

2015 ANNUAL GROWTH AND DEVELOPMENT PROJECTIONS REPORT

Prepared in Support of the
Capital Improvement Planning Process



Staff

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Executive summary

The Annual Growth and Development Projections Report estimates new residential in the near future. This report provides a “snapshot” of the growth anticipated on January 1 of each year. Over many years, the number of new single family homes has significantly exceeded the number of multi-family units. During the most recent recovery, however, the number of multi-family units has greatly exceeded the number of single family units. In 2014, building permits were issued for 787 new dwellings of which 361 were single-family and 426 were multi-family.

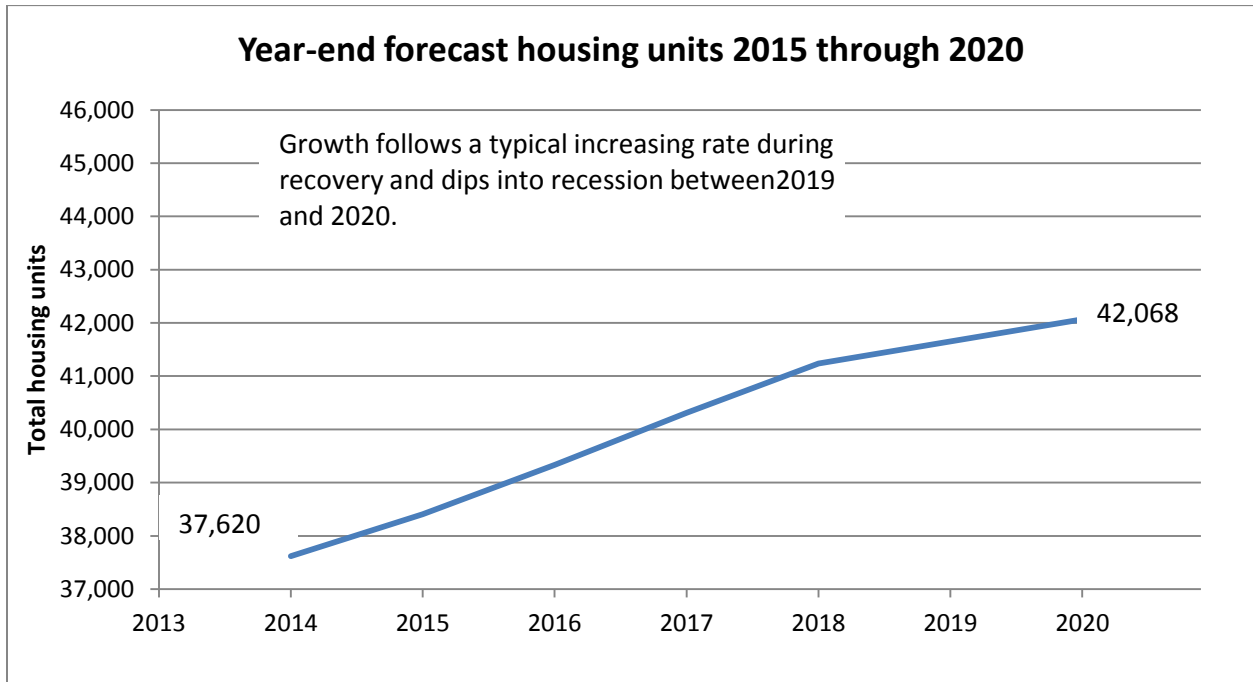
The Greeley Weld County MSA civilian labor force grew by 8.90%, the highest of any Metropolitan Statistical Area in the state. The number of employed people also jumped by 12.54% in the Greeley MSA, also the highest in the state. At the same time, the unemployment number and rate both declined substantially.

Oil and gas drilling activity in Weld County has continued with little apparent effect from the recent price drop of oil. While there is a clear downward trend in oil prices in late 2014, there is no clear trend yet in active drilling rigs in Weld County. The price seems to have stabilized between \$45.00 and \$55.00 per barrel during the last month, but it may be too soon to tell whether or not this apparent stabilization is long-term. Despite the lack of employment decline, future curtailment of drilling activity remains a concern since the drilling and fracking of each well employs approximately 100 to 125 people.

