University of Oregon

Community and Regional Planning

Developing a Methodology for Analyzing Buildable Lands in Teton County, WY

Author:

Bentley J. Regehr

Committee:

Bob Parker, Chair

Rebecca Lewis

Exit project submitted in fulfillment of the requirements for the degree of

Master of Community and Regional Planning

March 2017

Table of Contents

ACKNOWLEDGEMENTS

A special thank you to the Jackson Hole Conservation Alliance for funding and supporting this project. Special recognition is earned by Mary Gibson who allowed me great independence on the project, while using her years of expertise to guide me when it was needed.

This project would also not have been possible without the review and advice given by Todd Chase of the FCS Group and Alex Norton of the Town of Jackson.

I would also like to acknowledge my advisors for this project, Bob Parker and Rebecca Lewis, for their great support and the freedom they've allowed me to have in molding this project.

INTRODUCTION

The purpose of conducting a Buildable Lands Inventory (BLI) is to quantify the amount vacant and underdeveloped land available within a particular set of boundaries. In combination with other studies—notably a housing needs analysis, an economic profile, and growth projections—a BLI allows a community to determine whether there exists an adequate supply of buildable land to accommodate future development, and where particular deficiencies may exist. If it is determined that deficiencies exist, a community's governing bodies can make informed decisions and implement appropriate measures to provide for the projected unmet needs.

When there is not reliable and transparent data, a community may be unable to make consistent decisions that align with a long-term vision to meet these projected unmet needs. This has proven to be a constant cause of tension in Teton County, Wyoming. In contrast to many communities, Teton County does not have a set of instructions or established processes to rely on when conducting a BLI. While this is the case for most communities in Wyoming, the implications have special importance in Teton County, where over 97 percent of land is federally owned and unable to be developed. On top of the constrained land supply, Teton County has the distinction of being the most economically unequal metro area in the United States (Matthews, 2016). The limited land supply and the increasing crunch on the working class make the stakes of land use decisions higher than your typical rural community.

Location

Teton County is located on the western edge of Wyoming, covering a total area of 4,216 square miles. Over half the total area of the County is made up from land owned by Grand Teton National Park and Yellowstone National Park. Of the 23,215 residents in Teton County, 10,213 reside in the Town of Jackson. Jackson is the only incorporated town in the County, but there exist eight other census-designated places: Alta, Hoback, Kelly, Moose-Wilson, Rafter J Ranch, South Park, Teton Village, and Wilson. A growing number of the County's employees commute from adjacent Teton County, Idaho.

Though the Town of Jackson and Teton County have separate offices, planning efforts are usually coordinated. For example, past buildable land inventories and comprehensive plans have been a joint effort between Town and County. The County also has three ski resorts: Jackson Hole Mountain Resort, Snow King Mountain Resort, and Grand Targhee Resort. Each resort has its own master plan, which is approved by the County.

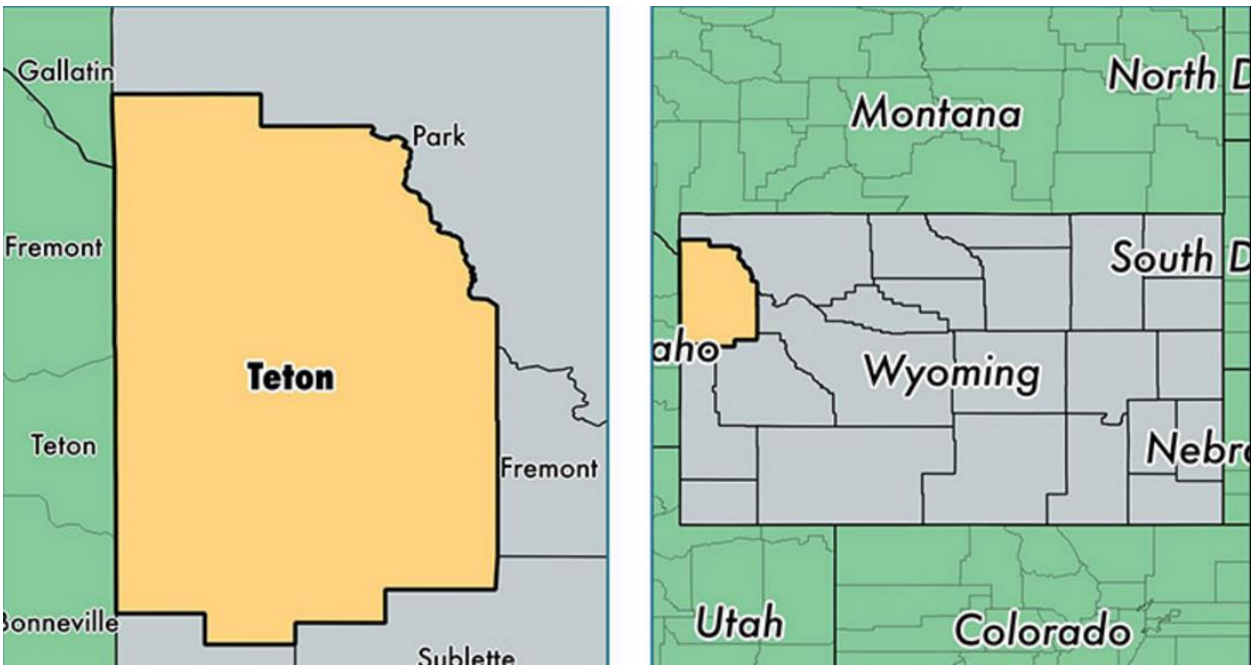


Figure 1: Location of Teton County, Wyoming. *Source: worldatlas.com*

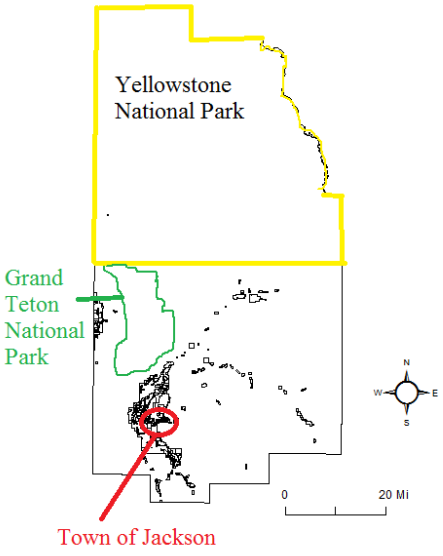


Figure 2: Teton County context map.

PURPOSE

In response to a complex set of circumstances, this masters project creates a model for studying and understanding land use conditions in Teton County through a synthesis of past, present, and future. A study of the past examines historical influences and previous studies, and how the area's relative new use of planning as a practice has produced imbalanced ownership patterns and inconsistent land inventory methods. The present is then explored through creating a template for conducting a BLI that draws from the examples provided by other communities, while tailoring it to the unique historical conditions of Teton County. A full land inventory assessment of Teton County is outlined that not only provides data on current conditions, but also clear and repeatable methodology for future assessments. Having a clear and repeatable methodology provides a consistent, and ultimately more valuable way, to analyze indicators and changing conditions over the long term.

The ultimate goals of the project can be summarized into several key research questions:

Past: What methodologies have been used in the past and how have historical influences impacted current conditions?

Present: What are the best methodologies to use in conducting a BLI in Teton County and how do they compare to past reports? What do current conditions tell us about the balance of buildable land in Teton County?

Future: What are the best practices for conducting future BLIs in Teton County? What are the important indicators that should be considered when analyzing future BLIs?

METHODOLOGY

Content Analysis

For the purposes of this report, content analysis refers to the research technique of making valid inferences through interpretation of textual material. It will be used in the following portions of the report:

- Analyzing past methodologies of land inventory assessments in Teton County. This includes the 2007 study conducted by Clarion Associates, the 2009 report conducted by Town and County staff (Appendix I of the 2012 Comprehensive Plan), and the 2009 report conducted by a buildout taskforce comprised of local planners and community members. Methodologies will be coded and compared through key identified themes and measurables.
- Analyzing the methods that studies and community reports identify as best practices for conducting a BLI. Synthesize the information to create a set of best practices suited to the particular needs of Teton County. Draw specific comparisons to justify selections.
- Analyzing the implications and indicators of land imbalances outlined in reports from similar communities. Extract key themes and indicators that are applicable to Teton County.

GIS

This report will utilize GIS to spatially quantify land use in Teton County and to provide visual representation of conditions. General parcel data is available through Teton County's GIS shapefile database, which contains tax assessor data. Tax assessor data is important when attempting to categorize parcels.

HISTORICAL INFLUENCES

James (1936) contends that the origin of contemporary land use issues in Jackson Hole can be traced back to the 1930s. Prior to this time, the area had been dominated by hunting and agriculture since settlement in the 1800s. Yellowstone had been established in 1872, but this was largely viewed as separate from the community of permanent residents further south in Jackson Hole. It would be the opportunity for tourism and a local sentiment toward conservation that would abruptly change the future of land use in Jackson Hole, and ultimately set the stage for future conflict. Some called for the removal of the settlement entirely to protect wildlife and natural systems, while others pushed for a diversified economy headed by tourism. A sort of compromise was reached beginning with the creation of Grand Teton National Park in 1929. Ten years later Snow King, the area's first resort, was opened and the transition to a tourist economy had taken hold. Conservation efforts remained stout, however, and Grand Teton National Park was expanded further in 1950. A valley that had once been primarily privately owned was now mostly public land. Today just three percent of land in Teton County is privately owned.

Growth in the valley was largely unregulated for decades, and planning efforts in Jackson Hole did not take hold until the late 1970s. A survey of attitudes toward land use disclosed that newer residents generally supported local government control in contrast to older residents and large landowners who favored control by the individual landowner (Cockerham, 1977). Newer residents had become the numerical majority and local government planning efforts came into existence, culminating in the adoption of the area's first land use

plan in 1978. However, the plan did not account for the massive growth seen in the 1980s and residents were concerned over the allowed suburbanization of rural lands.

As the decade drew to a close, residents of Teton County and the Town of Jackson recognized that they must soon act on their concerns to avoid losing the aspects that made the community special. Existing land development regulations were proving inadequate to deal with the increased pressures of development, and residents expressed the need for a system which would do a better job of managing Teton County's shifting development patterns. In 1989 and 1990, the Town and the County began independent information-gathering efforts to determine a consensus vision for Teton County's future. Town planners divided Jackson into seven neighborhood planning areas and conducted workshops that considered public input. In a series of meetings, citizens made it clear that they were not satisfied with the recent directions of the area's growth and development. The issues most often cited were increased traffic, commercial growth, and lack of affordable housing opportunities, all of which continue to plague the region today.

Narrowing in and reviewing regulations at the time shows much of Teton County's rural lands was zoned for one unit per three to six acres. Residents expressed concern that the regulations represented an awkward middle ground, where dividing rural lands into three- to six-acre lots does not preserve rural character and open space, nor does it provide the needed housing options. Additionally, many residents felt the community was becoming out of balance, with resort and commercial development far outpacing the growth of workforce units and other types of affordable housing. This was partly due to the fact that the County had honored entitlements that predated zoning regulations in 1978. In other words, the state of commercial

and residential ratios was caused by an initial imbalance that is irreversible, assuming the continued honoring of private entitlements. This is a key issue to be aware of and, in combination with other changing factors described in later sections, can help paint the current picture of imbalance.

Ultimately, in 1994 the Town of Jackson and Teton County adopted a much more substantial and comprehensive plan to manage growth, particularly in rural area. New zoning regulations were adopted to protect rural and agricultural land, while directing growth into the Town of Jackson and other "complete neighborhoods" in the County. The most recent version of the Comprehensive Plan (2012) still primarily relies on the elements from the 1994 plan.

While it was a substantial step in the right direction, many of the same problems persisted. Lurie & Clark (1997) discuss how the 1994 plan proved to be insufficient in controlling growth, preserving community character, and providing adequate housing. Capacity and development patterns were largely misinterpreted by residents and planning staff alike because of inconsistent methodologies and lack of concrete long term planning based on exact location and amount of capacity. It can be argued that much of this is due to the absence of a consistent inventory report that can be relied upon to provide accurate data. This necessitated the creation of this report, which focuses on gaining a greater understanding through the examination of methods used in Teton County buildable land inventories since 2007, and how a more realistic picture can be formulated through improved methodology and analysis.

ANALYZING DIFFERENCES IN APPROACHES

Over the past decade, the previously discussed issues that have long plagued the County – namely providing housing, while maintaining social and rural character – have began to worsen at an increasing rate. Not unnoticed by planning staff, multiple buildable land inventory reports have been produced as the Town and County attempt to make informed decisions. However, varying methodologies have produced varying results, leaving decision makers unable to commit to long term plans.

There have been four buildable land inventory studies since 2007:

1. Study conducted by Clarion Associates completed April 2007.
2. Appendix I of the 2012 Comprehensive Plan conducted by Town and County staff completed April 2009.
3. Study conducted by a "Buildout Taskforce", consisting of local developers, Town and County planning staff, and other select citizens. Completed September 2009.
4. Study conducted by the Jackson Hole Conservation Alliance in conjunction with this project.

Examining Approaches

"*Land Market Monitoring for Smart Growth*" by Knapp, et al. (2001) provided a basis for broad analysis of methods used in each of the studies. Fifteen prominent academic planners and practitioners contributed to the book, making it one of the preeminent resources for conducting land monitoring studies. Carol Hall of the Metro Data Resource Center in Portland,

Oregon describes the three main levels of methodologies for conducting a vacant land inventory.

Table 1: Categories of Buildable Lands Methodologies			
	Unit of Measure	Methods	Notes
Level One	Study area subunits (Census tracts)	Use of a land coverage classification system to produce aggregate statistics for geographic subunits.	Low level of accuracy, but suitable for providing general estimates.
Level Two	Tax Lots	Use county assessor's vacant land and improvement value data to identify undeveloped tax lots and estimate the amount of undeveloped land on partially developed lots.	Potentially high level of accuracy depending on quality of assessor data. Relies on a determining factor to estimate partially vacant lots, which introduces a margin of error.
Level Three	Tax Lots, combined with partial tax lots	Use of GIS tax lot base layers to identify undeveloped and partially developed tax lots. Corroborate with assessor vacant land and improvement value data. Use of aerial imagery when necessary.	Small unit of measure results and high level of accuracy. More time intensive.

Level One methodology describes the methods used by Clarion Associates in 2007. The study used census tracts to provide a general overview of the amount of available land in each general land category. Analysis at the parcel level was not considered. This is a strategy used by many other rural communities, as it is not time or resource intensive. It is typically suitable for rural communities, but resort communities such as Jackson Hole, demand a more detailed analysis due to more extreme constraints, a scarcity of buildable land, and a competitive market. Residents soon called for a more in-depth analysis.

