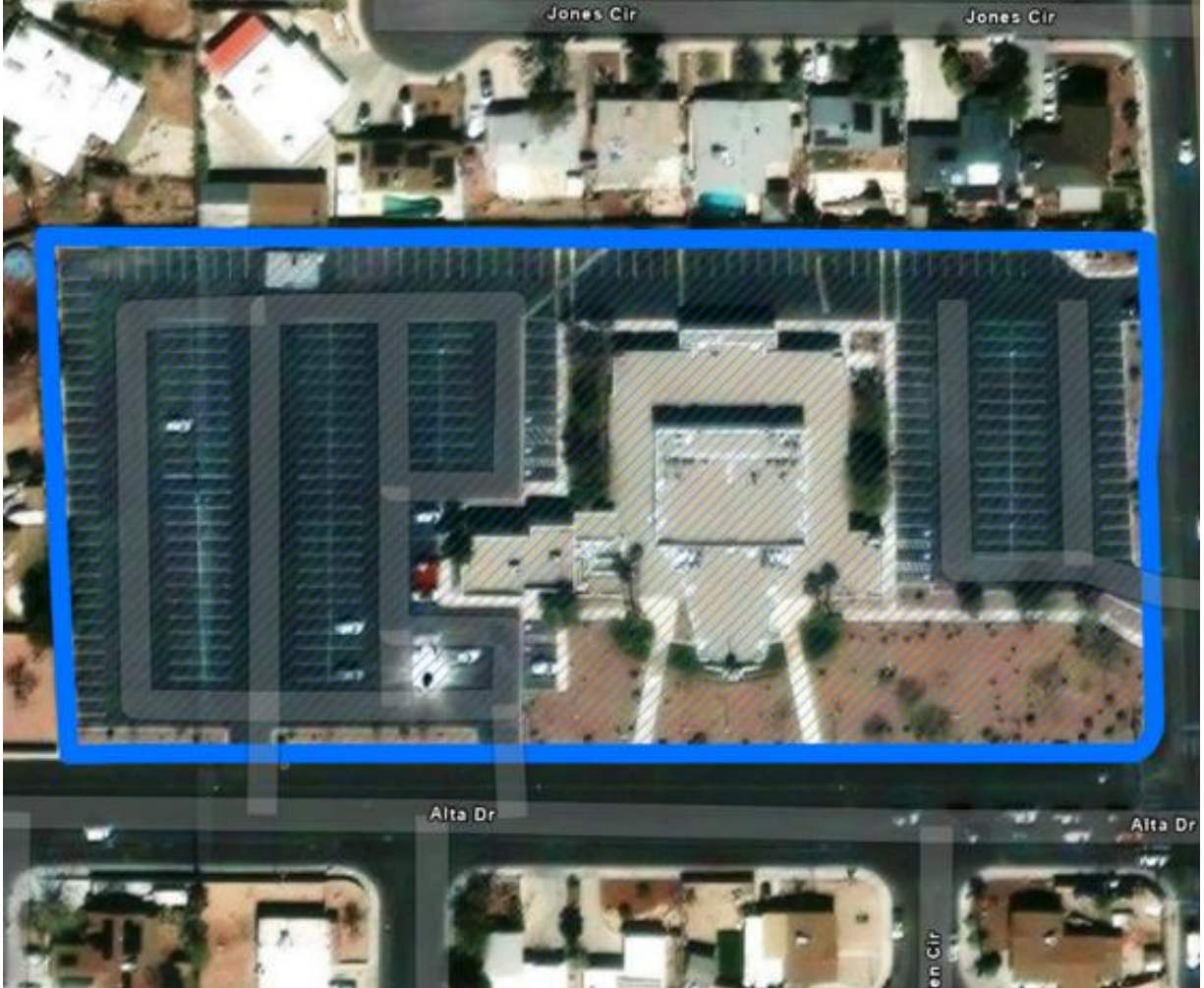
Exhibit 10: Example of Partially vacant (underutilized) parcel in ULI inventory West Wind Las Vegas Drive-In 4150 W Carey Ave. (APN: 13918801004)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

Exhibit 11: Example of Partially vacant (underutilized) parcel in ULI inventory The Church of Jesus Christ of Latter-day Saints 6100 Alta Dr. (APN: 13835616001)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

SOUTHERN NEVADA STRONG UNDERUTILIZED LAND INVENTORY REPORT REVIEW

Exhibit 12: Example of Partially vacant (underutilized) parcel in ULI inventory Guardian Angel Cathedral & The Roman Catholic Archdiocese of Las Vegas 302/336 Cathedral Way (APN: 16209804010)



Source: SNS ULI Data, Clark County GISMO, RCG Analysis.

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