At the current rate of 361 single family dwellings per year, current activity in platting and development of lots is sufficient to maintain an adequate flow of lots for the next three and a half years. For this growth to occur, all approved lots need to be developed. To supply lots for future building, additional land needs to be brought forward through the platting process. There are a total of 407 multi-family units under construction as of Feb. 15, 2014. In addition, there are permit ready sites for an additional 60 units and 433 are currently under site planning or zoning review. The additional multi-family sites, if they are all approved, should be sufficient for approximately one year of new multi-family units.

Between 1991 and 2014, growth rates ranged from a low of 0.12% to a high of 4.14%. The distribution of these growth rates is highly bimodal with lower growth rates occurring during and immediately following recessions and higher growth rates occurring during recovery periods. If oil prices rebound and stabilize at \$70 to \$75 per barrel by mid to late 2015, and if this stability continues throughout the next five years without a recession, then a continued growth rate averaging around 2% is likely. It is expected that trends in place will continue as they have since 2012. Unless oil prices decline much more than they already have, Greeley’s

growth rate is not likely to be affected. Long term diversification of Northern Colorado’s economy is expected to continue, and this has, and will continue to have, a positive effect on Greeley. We can expect between 900 and 1,000 permits for new housing units to be issued during each of the next three years. As land with water already dedicated is absorbed and single-family housing becomes less affordable, market forces will likely mean that a higher proportion of these housing units will be multi-family because of the lower cost per unit of raw water and tap fees.



Projected Split of Multi-Family and Single Family Housing

	Total New Housing Permits	Single Family Permits	Multi-Family Permits
2014	787	361	426
2015	922	423	499
2016	983	451	532
2017	927	390	537
2018	412	90	322
2019	417	95	322
2020	787	95	692

I Introduction

The Annual Growth and Development Projections Report estimates how much new residential development will occur in the near future within the City of Greeley, Colorado. The report examines historic and recent development and annexation activity, and uses apparent trends, along with local and regional projections, to forecast building activity in the coming years.

This report is intended to provide a “snapshot” of the growth anticipated at the beginning of each year based on:

- 1) The actual history of growth and development during previous years;
- 2) Regional economic projections;
- 3) Permit ready lots; and
- 4) Other factors that have the potential to affect expected trends.

Greeley grew significantly in 2014 as the economic recovery took off. There was significant growth in the size of the workforce and the number of persons employed as well as a significant decline in the unemployment rate and the number of persons unemployed. Much of this was driven by increased oil and gas drilling activity as hydraulic fracking technology was deployed. A 50% decline in the price of oil throughout the second half of 2014, however, raises questions about the amount of growth and development we can expect in 2015 and over the next five years. Some sources such as Colorado State University’s Regional Economist Mark Shields believe the price of oil will stabilize after mid-year at \$70.00 to \$75.00 per barrel. If this happens, Greeley can expect continued population growth following recent trends. If, however, the price drops and stays below \$40.00 to \$45.00 per barrel, we can expect a drop in the growth rate as oil and gas drilling activity is curtailed. Community Development staff will be monitoring this situation closely and will prepare updates to this report as appropriate. There is anecdotal evidence that drilling activity may be slowing, but so far this is not reflected in data available for Greeley or Weld County.

This report is part of a three phase analysis used to develop the City’s five-year Capital Improvements Plan (CIP), a mechanism for meeting the service and infrastructure needs of future development while maintaining existing service levels and managing community resources. The other parts of this analysis are the annual population estimate and the mapping of adequate public facilities. Through the CIP, the City also estimates development fee revenue that may be available to meet growth demands. City departments recommend projects which may then be incorporated into the City budgeting process. Future infrastructure upgrades and public facility construction are scheduled based on available resources.

II Methods

The methods used in this report include both quantitative projections and qualitative forecasting and are employed in a four-step process. Staff uses a variety of information sources, including building permit data, information from the real estate and building communities, and economic data from regional and state organizations.