A more in-depth analysis eventually came in the form of a 2009 study conducted by Town and County staff. The study used elements from Level One and Level Two analysis: it combined building permit data, assessor data, and census data to create a mix of parcel level analysis in some areas and general analysis in other areas. Feedback came swiftly, and a call was made for parcel level analysis for the entire County.

In response, a "Buildout Taskforce" was created in the summer of 2009 to calculate absolute buildout potential at a parcel level. This proved to be a shift to Level Two analysis, with elements of Level Three methodology. The potential for each parcel was calculated, with parcels in question having on-site visits. Parcels were documented into an extensive spreadsheet with appraisal data that would later be used to create a GIS database. Unlike previous studies, mixed use redevelopment was also calculated based on assumptions discussed later. The "Buildout Taskforce" study was a definite improvement in accuracy, but concerns persisted over vague methodology and a disconnect between market conditions and the land supply reported by the study.

This report relied on Level Three analysis to produce a clearer and more repeatable methodology that ultimately leads to a more accurate portrayal of land use conditions. The key enhancement over Level Two analysis is the number of sources considered. Sources used in this study included use of GIS tax lot base layers to identify undeveloped and partially developed tax lots, corroboration with assessor data, and extensive use of aerial imagery. Development and redevelopment trends were also factored in to create a buildout timeline.

Methods Used for this Study

Consistent with the Level Three approach described above, the BLI for this study followed an established comprehensive structure. Although there are specific aspects that must tailored to the data and conditions in Teton County, the general basis for conducting the study followed the five-step process common to a Level Three approach:

1. Determining the study area and land base.

2. Classifying land into mutually exclusive categories by development status.

3. Deducting land with development constraints.

4. Developing tabular and graphic summaries of lands by classification and plan designation.

5. Estimating land holding capacity in terms of dwellings, commercial square footage, and employees.

Classifying Land

Classification of land occurred on two levels: the status of the parcel and the zone type. The status of each parcel was determined to be either vacant, partially vacant, developed, redevelopable, constrained, or public land.

Vacant: land without structures or other significant man-made improvements. If the parcel had an improvement value less than $5,000 and had no visibly significant structures, it was deemed vacant.

Partially vacant: land that has development, but is underutilized per zoning allowances. For commercial zones, this means parcels with an undeveloped area greater than 3,250 square feet with improvement value greater than $5,000 that have a developable remainder. For residential zones, this means parcels that have an existing unit, but potential for additional units under current zoning. For example, a 40,000 square foot lot with one existing unit located in a zone that has a minimum lot size per unit of 12,000 square feet, would have a potentially for two additional units.

Developed: the parcel has existing development and an improvement value that does not make it suitable for redevelopment.

Redevelopable: the parcel has developed structures with improvement value to land value ratios that make them viable target for redevelopment. Refer to the section “Calculating Commercial Redevelopment Potential” on page 35 for a full explanation of calculating redevelopment potential.

Constrained: Parcels that have limited development potential due to steep slopes, wetlands, waterways, and easements. Constraints were calculated using standards from the Teton County Land Development Regulations.

Public: publicly owned parcels such as parks, governmental, or public facilities are considered unavailable for development.

Once each parcel was given a status, it was further classified by zone type to better understand where development potential exists in the Town and County. Zone types are set forth by the Teton County Land Development Regulations and are summarized in Table 2.

Table 2: Summary of Zone Types		
Zone	**Abbreviation**	**Notes**
Suburban	S	Single family with minimum lot size of 12,000 sq. ft.
Urban Residential	UR	High density multi-family residential with maximum density of 23.5 units per acre using cluster bonuses.
Urban Commercial	UC, UC-2	Mix of development of lodging, restaurants, financial, retail, and visitor-oriented services. Mixed use development allowed.
Auto-Urban Residential	AR	Moderate density residential with maximum density of 11.7 units per acres using cluster bonuses. More automobile oriented than UR.
Neighborhood Conservation	NC	Maintain existing character. Not applied to vacant land.
Neighborhood Conservation – Planned Unit Development	NC-PUD	Maintain existing character of planned development.
Business Park	BP	Industrial, wholesaling, distribution, and service commercial.
Residential Business	RB	Small scale businesses on lots where the principal use is residential.
Office Professional	OP, OP-2	Office use
Auto-Urban Commercial	AC	Commercial development with access tailored to automobiles
Rural Residential – Town	R-TOJ	Preserves the existing character in rural areas of the Town of Jackson, typified by expansive open areas and natural features. Minimum lot size 12,000 square feet.
Rural - County	R1, R2, R3	Parcel is determined to be R1, R2, or R3 based on size and character of parcel. R1 represents largest parcels, usually over 100 acres in size. R3 usually represents parcels under 35 acres.

Matrix of Existing Zones and Neighborhood Form

2012 PLAN NEIGHBORHOOD FORMS	Existing Zoning Districts											
	UC	UR	AR	AC	SR	R	BC	NC	OP	RB	PR	BP
Preservation					X	X	X	X			X	
Agriculture						X	X	X				
Clustering						X	X	X			X	
Habitat/Scenic						X	X	X			X	
Conservation			X	X	X	X	X	X			X	X
Residential			X	X	X	X	X	X			X	
Village	X	X	X	X	X	X	X	X	X	X	X	X
Village Center		X	X	X	X	X		X			X	X
Town	X		X	X	X						X	
Resort/Civic			X	X		X		X			X	

Figure 3: Neighborhood Form of Zone Types. Source: Teton County LDRs.

Constraints

There are several constraints and limitations to contend with when conducting a BLI, and this study faced many of the typical challenges:

1. Limitation and interpretation of existing data sources. This study used tax assessment data and the County's GIS database as the basis for much of its analysis. Aerial imagery, master plans, and HOA plans were then used to overrule any discrepancies or suspicious parcel data. There are likely small errors in interpretation, but the study aimed to achieve the highest standard of accuracy possible by using a variety of sources.
2. Redevelopment potential is difficult to predict due to uncertainties of market and ownership conditions. This study attempted to portray the most realistic projections by using a formula from established by the City of Eugene, and through collaboration with a local realtor.

3. There does not currently exist an extensive housing needs study or market analysis study for the Town or County. This limits the ability of this study to make highly accurate projections for demand and projected need of specific development types. Projections could only be based on the data available.

Defining Capacity

The way in which capacity is defined has a vital impact on how data is presented and largely affects the "story" told by the inventory report. Knapp, et al. (2001) presents three different ways of defining capacity: zoned capacity, planned capacity, and capacity based on development trends.

Zoned Capacity provides a tool to evaluate raw land capacity for *existing* zoning. It does not consider future goals or plans for units in neighborhoods if those neighborhoods are not yet zoned to accommodate the goal capacity. Zoned capacity is reliable and has a high level of certainty, assuming zoning does not drastically change. This is largely what this study relied on.

Unlike zoned capacity, planned capacity does consider future goals and plans that can be reasonably projected to occur. There is obviously more uncertainty with this measurement, but in many cases, it can provide a more realistic outlook if future goals can be reasonably counted upon. Planned capacity also requires a temporal element to have substance. It is not enough to say that a jurisdiction plans for a particular number of units at some point. A more valuable way of using planned capacity is to assert the jurisdiction intends for 'x' number of units to be developed in this specific location during a particular time range. Town and County reports included planned capacity but did not give a timeframe, leading to a great deal of uncertainty.

Capacity based on past development trends is another way to make projections. By using concrete data from actual on-the-ground development that has taken place, this type of projection can be used with some level of confidence. It is most appropriate when zoned capacity is unlikely to be met in a reasonable timeframe and development patterns are not expected to drastically change. In the case of this study, development trends were used for agriculture land and accessory residential units because trends in those areas were steady and the absolute nature of zoned capacity did not portray likely development.

Comparing Major Differences

Table 3: Floor Area Ratio Standards and Snow King Resort Potential

	Clarion Associates	Appendix I 2012 Comprehensive Plan	Town and County Buildout Taskforce	This Study
Date Completed	April 2007	April 2009	September 2009	September 2016
UC/UC-2 FAR[1]	0.65	0.80, 1.30	0.80, 1.30	0.80, 1.30
AC FAR	0.25	0.325	0.325	0.325
AC/LO FAR	0.25	0.65	0.65	0.65
OP/OP-2 FAR	0.65	0.46, 0.65	0.46, 0.65	0.46, 0.65
Snow King Resort Potential	395,000 sf	680,000 sf	532,155 sf	569,918 sf

[1] Floor Area Ratio (FAR) standards can be found in the Town and County Land Development Regulations (last updated 1/1/15). See Appendix for a summary of zone names and their associated FAR standards.

Table 4: Summary of Methodological Differences				
	Clarion Associates	**Appendix I 2012 Comprehensive Plan**	**Town and County Buildout Taskforce**	**This Study**
Date Completed	April 2007	April 2009	September 2009	September 2016
Data Source	2000 Census	Assessor Data	Assessor Data	Assessor Data
	Building Permits	Building Permits	Building Permits	Building Permits
				Satellite Imagery
				HOA website data
				Data from Local Realtor
Specificity	General Zone/Acreage*	Mix of parcel by parcel and general zone*	Parcel by parcel	Parcel by parcel
Mix of Use Considered for Redevelopment/Infill	No mix of use considered	No mix of use considered	3:1 Commercial - Residential ratio for select areas	3:1 and 2:1 Commercial - Residential ratio scenarios provided
Planned Residential Development	Not Considered	Included (General)	Included (Breakdown by development)	Included (Breakdown by development)
Land Efficiency Assumption	None	None	None	Yes[2]
Agriculture Development Assumption	Total Ag. Area multiplied by Units per Acre Allowed	Max Allowable Development Acheived	Max Allowable Development Acheived	Based on development trends
Accessory Residential Unit (ARU) Assumption	ARUs not considered	Max allowable ARU allotment acheived	Max allowable ARU allotment acheived	Based on development trends
Floating Units Assumption*	Floating units did not exist at time of study	Floating units counted as capacity	Floating units counted as capacity	Capacity presented in both scenarios (counting and not counting floating units)

[2] Based on *Analysis of Land Use Efficiency in Oregon Cities,* University of Oregon Community Service Center, 2015

Some of the differences in studies were simply a matter of regulations changing over time, as seen in Table 3. This includes updates to FAR regulations in commercial zones and the amount of allowable floor space in resorts, namely Snow King. However, many of the other differences listed in Table 4 are independent of time and are a product of differing methodologies. These specifically include:

1. *The type and number of data sources used*. The Clarion study used general Census data and building permits, and the findings in 2012 Comprehensive Plan Appendix I and the Buildout Taskforce used assessor data and building permits. Meanwhile, this study utilized an abundance of sources including assessor data, building permits, GIS, Satellite Imagery, Homeowners Association website data, and data from a local realtor to verify and substantiate findings.
2. *Specificity*. As touched on in the previous section, the Clarion study used Level One methodology resulting in general zone and acreage calculations, the 2012 Comprehensive Plan Appendix I findings used a mix of general zone-based calculations and parcel analysis, and the Buildout Taskforce and this study used only parcel level analysis.
3. *Mix of Use Considered for Redevelopment and Infill.* The Clarion report and the data reported by Appendix I of the 2012 Comprehensive Plan did not consider mix of use. In other words, a commercial zone was assumed to only have commercial potential, and not any mixed-use potential. The Buildout Taskforce used an assumption that for every three square feet of commercial development in zones where mixed use is allowed, one

square foot of residential development would occur. The Town and County have more recently discussed moving from a 3:1 mixed use development ratio to a 2:1 ratio, where for every two square feet of commercial development, one square foot of residential development would occur. This study presents data in the case of both the 3:1 and 2:1 assumption.

4. *Land Efficiency Assumptions*. An inherent "under-build" factor always exists. The maximum density allowed by zoning regulations is rarely reached and factoring this into to projected calculations can provide a more realistic portrayal of likely development potential. All past studies prior to this one assumed maximum land efficiency, while this study assumed inefficiencies.
5. *Agriculture Development Assumptions*. Prior studies measured zoned capacity and assumed maximum development on agriculture land as part of the residential inventory. Since development on agriculture land is extremely scarce (5 residential units built in Teton County between 2006 and 2015), it can be misleading to use it as part of total inventory. Instead, this study used agriculture development trends to project inventory on a fixed timeline.
6. *Accessory Residential Unit Assumption*. Accessory Residential Units (ARUs) were not considered in the Clarion report. Appendix I of the 2012 Comprehensive Plan, as well as the Buildout Taskforce made the assumption that every property that is allowed an ARU would construct one. Currently the County rural zones allow single family parcels to construct ARUs. This results in thousands of extra potential units that are unlikely to be

realized on a realistic timeline. This study used past development trends to estimate a likely number of ARUs over a twenty-year timeline.

7. *Floating Units Assumption*. 2016 updates to rural land development regulations have removed 2,447 potential residential units from rural zones in the County. Additionally, the creation of new conservation easements removes potential from rural zones. Appendix I of the 2012 Comprehensive Plan and the Buildout Taskforce study count these removed potential units as "floating units" that will eventually go into complete neighborhoods. Since this is not current "on-ground" potential, this study distinguishes the difference. The goal of this study was to show currently existing potential, not aspirational potential.

RESULTS OF STUDY

Residential – Town of Jackson

Vacant Potential

The first step was using GIS to separate and display residential parcels based on three categories: parcels already containing development, vacant parcels, and unbuildable lands. Fortunately, Greenwood Mapping, Inc. already had a shapefile that separated residential, commercial, agriculture, and public parcels according to assessor data. After inputting and manipulating the data, a map of the Town could be formed showing the three categories. Each parcel was checked through Google Earth and aerial images provided by the County. Questionable parcels and parcels with boundary errors were modified or eliminated. These were errors from the original shapefile that had to be proofed. The use of multiple sources to proof the parcel data is representative of Level Three analysis, and is an extra step not used in previous studies. Figure 3 shows the resulting map.

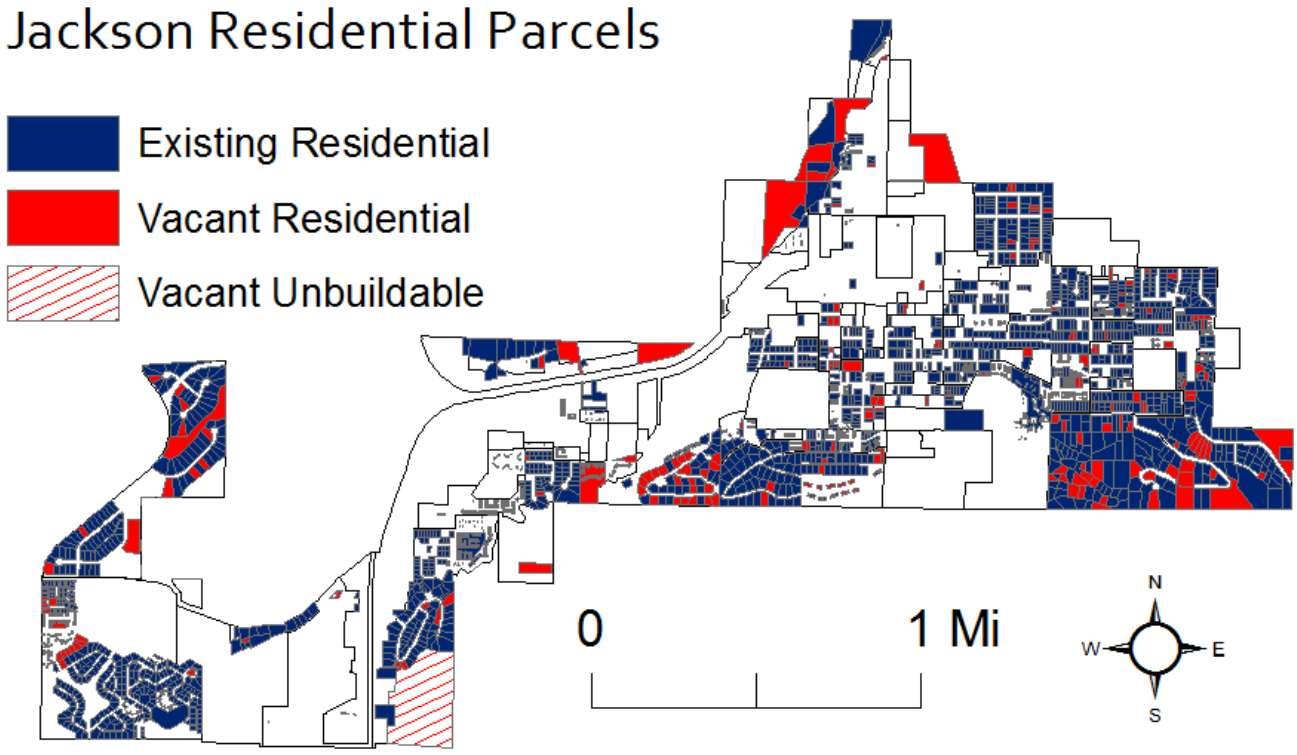


Figure 4: Jackson Residential Parcels

*Vacant unbuildable refers to vacant parcels that do not have development potential due to slopes exceeding 25%. There were no unbuildable residential lands due to other features, including water.

Next, GIS was used to show vacant parcels by zone. This is important when attempting to calculate development potential, as each of the Town's twelve zones have different development regulations. It also provides a strong visual for where vacant potential is located and the zones that may be lacking potential. Table 4 displays the calculated potential for the Town's vacant parcels, separated by zone.

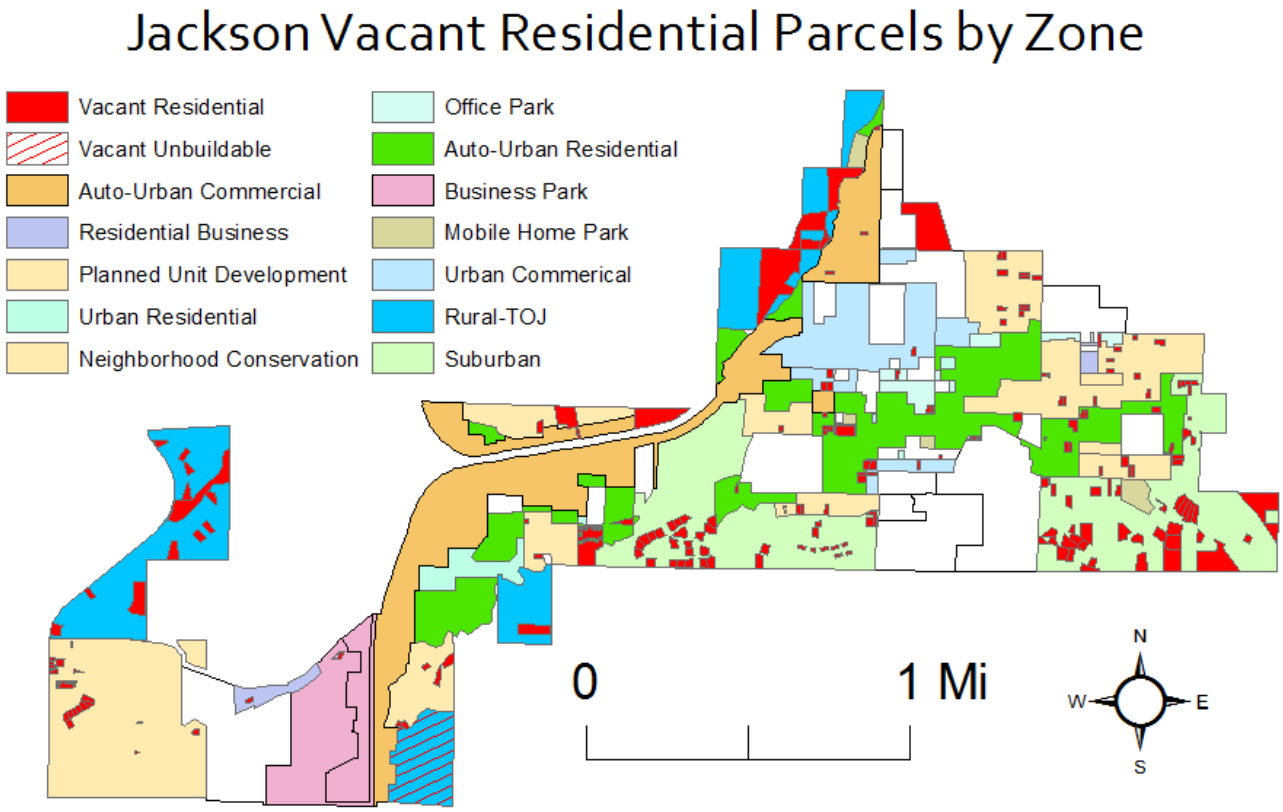


Figure 5: Jackson Residential Parcels by Zone

Table 4: Town of Jackson Vacant Residential Land			
Zone	**Parcels**	**Acres**	**Dwelling Unit Capacity[3]**
Suburban (S)	86	51.16	86-156[4]
Urban Residential (UR)	2	11.03	213[5]
Urban Commercial (UC, UC-2)	8	2.20	33
Auto-Urban Residential (AR)	24	5.55	26
Neighborhood Conservation (NC)	47	22.42	51
Neighborhood Conservation – Planned Unit Development (NC-PUD)	22	4.58	22
Business Park (BP)	1	0.18	1
Residential Business (RB)	1	0.19	1
Office Professional (OP, OP-2)	3	0.43	3
Auto-Urban Commercial (AC)	2	0.36	2
Rural Residential – Town (R-TOJ)	18	37.40	18
ALL ZONES	**214**	**133.50**	**456-526**

[3] Setback regulations set forth by Town of Jackson LDRs were factored into analysis.
[4] The maximum value of 156 suburban units assumes subdivision through urban cluster development (35% ratio)
[5] 213 Urban Residential units based on maximum allowed urban cluster development of 23.5 du/acre.

Partially Vacant Parcels

There also exists potential on partially developed parcels. Partially developed parcels are parcels that have room for additional development under current zoning regulations. There is greater uncertainty for these parcels compared to vacant land because there are several factors that potentially make infill or redevelopment unlikely to occur.[6]

Table 5: Town of Jackson Additional Potential on Partially Vacant Residential Parcels	
Zone Type	**Dwelling Unit Capacity**
Single Family	152
Multi-Family	1,401
Total	1,553

Mixed Use Potential

In addition to potential on pure residentially zoned parcels, the Town has identified five districts that are appropriate for mixed use development. Mixed use development is key for the Town moving forward, as it is a way to address housing, particularly affordable housing. There exists 213 to 336 potential residential units from redevelopment/infill in the Central Business District, South Cache/Snow King, North Cache, Karns Meadow, and Southeast mixed use districts.[7] This was calculated based on a "75% commercial/25% residential" redevelopment ratio. Shifting from a 3:1 to a 2:1 commercial/residential redevelopment ratio would yield 284 to 448 potential units in these districts, an increase of 71 to 112 additional units. It should be noted that these ratios are simply targets and are not required of developers.

[6] This is issue is discussed in detail at the end of this section.
[7] These potential Mixed Use Districts were identified by the Buildout Taskforce.

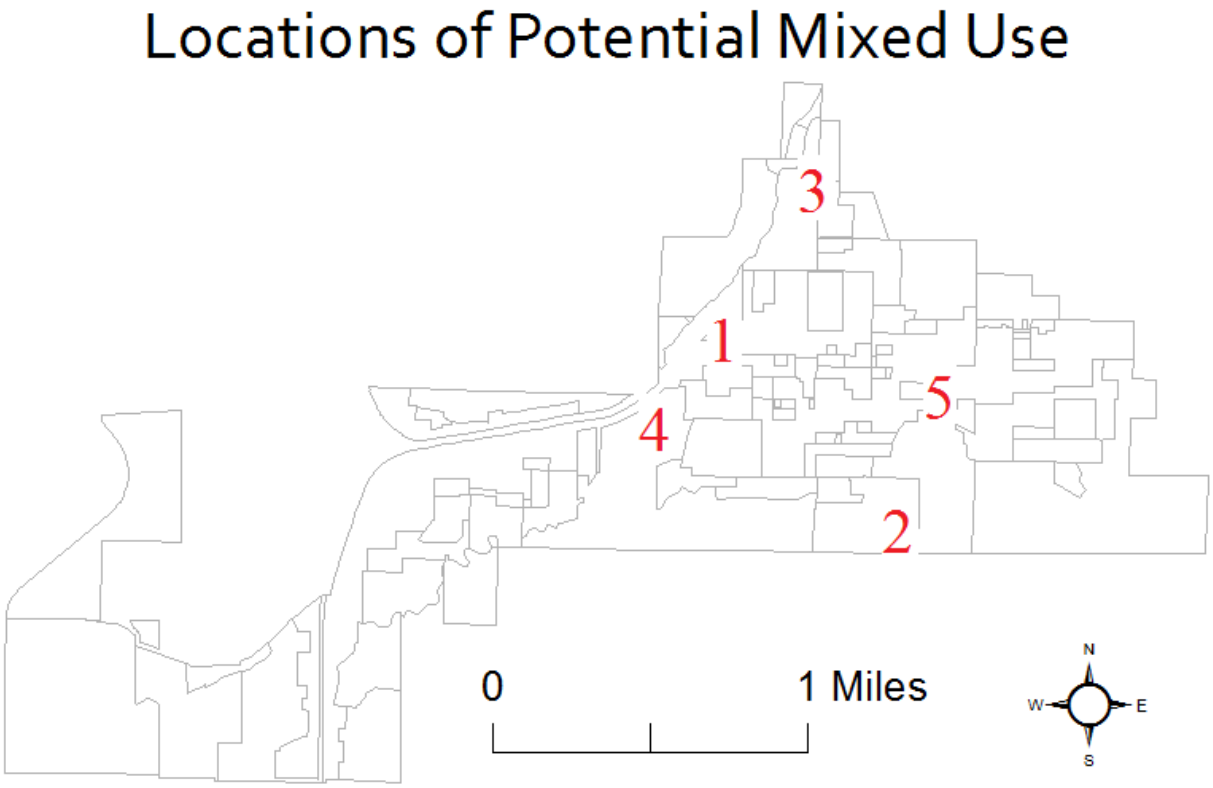


Figure 6: Locations of Potential Mixed Use

1. Central Business District
2. South Cache/Snow King
3. North Cache
4. Karns Meadow
5. Southeast (District 20)

Applying a Land Efficiency Standard

There is always an "under-build" factor, meaning development will never reach 100 percent of zoned capacity. Currently, the Town's developed parcels have an average of 3.1 units per acre on single family and 9.6 units per acre on multi-family. This is compared to an average of 4.62 units per acre on single family and 6.36 units per acre for similarly sized towns in Oregon (5,000 to 9,999 residents)[8]. There is little room for increased density on single family zones because zoning regulations allow a maximum of four units per acre. It was optimistically assumed that density on single family zones could reach ninety percent of potential, or 3.6 units per acre. Multi-family has more room for increased density, as density bonuses for clustered development allow for a maximum of 23.5 acres per unit. Large cities in Oregon (over 50,000 residents) have an average multi-family density of 14.47 units per acre. For this study, it was optimistically assumed that maximum potential in multi-family zones is equal to the average multi-family density for large cities in Oregon. This should be viewed as an upper bound.

Table 6: Town of Jackson Potential on Vacant Residential Parcels		
Zone Type	**Dwelling Unit Capacity Allowed by Zoning**	**Capacity After Applying Efficiency Standard**
Single Family	147	132
Multi-Family	213	133
Total	360	265

Table 7: Town of Jackson Additional Potential on Partially Developed Residential Parcels		
Zone Type	**Dwelling Unit Capacity Allowed by Zoning**	**Capacity After Applying Efficiency Standard**
Single Family	152	41
Multi-Family	1,401	621
Total	1,553	662

[8] *Analysis of Land Use Efficiency in Oregon Cities* (2015), University of Oregon Community Service Center

Residential – County

A similar approach was used to calculate the residential potential for the County that did not involve agriculture land or accessory residential units. A summary table is shown here (Table 8), but full breakdown of potential by zone is included in Appendix D.

Table 8: Teton County Non-Agriculture Residential Potential	
	Dwelling Unit Capacity
Vacant Capacity	1,645
Additional Capacity on Developed Parcels	41
Total	1,686

For agriculture land and accessory residential units (ARUs), development trends were used to project contributions to the residential inventory over a twenty-year period. Projections were based on five units added between 2006 and 2015 on agriculture land and an average of six ARUs added per year between 2007 and 2014. This gives a more accurate representation of "realistic capacity" than using true zoned capacity. Using true zoned capacity would yield a potential of 517 units on agriculture land and over 1,000 ARUs, even though neither of these come close to being reached in the near future.