Step 1

The first step uses historic home-building activity trends and projects growth for the following year, assuming continuation of recent trends. Using records from 1991 through 2014 provides a 24-year record of homebuilding activity that extends through high and low growth periods. This record covers three recessions and their recoveries. It also captures trends driving homebuilding including the increase in recent oil and gas drilling employment, increased employment in agricultural processing, the collapse of the so called “housing bubble”, the trend to “drive ‘till you qualify”, and other trends during that time. This historic permit data is used to project high, medium, and low projections of new units expected to be constructed for the next five years assuming current trends continue.

Step 2

The next step is to identify regional economic trends that will affect where the actual number of new permits will fall within the confidence interval projected from historic trends. These include an assessment of current regional and Greeley employment history, a review of the Colorado Business Economic Outlook published by the Leeds School of Business at the University of Colorado, and the Northern Colorado Economic Forecast sponsored by the Montfort College of Business at Northern Colorado University. In addition, staff also considers state housing and population projections generated by the Colorado Department of Local Affairs (DOLA), more localized population projections published by the North Front Range Metropolitan Planning Organization (NFRMPO), the Greeley Urban Renewal Authority’s (GURA) annual multi-family vacancy survey, input from the building community and planning staff on upcoming projects, and information from the real estate community. Specific assumptions are noted throughout the report.

Step 3

The third step is to prepare an inventory of permit-ready lots and lots in the review process that will likely become permit-ready within the forecast period.

Step 4

The final step is to examine other factors and trends that could affect expected homebuilding trends. These include the recent change in the ratio of multi-family to single-family housing,

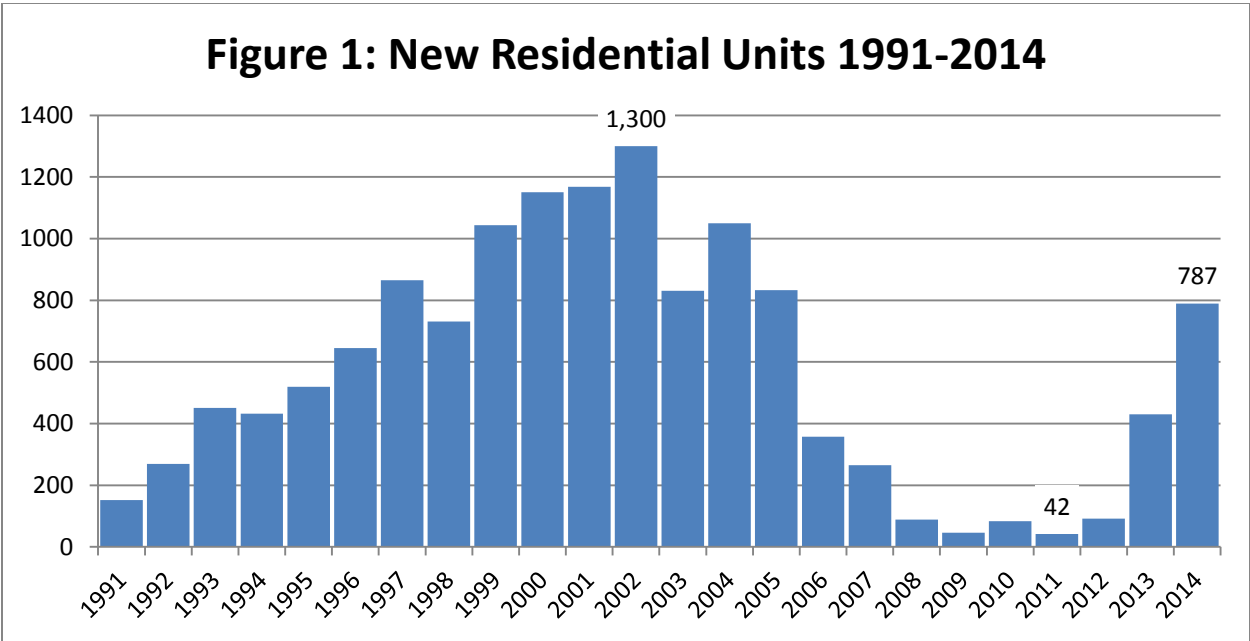
recent changes in the price of oil discussed above, and recent increases in the cost of raw water in Northern Colorado.