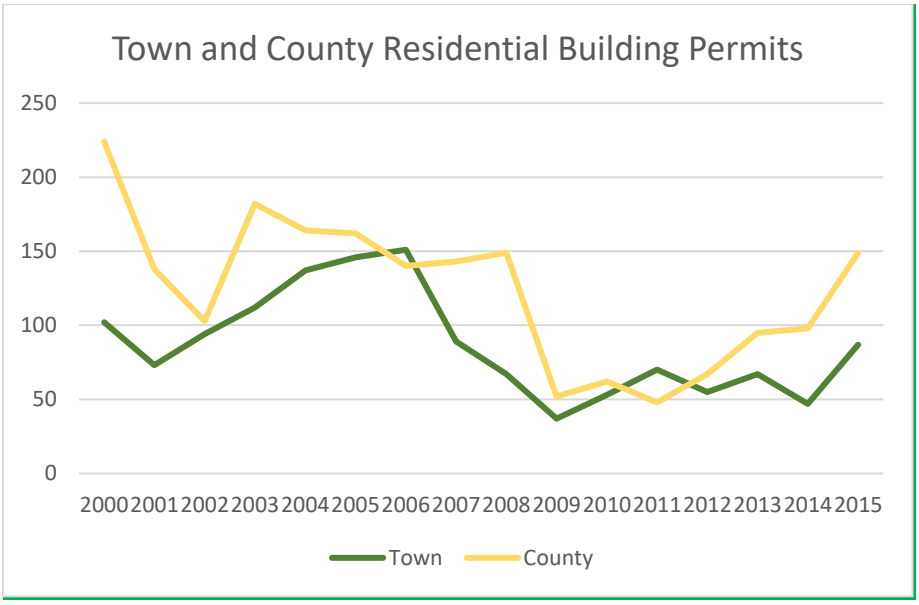
Table 9: Teton County Projected Twenty-Year Residential Contributions from Agriculture and ARUs	
	Dwelling Unit Capacity
Vacant Capacity	12
Additional Capacity on Developed Parcels	120
Total	132

Residential Projections

Growth Trends

After growth bottomed out in 2009, Teton County and Jackson have seen relatively stable positive residential growth since, with the County having a slightly greater upward projection. Projections based on trends since 2010 is tool for projecting future land development, assuming stable growth.

Single family development in the Town has shown more annual stability than multi-family development, mostly due to multi-family projects producing units en masse. Hence single units are more projectable on an annual basis, but multi-family is still highly projectable on a longer scale.



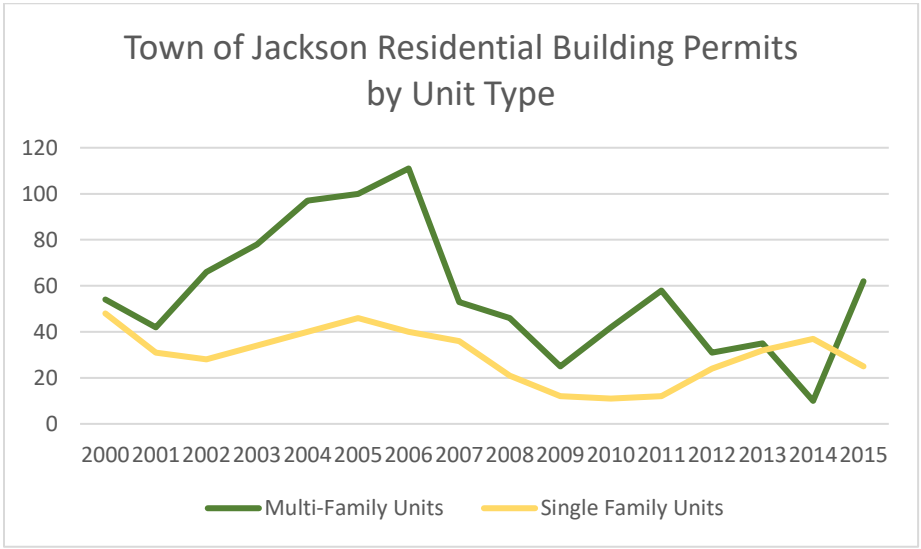


Table 10: Town of Jackson Average Annual Residential Growth 2010 to 2015	
Total New Dwelling Units per Year	63.2
New Multi-Family Dwelling Units per Year	39.7
New Single Family Dwelling Units per Year	23.5

Table 11: Town of Jackson Residential Supply*	
Multi-Family Supply	15 to 18 years
Single Family Supply	6 to 9 years

*Based on Annual Residential Growth from 2010 to 2015.

Table 12: Unincorporated Teton County Residential Land Supply Projections*	
2010-2015 New Dwelling Units per Year	86.5
Residential Supply	19 years

*County assumes one unit per vacant residential parcel, including those located on conservation easements. County supply drops to 15 years if assumed that no development occurs on conservation easements.

The land supply projections displayed are based on a constrained land supply, not an unlimited one. They are based on the currently constrained conditions and current zoning and development regulations. A market study completed by FCS Group in 2015 reported that the unconstrained free market demand in the Town of Jackson is 119 dwelling units per year. This is clearly well above the 63 average annual units being constructed from 2010 to 2015, and the discrepancy helps explain rising demand and subsequent housing costs.

Despite fluctuations in the overall yearly growth, certain ratios have remained relatively constant and are therefore highly projectable. In the Town of Jackson, 34 percent of new residential units have been single family units since 2010. This is consistent with the 37 percent seen in the previous decade, and this ratio also sees little variation on a bi-yearly basis. Another constant is the ratio of residential units built on unincorporated lands and in the Town of

Jackson. Since 2010, 1.37 units have been built on unincorporated lands for every one unit built within Town limits. This is comparable to the 1.42 ratio seen from 2000 to 2009.[9]

Extrapolating from this data particular concerns begin to emerge, namely the extremely constrained supply of single family housing within the Town of Jackson - just six to nine years even under currently constrained conditions. Assuming the trend of approximately a third of new units in Jackson being single family, it can be projected that single-family supply will be exhausted before multi-family. This is a problem that will be difficult to address within the town's footprint, as the potential issue of single family capacity cannot be solved through redevelopment or up-zoning to the extent that multi-family capacity can. Almost undoubtedly, Jackson's demand for single family housing will eventually spill over onto neighboring lands within the county. In order to protect the rural character of Teton County, having thoughtful plans that take advantage of density bonuses and complete neighborhoods will be vital.

[9] Tetonwyo.org

Commercial – Town of Jackson

A similar approach was taken in identifying commercial vacant potential. The results are outlined below.

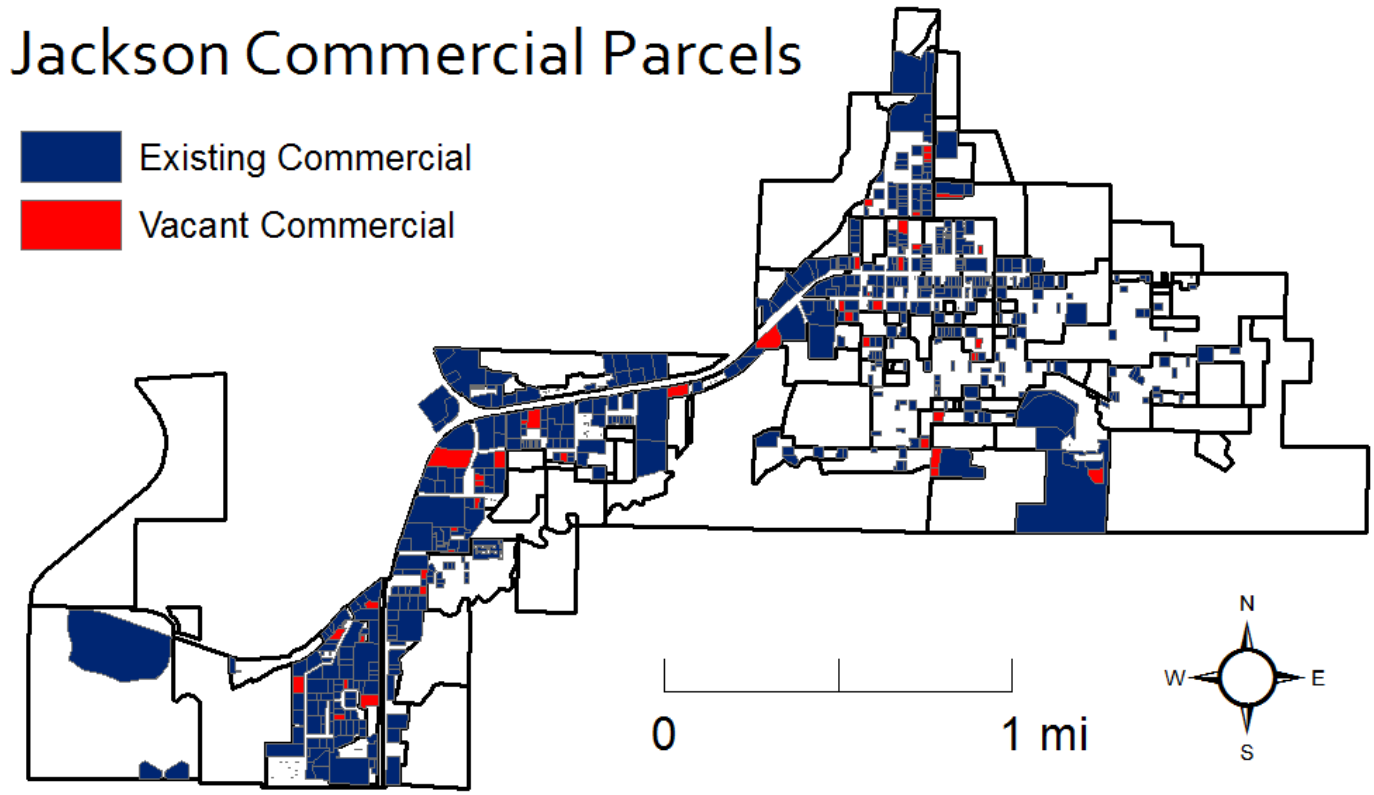


Figure 7: Jackson Commercial Parcels

Not shown in the map is the vacant commercial land within Snow King Resort. This is due to Snow King's "floating" entitlements, where exact locations are not owned, but rather entitlement to a particular total square footage.

Table 13: Town of Jackson Commercial Vacant Land			
Zone	**Parcels**	**Acres**	**Build Potential (sq. ft.)**
Auto-Urban Commercial (AC)	18	12.87	266,574
Urban Commercial (UC)	12	4.66	215,156
Business Park (BP)	7	4.03	62,491
Office Professional (OP)	3	0.60	12,023
NON-RESORT TOTAL	40	22.16	556,224
Snow King	-	-	569,918
TOTAL BUILDOUT POTENTIAL (ALL ZONES): 1,126,162			

- Build potential for vacant commercial parcels was calculated using the Floor Area Ratio (FAR) standards set forth by the Town of Jackson Land Development Regulations.

- Build potential for Snow King was based on the Snow King Master Plan, subtracting existing development from the total allowable development. Total allowable potential outlined by the Snow King Master Plan is 915,000 sq. ft. Build potential for other resorts in the County was calculated in a similar fashion.

Table 14: Snow King Remaining Development Potential	
Hotel	136,000 sq. ft.
Love Ridge Buildings 24-36	81,354 sq. ft.
Grand View Condominium Buildings 48-52	41,131 sq. ft.
Grand View Lodge and Spa	32,097 sq. ft.
Pine Lodge Lots 1 & 2	57,000 sq. ft.
DEVELOPED	**347,582 sq. ft.**
Hotel Parcel	50,000 sq. ft.
Lot 53	55,000 sq. ft.
KM-6	250,000 sq. ft.
Unallocated	212,418 sq. ft.
UNDEVELOPED	**569,918 sq. ft.**

Calculating Commercial Redevelopment Potential

Commercial redevelopment potential was analyzed by first placing the supply of developed commercial property into three categories according to redevelopment potential. The categories are based on the parcel's ratio of improvement value to land value and are divided as follows:

Category	Ratio of Improvement Value to Land Value (IV/LV Ratio)[10]
1. No Redevelopment Potential	Greater than 0.5
2. Low to Moderate Redevelopment Potential	0.3 to 0.5
3. High Redevelopment Potential	Less than 0.3

The total redevelopment potential could then be calculated by finding the difference between existing development and theoretical potential on parcels with an IV/LV ratio less than 0.5. The minimum theoretical potential IV/LV ratio was established at 0.65, while the maximum was set to be 1.0. Standards were informed by redevelopment studies done at the University of Utah[11] and the University of Maryland.[12]

Redevelopment Potential =

$$\frac{\left(\left(Theoretical\frac{IV}{LV}\right)-\left(Existing\frac{IV}{LV}\right)\right)*LV}{Average\ Existing\ Commercial\ IV\ per\ sq.ft.} = \frac{(Theoretical\ IV)-(Existing\ IV)}{Average\ Existing\ Commercial\ Improvement\ Value\ per\ sq.ft.}$$

The average existing commercial improvement value per square foot of floor area for Teton County in 2016 was $67.11.

Example calculation for parcel where LV=$100,000 and IV/LV=1.0:

$$\frac{(1.0-0.1)*\$100{,}000}{\$67.11\ per\ sq.ft} = 1{,}341 \text{ sq. ft. of redevelopment potential.}$$

[10] IV/LV ratio categories employed by many Oregon communities, notably Eugene, Corvallis, and Portland. Source: Envision Eugene Technical Resource Group, 10/31/11.

[11] Nelson, A and Bjarnson, G. *Estimating Commercial Land-Use Conversion: Case Study of Athens-Clarke County, Georgia*. 2010.

[12] National Center for Smart Growth Research and Education, University of Maryland. *Estimating Development Capacity*. 2005.

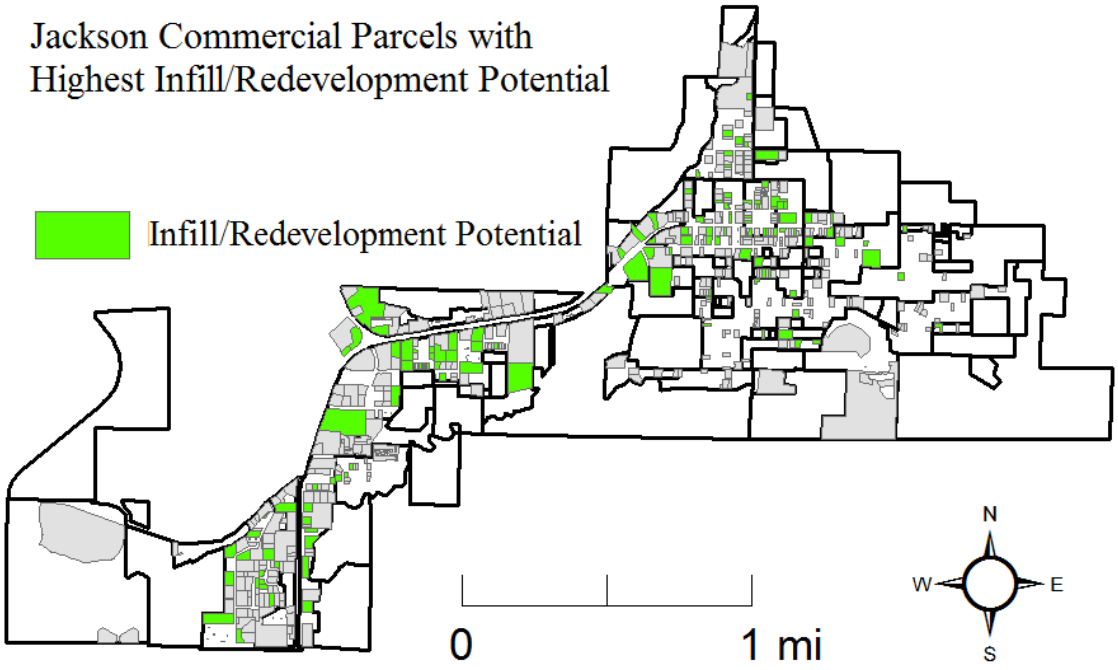


Figure 8: Jackson Commercial Parcels with Highest Infill/Redevelopment Potential

Table 15: Town of Jackson Commercial Redevelopment Potential	
Potential Land Value to Improvement Value Ratio for Underdeveloped Property	**Redevelopment Potential (sq. ft.)**
0.65 (Min. Assumption)	1,467,735
1.0 (Max Assumption)	2,798,072

*Redevelopment figures assume "75% Commercial/25% Residential" redevelopment ratio in the Central Business District, South Cache/Snow King, North Cache, Karns Meadow, and Southeast mixed use districts.

The Town of Jackson can support 2,593,897 to 3,924,324 square feet of additional commercial development through vacant and redevelopment.

Commercial - County

Table 16: County Commercial Vacant Land			
Zone	**Parcels**	**Acres**	**Build Potential (sq. ft.)**
Auto-Urban Commercial (AC)	5	3.63	55,328
Business Park (BP)	14	9.18	239,981
Grand Targhee Resort	-	-	227,508
Snake River Canyon Ranch	-	-	100,000
Teton Village (I, II)			390,000
TOTAL BUILD POTENTIAL (ALL ZONES): 1,012,817 sq. ft.			

Build potential for vacant commercial parcels was calculated using the Floor Area Ratio (FAR) standards set forth by Teton County Land Development Regulations. Build potential for resorts was based on resort master plans.

Table 17: County Commercial Redevelopment Potential	
Average Potential Land Value to Improvement Value Ratio	**Redevelopment Potential (sq. ft.)**
0.65 (Min. Assumption)	659,836
1.0 (Max Assumption)	1,198,937

The same methods for calculating redevelopment were used for Teton County. Refer to Town of Jackson Commercial Redevelopment section for full explanation.

Unincorporated Teton County can support a total 1,672,203 to 2,211,754 square feet of additional commercial development through vacant development and redevelopment under current conditions.

Table 18: Teton County Commercial Potential	
Type	**Build Potential (millions of sq. ft.)**
Town of Jackson Vacant Development	1.1
Town of Jackson Redevelopment	1.5 to 2.8
Total Town of Jackson Commercial Potential	**2.6 to 3.9**
County Vacant Development	1.0
County Redevelopment	0.7 to 1.2
Total County Commercial	**1.7 to 2.2**
OVERALL TOWN AND COUNTY TOTAL	**4.3 to 6.1**

Commercial Projections

Commercial development need projections can be made based on growth projections for residents and tourism. It is logical that office and industrial growth would tend to follow growth in population, housing, lodging and commercial, since office and industrial provides locations for service activities, as well as warehousing, distribution, utility services, cleaning services, wholesale trades and suppliers.[13] For this study, lodging projections can be made using a simplified approach that assumes the current ratio of population to lodging rooms remains constant over time.[11]

Table 19: TETON COUNTY COMMERICAL PROJECTIONS	
Annual Commercial (Non-Lodging) Projection	84,640 square feet
Annual Lodging Projection	32,500 square feet (81 units)
Total Annual Commercial Projection	117,140 square feet
Land Supply of Commercial Lands	37 to 52 years

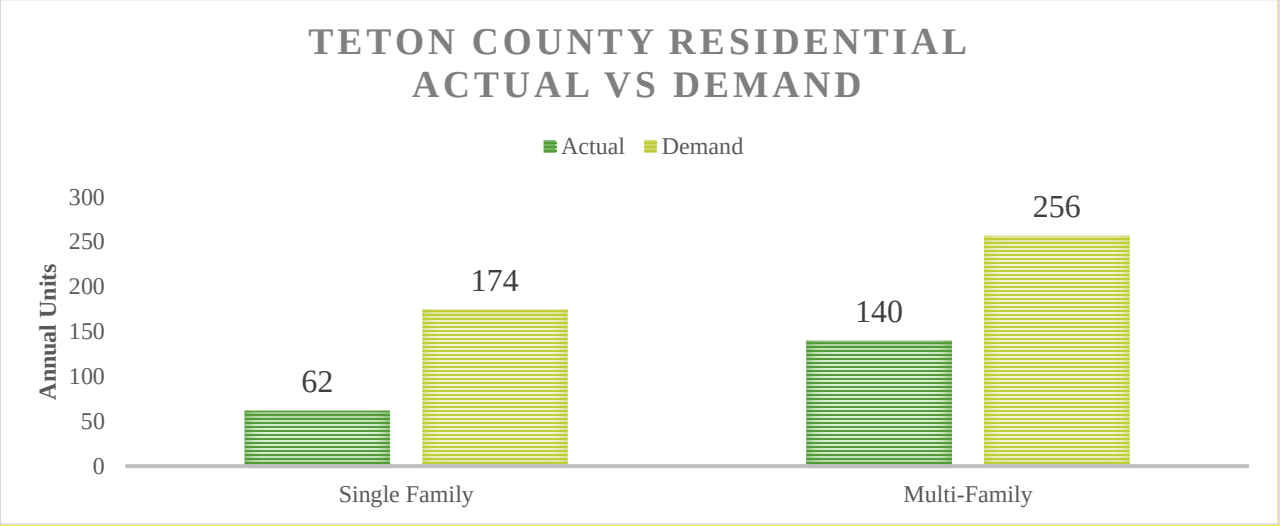
[13] FCS Group. *Teton/Jackson Strategic Planning: Market Findings and Recommendations.*

Commercial/Residential Balance

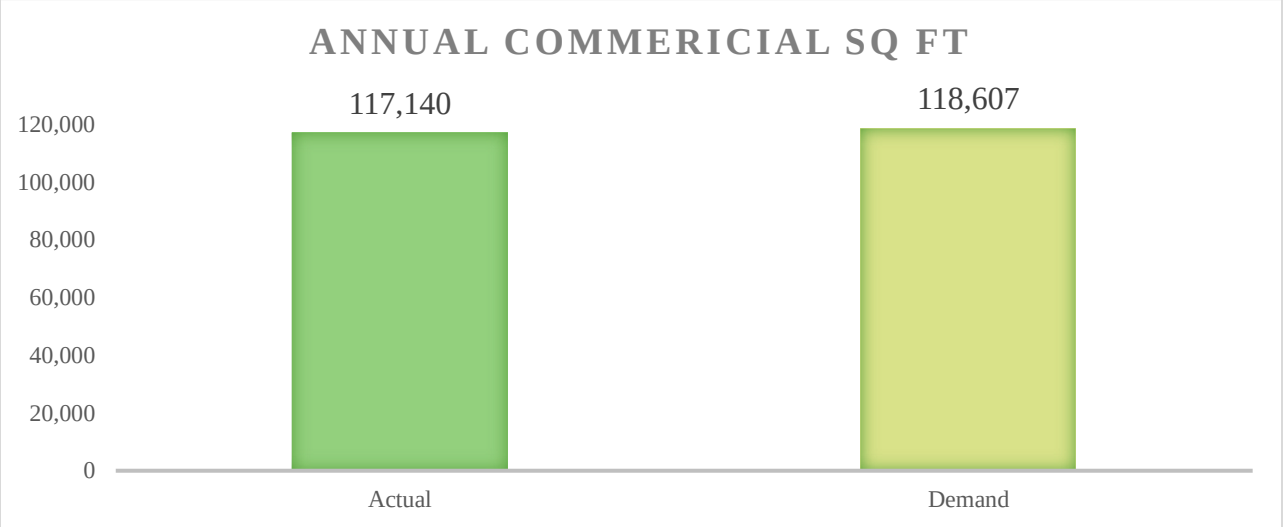
The projections for residential and commercial development in this report represent a constrained market. In other words, these projections are not representative of actual market demand, but rather documented trends. As is seen in the ensuing graphs, the demand for residential development far outweighs actual build projections, while commercial development is keeping pace with demand. Approximately 300 additional rental units are currently needed in Teton County to achieve balance between supply and demand such that rising rents could stabilize.[14] Achieving this balance will be difficult, as job growth continues to outpace housing.

Market demand reveals two major trends: an imbalance of single family to multi-family housing and a substantial gap between residential and commercial demands being met. Demand for single family housing exceeds actual construction by nearly three times, while multi-family demand exceeds actual construction by close to twice as much. It is also apparent that there exists a large gap between residential demand and actual units being constructed, while commercial demand is being nearly completely met.

[14] 2014 Regional HNA Teton County Wyoming



Residential demand based on a study by FCS Group. Demand was calculated based on 2012 Teton County Comprehensive Plan projections. "Actual" residential units based on average annual build permits from 2010 to 2015.



Commercial demand based on a market study done by FCS Group that makes projections based on existing demand and projected population and visitor trends. "Actual" commercial square footage based on calculations made in this report (see "Teton County Commercial Projections" section).

IMPLICATIONS

This study reinforces the major concern for Teton County of an ever-worsening housing situation. Commercial land supply exceeds the residential supply by a substantial margin, and the influence of this tilted ratio can be directly tied to many of the region's problems. Between 2010 and 2013, growth in the housing supply (3.2% rate of growth) did not keep pace with job growth (8.2% rate of growth).[15] This increases the number of commuting employees from outlying communities, a trend that will likely continue to be precipitated by an unbalanced supply of commercial compared to residential allowed development. In 1990, roughly 86 percent of Teton County's workforce lived within the county, but by 2010, the number plummeted to only 68 percent.[16] The Teton County Workforce Housing Action Plan completed in November 2015 now puts this number at just 62 percent.[17] Based on research done by the Blue Ribbon Panel on Workforce Housing, there is a reported "tipping point" when this number dips below 60 percent. In other words, less than 60 percent of the workforce living locally results in the town losing its sense of community, identity and character. Based on data from other resort communities, loss of local workforce is cited as a reason for lost customers for local businesses, a decrease in the level of service to guests, and as a result, the communities become less desirable places to visit and live.[18] Furthermore, the rise of commuters leads to serious impacts on transportation infrastructure, wildlife and the environment, and contributes to diminished levels of voter representation, community service, and support of local business.[14]

[15] 2014 Regional Housing Needs Assessment Teton County Wyoming
[16] Silbernagel, K. *The Effective Population of Teton County, Wyo*.
[17] Teton County Workforce Housing Action Plan, November 2015.
[18] The Blue Ribbon Panel on Workforce Housing. *Housing Jackson Hole.*

If the Town and County expect to uphold the goal of preserving community character, and maintaining Teton County as a community first and a resort second, thoughtful growth management practices will need to be implemented. Increasing residential density potential in Jackson through targeted and careful up-zoning and use incentives will be one prudent method for addressing needs, but it will likely not be adequate, especially with the demand for single family housing and lack of up-zoning opportunities. As the supply of residential land within Jackson diminishes, residential pressure on rural lands will only escalate. Planning for clustered residential development in areas of lesser impact on natural resources is something that should be considered without delay, and taking advantage of development opportunities in "complete neighborhoods" should be a significant focus moving forward. The Town should also explore implementing standardized minimum density regulations for future development.

The character of Teton County is defined by the often competing worlds of community and nature, making its preservation a delicate objective. Being selective with the location and type of allowable development is essential in building a sense of community, while still maintaining the natural character that is vital to Teton County. On a broad scale, the Town could consider a shift toward encouraging residential over a swelling commercial environment by backing residential development of some of the heretofore community designated lands. Implementing strategies along these lines would lessen the burden on businesses not being able to find employees, and help prevent a growing commuter workforce. If done judiciously, such steps could be achieved without preventing healthy economic growth, or substantially impacting wildlife and natural systems.