The qualitative forecasting portion of the process involves thoughtfully choosing a reasonable growth scenario for the report year and the 5-year CIP cycle based on observational information. The process includes a review of projections found in previous Growth and Development Reports and the Greeley 2060 Comprehensive Plan, GURA's annual multi-family vacancy survey, as well as input from the building community and planning staff on upcoming projects.

During this fourth and final step in the projection/forecasting process, staff also considers regional economic forecasts, state housing and population projections generated by the DOLA, more localized population projections published by the NFRMPO and information from the real estate community. Specific assumptions are noted throughout the report.

III Residential Growth

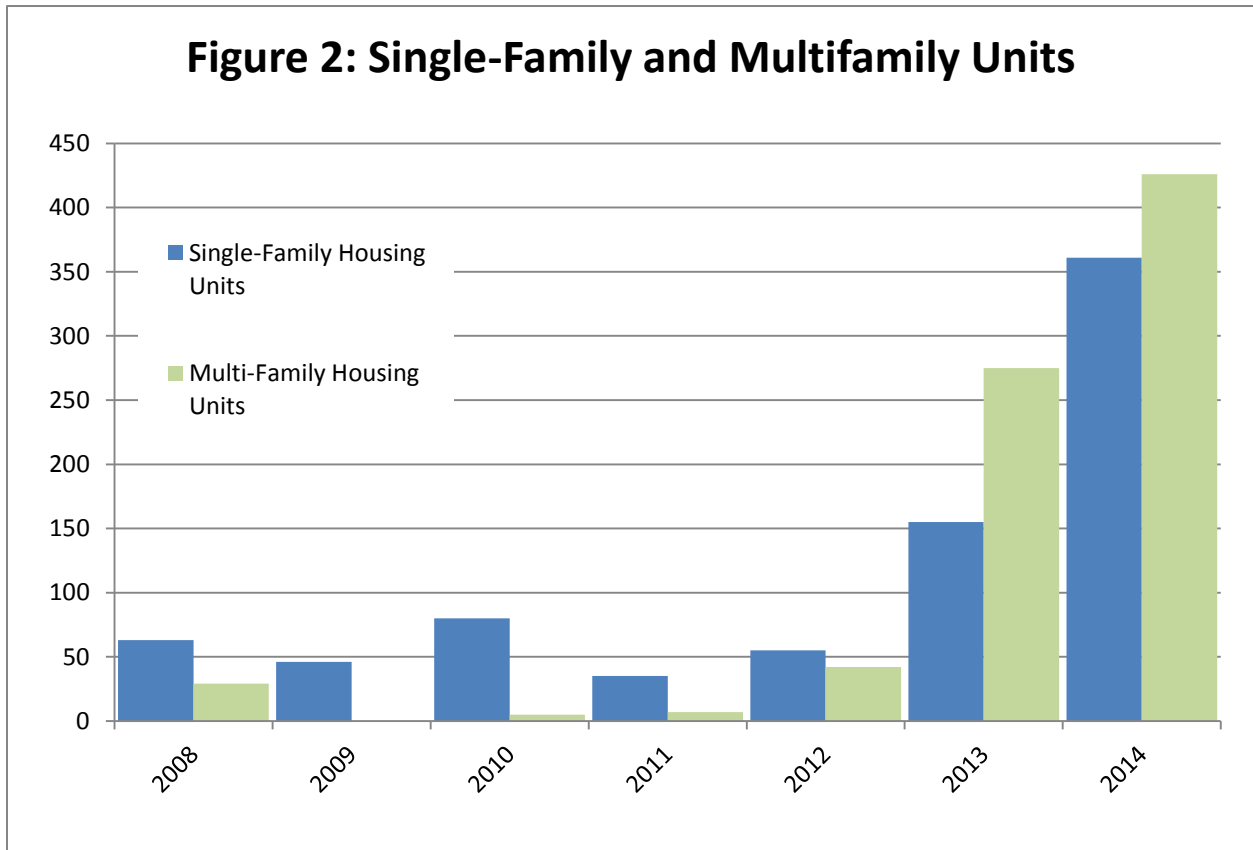
Greeley’s residential growth has been occurring in waves ranging from approximately 0.5 % to 4% per year with an average of about 1.9%. Figure 1 shows 24 years of new residential building permits. After relatively modest but steady increases in home construction throughout most of the 1990s, Greeley began to experience annual permit growth rates of nearly 4% beginning in 1999. The high growth rate peaked in 2002 with 1,300 new residential units, translating to an actual growth rate of 4.14% over 2001. Beginning in 2004, Greeley experienced five years of declining new construction followed by three years of stagnant low level housing construction. During the mortgage crisis and Great Recession, Greeley experienced limited building. During that time, foreclosure rates and unemployment were among the highest in the state. Permits for new housing reached a low of 42 units in 2011. Beginning with a small increase in building activity in 2012, Greeley experienced three years of significant growth in new housing construction. In 2015, there were 787 permits issued for new residential units (Community Development Department, 2014).