Indicators to Monitor

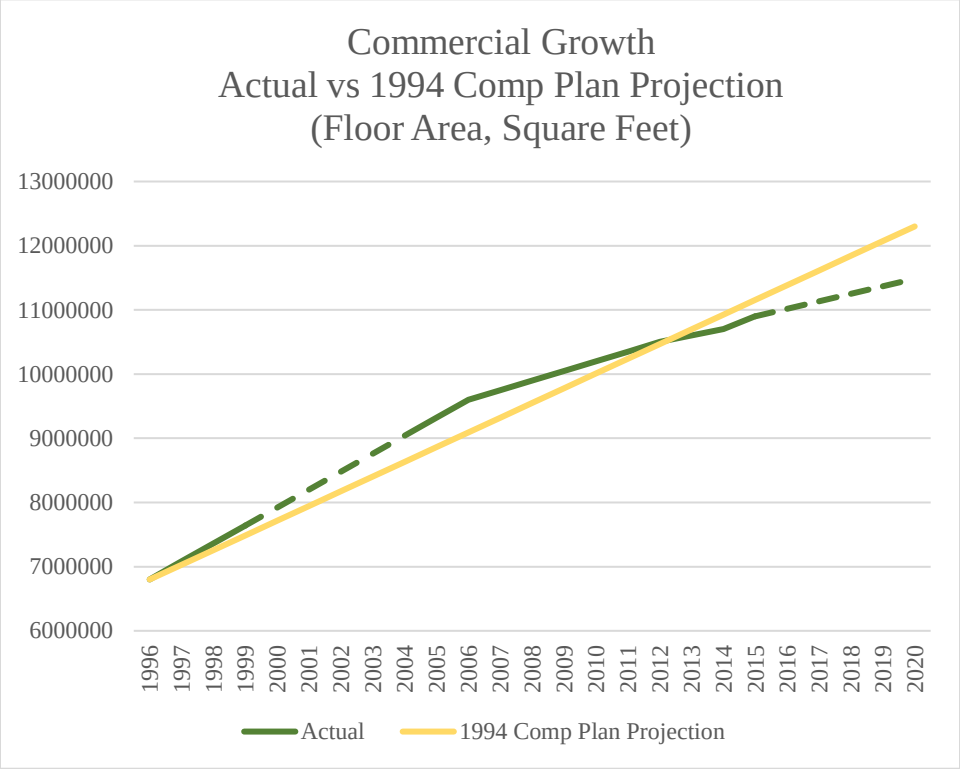
Actual Development vs. Plan Goals

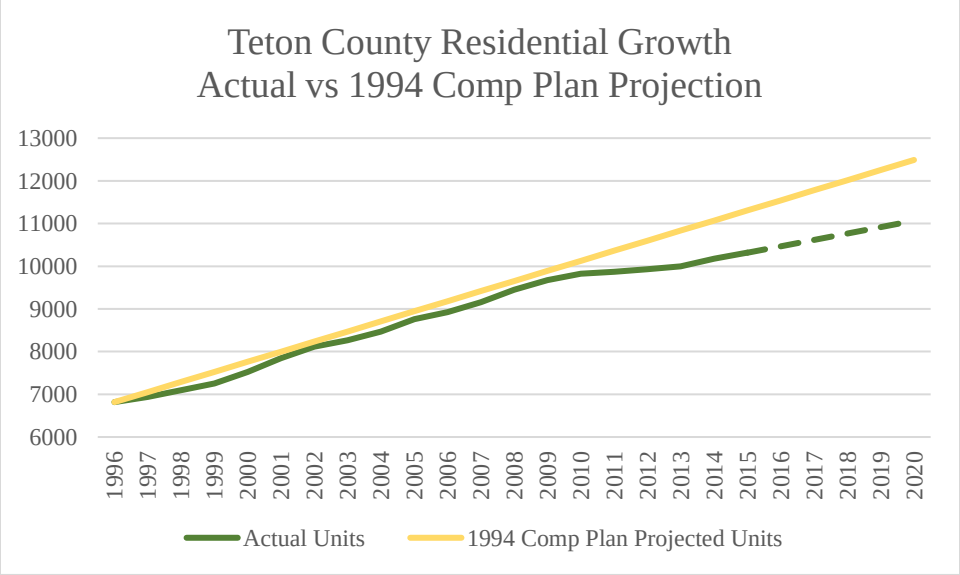
Comparing actual development trends to original Comprehensive Plan goals can help evaluate if goals are being met, and whether those goals are achieving the best interest of the community. Growth has not reached the 1994 projections, particularly in recent years as the market becomes more constrained. This is especially true with residential development.

Commercial growth exceeded Comp Plan projections until 2012, mainly caused by large commercial expansion through 2006. The recession slowed commercial growth substantially, and by 2012 was back in line with Comp Plan projections. Commercial growth is projected to be down to 93.5% of the 1994 Comp Plan projections by 2020.

Residential growth remained only slightly below Comp Plan projections until about 2010, when the number of units being built dropped off significantly. Residential growth is projected to be 88.6% of the 1994 Comp Plan projections by 2020.

Conservation easements and Rural Land Development Regulations have helped achieve the County's goal of decreasing residential buildout below 1994 plan projections, but similar reductions on commercial buildout are not seen. It is also legitimate to question whether the targets for each type of development are valid. Results from this study tend to show that the gap between residential and commercial development is widening more than the ratio of Comp Plan goals suggest.





*See Appendix C for full breakdown of 1994 Comp Plan Projections.

Housing the Workforce

Clearly a key takeaway from this report is the aforementioned imbalance between residential and commercial, leading to a diminishing local workforce. Understanding what is needed to improve the imbalance and making educated long term projections is vitally important to addressing the issue. A study conducted by the Town of Aspen (2014) examines the impacts of a dwindling local workforce on community character. The study states that once the percentage of the workforce living locally dips below sixty percent, major economic and community character issues are seen. Aspen is currently at thirty-six percent, while Teton County is at sixty-five percent. Conditions in Aspen were created when a ballooning service/tourist economy was given greater precedent over affordable housing in land allocation decisions. Unlike Jackson, Aspen has an urban growth boundary which allocates land based on projections. However, Aspen still provides an excellent example of how the percentage of the workforce living locally can reflect land balance issues, not unlike those seen in Teton County.

The following projections are by no means definitive and more rigorous study should be conducted, but they do give a reasonable estimation of what is needed in a quantifiable manner. In 2015, there were 4.05 FTEs (full-time equivalent employees) per 1000 feet of non-lodging commercial, making up 25,230 FTEs for Teton County.[19] Additionally, there were another 2,928 employees working in lodging (assuming 0.5 employees per lodging unit). The total number of employees in Teton County at that time was 28,168. Projecting job growth

[19] 2014 Regional HNA Teton County Wyoming

based on lodging and commercial growth gives us 29,144 FTEs in 2015. Of those 29,144 FTEs, 18,070 (62 percent)[20] were held by employees living in the County.[21]

The assumption was made that the current level of 1.7 employees per household and 1.2 FTEs per employee would remain constant.[17]

Based on these conditions and commercial and lodging projections made in this report, projections for job growth can be made. From job growth, calculations for the amount of housing needed to increase the percentage of workforce locally employed can be made. The results of an example twenty-year projection are given below:

Annual jobs created from commercial (non-lodging): **338**

Annual jobs created from lodging: **41**

Annual housing units needed to maintain 62% local workforce: **150**

Annual housing units needed to reach 65% local workforce by 2036: **159**

Annual housing units needed to reach 67.5% local workforce by 2036: **183**

Annual housing units needed to reach 70% local workforce by 2036: **209**

[20] Teton County Workforce Housing Action Plan, November 2015.
[21] It was also calculated that there were 1.83 FTEs per household in 2012. This was assumed as a constant when making projections.

RECOMMENDATIONS

- Conduct a more detailed housing needs assessment. The 2010 Blue Ribbon Panel on Workforce Housing provides some analysis on the housing needs of a growing workforce. However, a big picture assessment is needed that specifically identifies the types and amounts of housing that are needed on a county-wide basis.

- Similarly, there needs to be a more detailed market analysis done in Teton County. FCS Group's 2015 study "Teton/Jackson Strategic Planning: Market Findings and Recommendation" provides some broad analysis of needs, but is not specific enough to capture the exact types of commercial and residential needed.

- Conduct a redevelopment feasibility study and explore the economic viability of a transition from a 3:1 commercial to residential redevelopment ratio to a ratio more in favor of residential development. A 2:1 commercial to residential redevelopment ratio would be a minimum benchmark that could help reverse the imbalance of commercial to residential.

- Use development trends to give a more realistic portrayal of capacity over a given time. This is especially useful in the case of agriculture land and ARUs.

- Conduct a study on land use efficiency standards and utilize them to provide a more accurate portrayal of likely capacity.

- Develop concise complete neighborhood plans for single family development outside the existing town boundaries. The supply of single family within Jackson is particularly

limited, and promptly making a clear plan to accommodate single family housing through complete neighborhoods and clustering will be essential in preserving the rural character of the County.

- Better quantify and qualify the current percentage of the workforce that is locally employed, and make a long term goal outlining the number of units needed annually to achieve the target of housing at least 65 percent of the workforce locally.

- Utilizing projections, develop a more concrete timeline for the amounts and types of future development. Communities in other regions, most notably in California, Oregon, and Washington, plan for a twenty-year supply of development with specific spatial and temporal goals. A similar model could be implemented in Teton County.

- Monitor land use trends compared to Comprehensive Plan goals to evaluate if goals are being achieved and whether the goals are meeting the needs of the community.

- Explore doing scenario planning, a process by which the projected long-term impacts of several scenarios are explored. This could be a good way to come up with a strategic prioritization plan that best fits the community's vision, while improving transparency and citizen engagement. It also helps give the inventory report a much-needed timeline that can be used for consumption and needs projections.

- Establish a timeline for when this type of report should be updated. This can be scheduled or on an "as needed" basis.

- For future land inventory updates, use methodology that is consistent with the work done by this study and the buildout taskforce to accurately capture trends. Document any differences in methodology. Having transparent methodology improves consistency and instills public confidence.

Sources

Blue Ribbon Panel on Workforce Housing. *Housing Jackson Hole*. August 2010.

Chase, T & Wood, T. "*Teton/Jackson Strategic Planning: Market Findings and Recommendation."* FCS Group. September 2015.

Clarion, Collins Planning, and Fehr & Peers. *1994 Comprehensive Plan Analysis*. October 2007.

Cockerham, W. (1977). Attitudes toward Land-Use Planning and Controlled Population Growth in Jackson Hole. *Journal of the Community Development Society, 8(1),* 62-73.

Envision Eugene Technical Resource Group. *Commercial Redevelopment Methodology*. October 2011.

Greenwood Mapping, Inc. *Teton County GIS*. http://tetonwy.greenwoodmap.com/gis/download. Retrieved July 2016.

Gill, A. & Williams, P. (1994). Managing Growth in Mountain Communities. *Tourism Management*. 15(3): 212-220, 229.

Haines, A. (2005). *Conducting a Land Use Inventory*. University of Wisconsin – Stevens Point.

Jackson/Teton County 1994 Comprehensive Plan. Updated through October, 2002.

James, P. (1936). Regional Planning in the Jackson Hole Country. *Geographical Review, 26*(3), 439-453.

Knaap, G. (2001). *Land market monitoring for smart urban growth*. Cambridge, MA: Lincoln Institute of Land Policy.

Koldus, K. (2004). *Affordable Housing in Mountain Resort Towns: Policy Recommendations for June Lake, Mono County, CA*.

Lurie, S. & Clark, T. (1997). *The Policy Frontier: Sustainability Planning in Teton County, Wyoming.* Yale University.

Moss, L. A. (2006). *The amenity migrants: Seeking and sustaining mountains and their cultures*. Wallingford, UK: CABI Pub.

Moudon, A. V., & Hubner, M. H. (2000). *Monitoring land supply with geographic information systems: Theory, practice, and parcel-based approaches*. New York: Wiley.

National Center for Smart Growth Research and Education. (2005). *Estimating Development Capacity: A Guidebook for Analysis and Implementation in Maryland*. University of Maryland.

Nelson, A & Bjarnson, G. (2010*). Estimating Commercial Land-Use Conversion: Case Study of Athens-Clarke County, Georgia*. University of Utah.

Riebsame, W., Gosnell, H., & Theobald, D. (1996). Land Use and Landscape Change in the Colorado Mountains I: Theory, Scale, and Pattern. *Mountain Research and Development, 16*(4), 395-405.

Silbernagel, K. (2013). *The Effective Population of Teton County, Wyoming*. Jackson Hole Conservation Alliance. August 2013.

Teton County Workforce Housing Action Plan. November 2015.

Teton County Land Development Regulations. Last Updated 1/1/15.

Tetonwyo.org. *Building Permit Records*. Data Retrieved July 2016.

Town of Jackson Land Development Regulations. Last Updated 1/1/15.

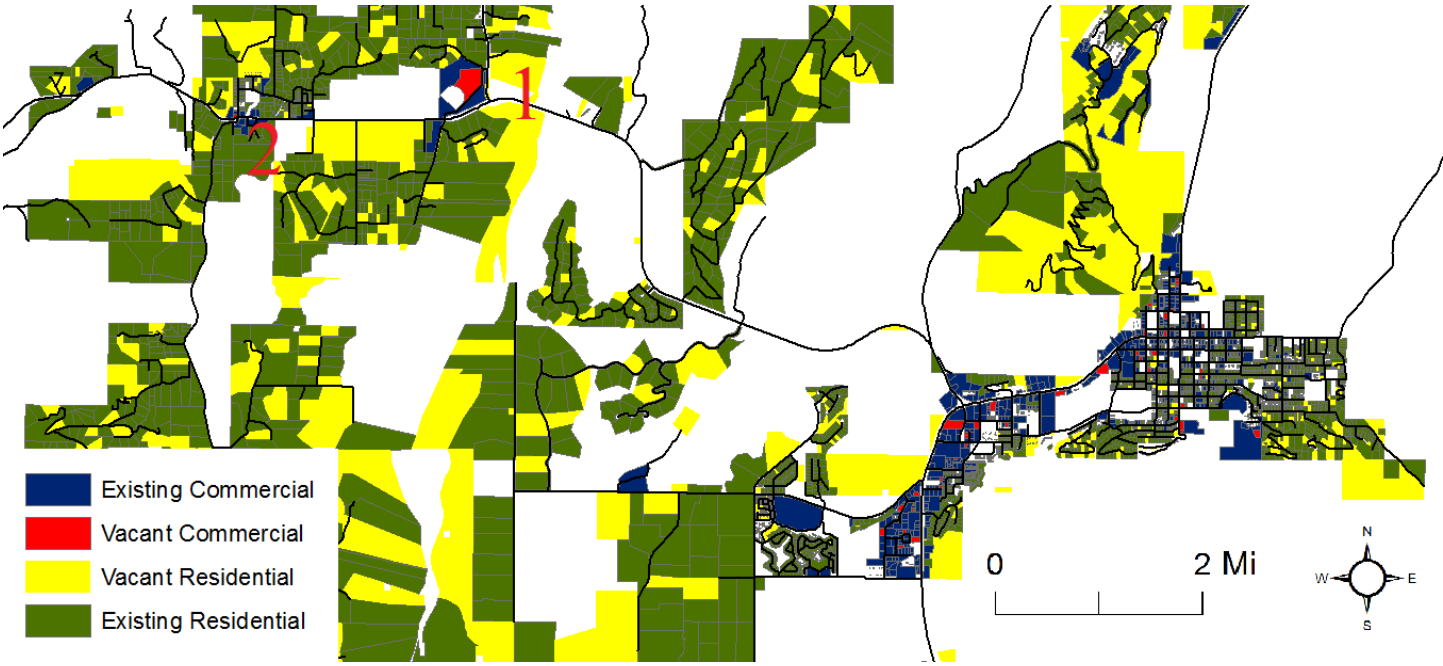
Town of Jackson. *Comprehensive Plan Update: Buildout Numbers Taskforce*. September 2009.

Viehman, D. *Jackson Hole Real Estate Market Report*. http://jacksonholerealestatereport.com. January 2016.

APPENDICES

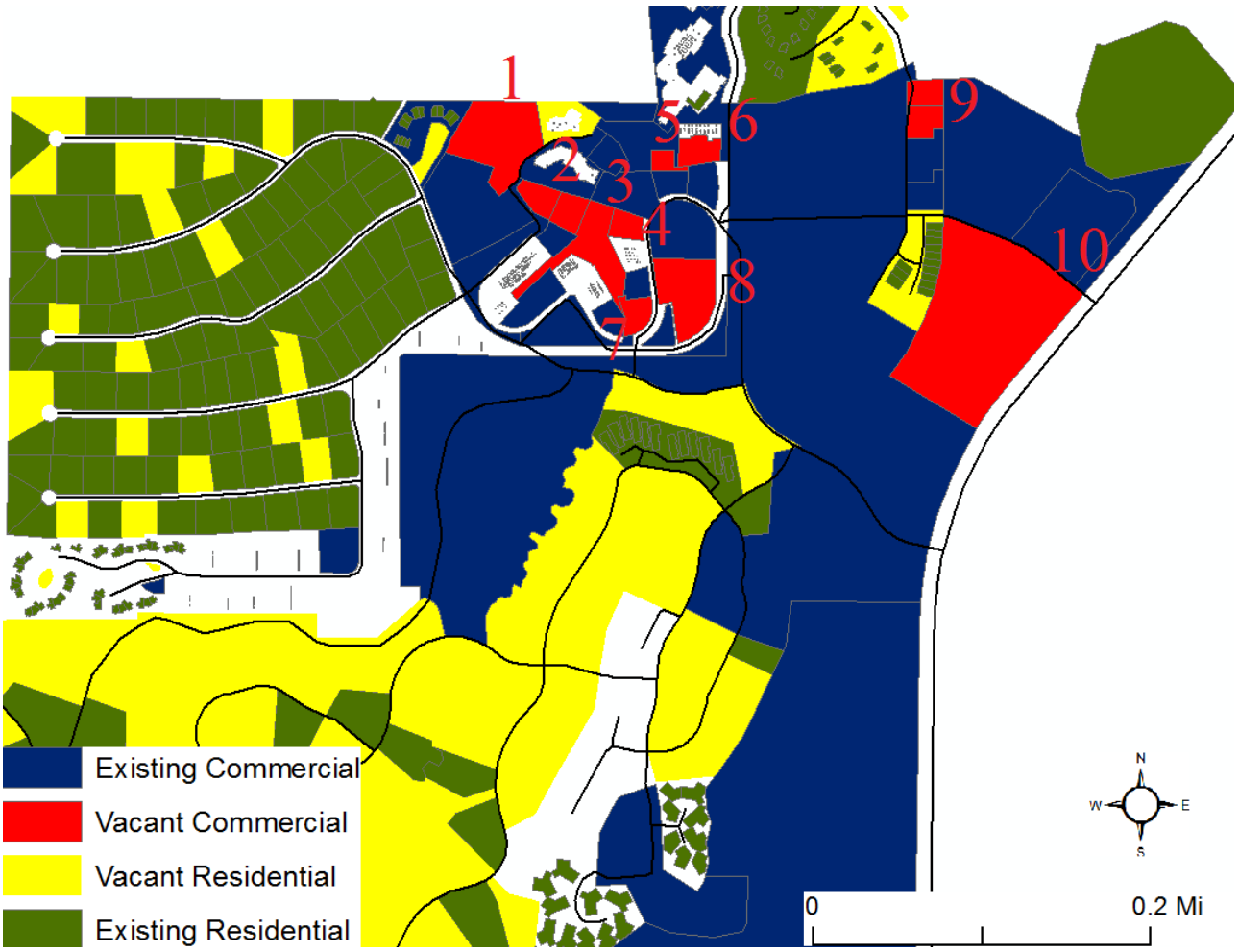
APPENDIX A – COUNTY MAPS WITH COMMERICAL OWNERSHIP

TOWN OF JACKSON PERIPHERY



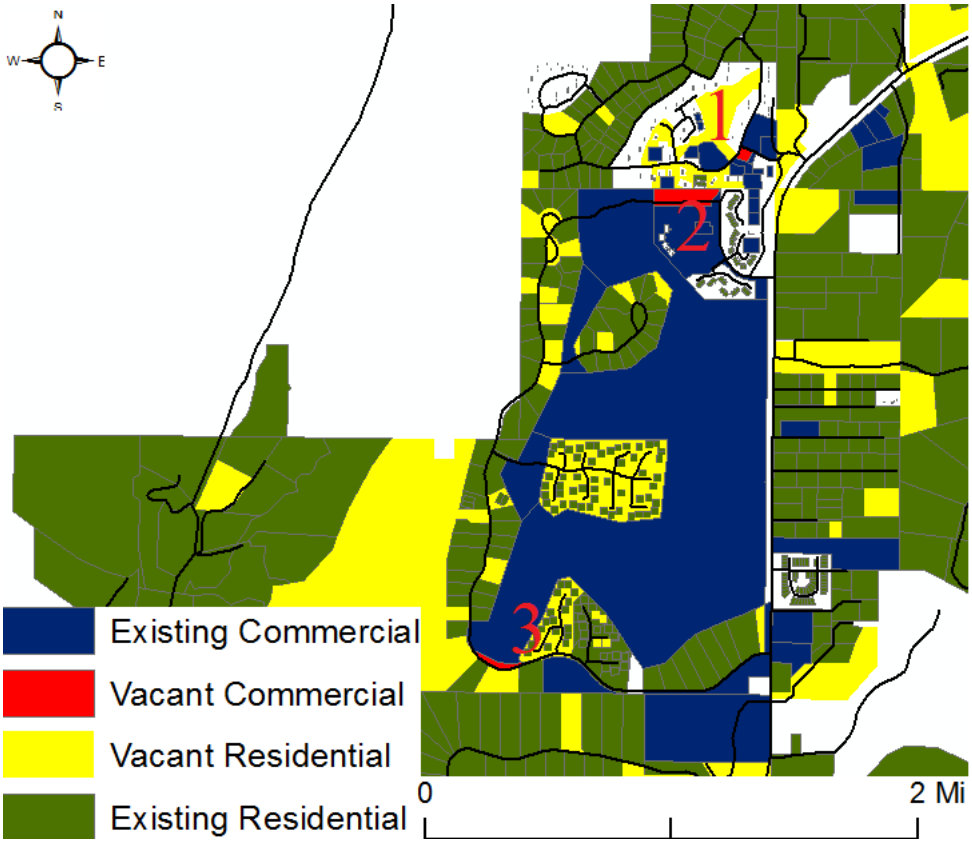
MAP ID	DESCRIPTION	OWNERSHIP	AREA
1	STILSON PARK	JHMR CORPORATION	15.18 ACRES
2	LUNDY (LOTS 24-25)	TETON PASS PROPERTIES LLC	0.31 ACRES

TETON VILLAGE



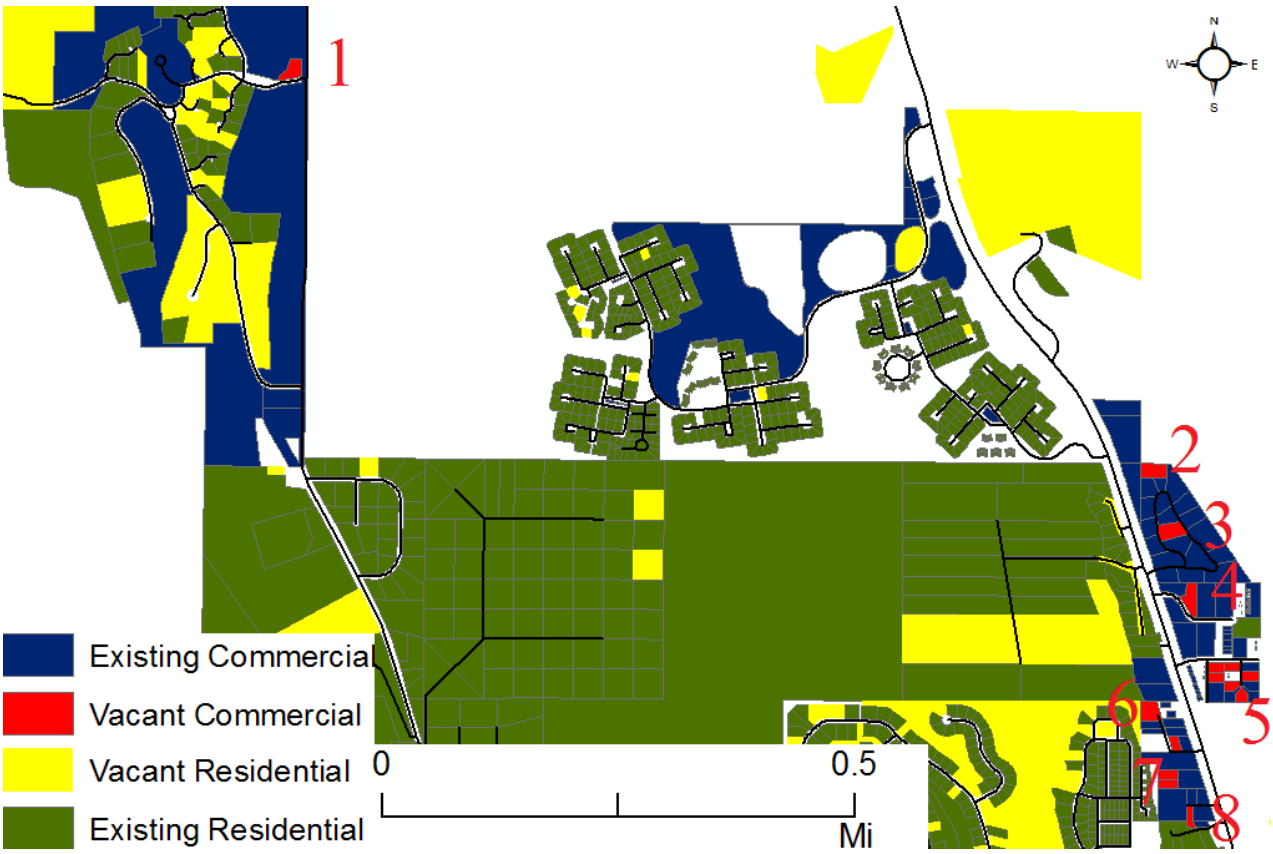
MAP ID	DESCRIPTION	OWNERSHIP	AREA
1	TETON VILLAGE	H-1 REAL ESTATE, LLC	3.26 ACRES
2	LOT 224, 225	CODY LANE, LLC	1.28 ACRES
3	LOT 223	TETON VILLAGE ASSOCIATION	1.94 ACRES
4	LOT 202	NORTHCLUB, LLC	0.49 ACRES
5	LOT 222	ALPENHOF LODGE ASSOCIATES	0.31 ACRES
6	LOT 216	SNAKE RIVER LODGE HOTEL INVESTORS, LLC; NEWPORT HOTEL GROUP	0.65 ACRES
7	LOT 205	TETON VILLAGE PROPERTIES LLC	0.57 ACRES
8	LOT 212	JHMR CORPORATION	2.22 ACRES
9	LOT 3-4, PARCEL I	CRYSTAL SPRINGS RANCH, INC.	1.19 ACRES
10	TETON VILLAGE	FOUR SHADOWS LLC	12.25 ACRES

JACKSON HOLE RACQUET CLUB RESORT



MAP ID	DESCRIPTION	OWNERSHIP	AREA
1	LOT 135, THE ASPENS	ASPEN PROPERTIES II, LLC	0.39 ACRES
2	LOT 1, J.H.R.C.R.	TETON PINES OWNERS ASSOCIATION, HIGH MOUNTAIN GROUP	2.68 ACRES
3	LOT 29, MEADOW OF TETON PINES PHASE 3	TETON PINES LTD. LIABILITY CO.	0.72 ACRES

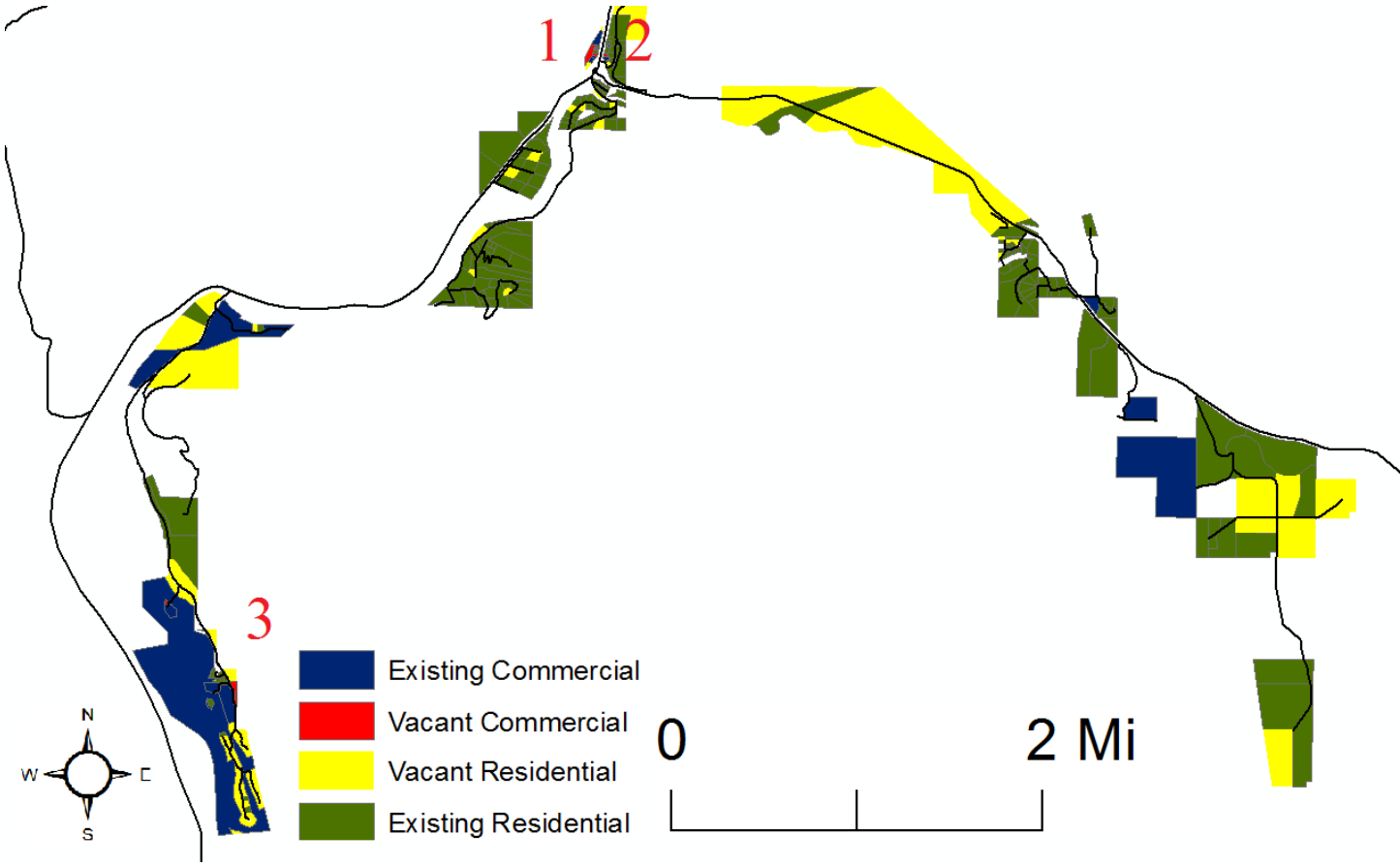
SOUTH PARK



MAP ID	DESCRIPTION	OWNERSHIP	AREA
1	CREEK RANCH	RANCHES AT JH, LLC.	0.92 ACRES
2	BUSINESS PARK ZONE	HUNT, RICHARD & KIMBERLY S.	1.11 ACRES
3	S. PARK SERVICE CENTER	HORIZON COMM., INC.	1.09 ACRES
4	YEARSLY SUBDIVISION	MAM REVOCABLE TRUST	1.09 ACRES
5	VALLEY VIEW BUSINESS PARK	SEE FOOTNOTE[22]	2.70 ACRES (6 PARCELS)
6	O BAR B	MAYERS, RANDELL S. O BAR B RENTALS	1.07 ACRES 0.48 ACRES
7	SNAKE RIVER BUS. PARK	INCLINE REAL ESTATE	1.15 ACRES
8	ROICE SUBDIVISION	STORAGE STABLES 307, LLC	0.42 ACRES

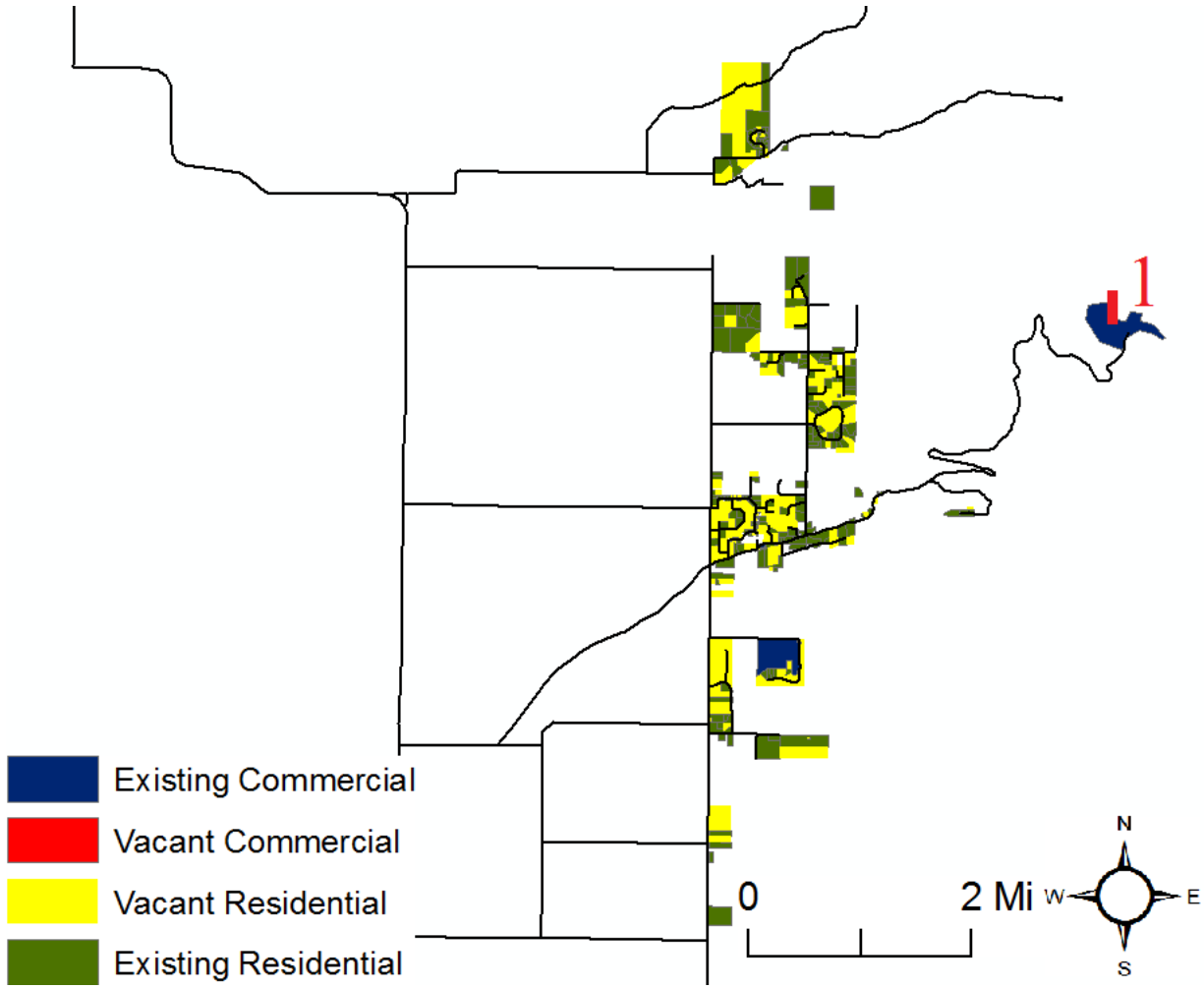
[22] 4 C'S REAL ESTATE, LLC; FREDERICK LANDSCAPING; HODGES, MARK D. & JULIE A. TRUSTEES; MILLS, WIND B. & SETH T; GOODMARSH, LLC (2 Parcels)

HOBACK



MAP ID	DESCRIPTION	OWNERSHIP	AREA
1	ROGERS POINT	LEWIS, RODNEY	2.21 ACRES
2	HOBACK	HOBACK STORES, LLC	0.48 ACRES
3	SNAKE RIVER CANYON RANCH	SNAKE RIVER CANYON RANCH	100,000 sq. ft. build potential

ALTA AND GRAND TARGHEE



MAP ID	DESCRIPTION	OWNERSHIP	BUILD POTENTIAL
1	GRAND TARGHEE	GRAND TARGHEE RESORT	22,058 sq. ft.

APPENDIX B – LAND DEVELOPMENT REGULATIONS AND CHARACTER DISTRICTS

Summary of Land Development Regulations by Zone			
Zone Abbreviation	**Zone Name**	**Subdivision Min Lot Size (sq. ft.)**	**Max Density**
S	**Suburban**	12,000	4.0 du/ac[23]
UR	**Urban Residential**	5,000	23.5 du/ac
UC	**Urban Commercial**	5,000	23.5 du/ac
UC-2[24]	**Urban Commercial-2**	5,000	23.5 du/ac
AR	**Auto-Urban Residential**	7,500	11.7 du/ac
BP	**Business Park**	5,000	11.7 du/ac
RB	**Residential Business**	7,500	1 du per lot
OP	**Office Professional**	7,500	8.7 du/ac
AC	**Auto-Urban Commercial**	7,500	11.7 du/ac
R-TOJ	**Rural Residential – Town**	12,000	-
R-1, R-2, R-3	**Rural (County)**	-	1 unit per 35 ac

*Complete Neighborhood

Character Districts			
Character District	**Description**	**Status**	**Targeted Use**
DISTRICT 1 TOWN SQUARE*			

[23] 4.0 du/ac assumes 35% urban cluster development ratio with a minimum site area of 80,000 sq. ft.
[24] UC-2 intended to have less intense development than UC, even though maximum allowed density is the same.

1.1	Inner Square	Stable	Commercial
1.2	Outer Square	Stable	Commercial, Residential
DISTRICT 2 TOWN COMMERCIAL CORE*			
2.1	Snow King Resort	Transitional	Commercial, Residential
2.2	Snow King and South Cache Corridors	Transitional	Commercial, Residential
2.3	Downtown	Transitional	Commercial, Residential
2.4	Public/Civic Campus	Stable	Public, Institutional
2.5	North Cache Gateway	Transitional	Commercial, Residential
2.6	Mixed Use Office and Residential	Transitional	Commercial, Residential
DISTRICT 3 TOWN RESIDENTIAL CORE*			
3.1	East Jackson	Stable	Residential
3.2	Core Residential	Transitional	Residential
3.3	Rodeo Grounds	Stable	Institutional
3.4	May Park Area	Stable	Residential
DISTRICT 4 MIDTOWN*			
4.1	Midtown Highway Corridor	Transitional	Commercial, Residential
4.2	Northern Hillside	Transitional	Commercial, Residential
4.3	Central Midtown	Transitional	Commercial, Residential
4.4	Midtown Residential	Stable	Residential
4.5	Karns Meadow	Preservation	Wildlife Habitat/Corridor
DISTRICT 5 WEST JACKSON*			
5.1	West Jackson Highway Corridor	Transitional	Commercial, Residential
5.2	Gregory Lane Area	Transitional	Industrial, Residential
5.3	High School Butte	Transitional	Commercial, Residential
5.4	School Campus	Stable	Institutional
5.5	West Jackson Residential	Stable	Residential
5.6	Northern South Park	Transitional	Residential OR Preservation

DISTRICT 6 TOWN PERIPHERY*			
6.1	Low/Medium Density Neighborhoods	Stable	Residential
6.2	Upper Cache	Stable	Residential
6.3	Snow King Slope	Preservation	Recreation, Wildlife, Scenic
Character District	**Description**	**Status**	**Targeted Use**
DISTRICT 7 SOUTH HIGHWAY 89*			
7.1	South Park Business Park	Stable	Industrial, Residential
7.2	Hog Island	Stable	Residential, Small Business
DISTRICT 8 RIVER BOTTOM			
8.1	Existing River Bottom Subdivisions	Conservation	Residential, Wildlife
8.2	Large River Bottom Parcels	Preservation	Habitat Preservation
8.3	Canyon Corridor	Conservation	Wildlife, Scenic
8.4	Hoback Junction	Stable	Commercial
DISTRICT 9 COUNTY VALLEY			
9.1	JH Golf and Tennis	Conservation	Resort, Wildlife
9.2	Agricultural Foreground	Preservation	Agriculture, Open Space
9.3	County Valley Subdivisions	Conservation	Wildlife, Light Residential
9.4	Gros Ventre Buttes	Conservation	Wildlife, Light Residential
DISTRICT 10 SOUTH PARK			
10.1	Southern South Park	Conservation	Wildlife, Residential
10.2	Central South Park	Preservation	Agriculture, Open Space
DISTRICT 11 WILSON*			
11.1	Wilson Commercial Core	Transitional	Commercial, Residential
11.2	Wilson Town Site	Stable	Residential (with ARUs)
11.3	Wilson Meadows	Stable	Residential
11.4	South Wilson	Stable	Wildlife, Light Residential

DISTRICT 12 ASPEN PINES*			
12.1	Aspen/Pines Commercial Core	Transitional	Commercial, Residential
12.2	390 Residential	Stable	Residential
12.3	Aspen/Pines Residential	Stable	Residential, Open Space
DISTRICT 13 TETON VILLAGE*			
13.1	Teton Village Commercial Core	Transitional	Commercial, Residential
13.2	Teton Village Residential Core	Transitional	Residential (All Types)
13.3	Teton Village Single Family	Stable	Residential
Character District	**Description**	**Status**	**Targeted Use**
DISTRICT 14 Alta			
14.1	Alta Farmland	Preservation	Agriculture
14.2	Alta Core	Stable	Institutional, Infill
14.3	Grand Targhee	Transitional	Resort, Residential
DISTRICT 15 County Periphery			
15.1	Large Outlying Parcels	Preservation	Wildlife, Light Residential
15.2	Game Creek/South Fall Creek	Conservation	Wildlife, Light Residential
15.3	Buffalo Valley	Preservation	Agriculture, Residential
15.4	Kelly	Conservation	Wildlife, Light Residential

APPENDIX C – 1994 Comprehensive Plan Projections

Table 8.6
Existing and Projected Development

	TOWN OF JACKSON	TETON COUNTY
Dwelling Units		
Existing	3,516 units	4,142 units
New Development Projected	1,448 units	3,383 units
Total Development by 2020	4,964 units	7,525 units
Population[1]		
Existing	8,333 population	8,698 population
New Population Projected	3,432 population	7,104 population
Total Population by 2020	11,765 population	15,802 population
Lodging Rooms		
Existing	2,620 rooms	1,768 rooms
New Lodging Rooms Projected	701 rooms	2,048 rooms
Total Lodging Rooms by 2020	3,321 rooms	3,816 rooms
Jobs (Employees)		
Existing	11,977 jobs	3,608 jobs
New Jobs Projected	8,071 jobs	3,619 jobs
Total Jobs by 2020	20,048 jobs	7,227 jobs
Nonresidential Development		
Existing	4.6 million sf	1.7 million sf
New Nonresidential Development Projected	3.6 million sf	2.4 million sf
Total Nonresidential Development by 2020	8.2 million sf	4.1 million sf

[1]Population in the Town of Jackson is estimated by multiplying 2.37 persons/household by the number of households. Population in the unincorporated areas of Teton County is estimated by multiplying 2.10 persons/household by the number of households.

*Existing numbers from January, 1996.

APPENDIX D – COUNTY VACANT RESIDENTIAL POTENTIAL BY ZONE

County Vacant Residential Lands			
Zone	**Development ID**	**Parcels**	**Acres**
Rural-1 (R1)		187	5,947.70
Planned Unit Development R1 (PUD-R1)	Triangle Q Ranch	1	89.1
	Granite Creek	1	43.68
Rural-2 (R2)		174	3,124.54
Planned Unit Development R2 (PUD-R2)	Triangle Q Ranch	1	5.39
	Lucky L Ranch	1	12.50
	Indian Springs Ranch	6	74.54
	Crescent H Ranch	17	49.02
	Bar B Bar Meadows	9	143.32
	Dairy Ranches	4	82.24
	Eagle South Fork	12	12.09
Rural-3 (R3)		707	2,931.37
Planned Unit Development R3 (PUD-R3)	Creek Ranch	57	88.75
	Indian Springs Ranch	7	46.64
	Bar B Bar Meadows	21	42.23
	Melody Ranch	39	78.50
	Rafter J Ranch	13	80.27
Zone	**Development ID**	**Parcels**	**Acres**

Neighborhood Conservation – Planned Unit Development (NC-PUD)	Jackson Hole Racquet Club Resort	42	38.66
	Ellen Creek	5	48.77
	The Ranches at Spring Creek	44	310.64
Neighborhood Conservation (NC)		146	206.23
Suburban - County (S-TC)		9	32.51
Auto-Urban Commercial (AC)		2	2.32
Planned Resort Residential	Teton Village I	45	55.24
	Teton Village II	83	145.67
	Grand Targhee	29	32.02
	Snake River Canyon	8	112.81
TOTAL		**1,668**	**13,783.75**