Mix of single and multifamily units

Since 2012, most of the new home construction consisted of multifamily units as shown in Table 1 and Figure 2. Over many years, the number of new single family homes has significantly exceeded the number of multi-family units. During the most recent recovery, however, the number of multi-family units has greatly exceeded the number of single family units (Community Development Department, 2014).

TABLE 1: NEW HOUSING MIX			
Year	Single family units	Multi-family Units	Total
2008	63	29	92
2009	46	0	46
2010	80	5	85
2011	35	7	42
2012	55	42	97
2013	155	275	430
2014	361	426	787



There are a number of possible reasons for change in housing mix. One of these reasons is that financing became available for multi-family developments sooner after the Great Recession than for single family developments. In addition, because of the large number of foreclosures, banks were slow to resume lending for single family mortgages. In addition, many families who had lost their homes to foreclosure could no longer qualify for mortgages either because of low

credit scores or the loss of down payment from the sale of their former home. Many families who lost their homes through foreclosure often became tenants in rental housing.

A long term trend in the American economy is the decline in real wages as higher wage jobs are lost to automation and the international labor market and replaced by lower wage jobs in service industries. Lower wage workers are less likely to be able to afford the mortgage payments on single-family homes. Many of the recently created high wage jobs are in the energy industry which is subject to rapid changes in unemployment. Many energy workers may be reluctant to invest in single-family housing even if they can afford it because they may need to relocate within a short timeframe.

The socio-economic status of potential first-time buyers has also shifted significantly—in part because of the Great Recession and partly because of changes in life style aspirations. The Millennial Generation, while by no means uniform, is substantially different than its parents or even than the generation between. While they are the most educated and tech-savvy

generation in history, many of them are heavily burdened with higher education debt. Additionally, many of them delayed obtaining drivers' licenses, preferring instead urban lifestyles built around walking, cycling, and mass transit as the primary modes of local transportation. Many of this generation would prefer to live in multi-family housing amenity rich in

Year	Multi-Family Vacancy Rate	Single Family Vacancy Rate
2010	8.6%	4.9%
2011	5.6%	4.5%
2012	4.6%	4.1%
2013	3.3%	3.3%
2014	3.6%	2.9%

amenities.

Table 2 and Figure 3 show the vacancy rates for single and multi-family housing. Since 2010, the multi-family vacancy rate has declined by 58% from 8.6% to 3.6% (Greeley Urban Renewal Authority, 2014). A healthy multi-family vacancy rate is considered to be 5% since this gives prospective tenant a reasonable chance at finding a suitable housing unit while giving landlords a reasonable chance at renting any vacant units fairly quickly. At an optimal 5% vacancy rate in multi-family there would be 664 vacant units. The actual 3.6 % vacancy rate is 478 units. The supply equals 72% of the demand. This indicates the need for 186 additional multifamily units to meet current demand without any population growth or new household formation.

The single family vacancy rate has declined by 41%, from 4.9% to 2.9% (Water and Sewer Department, 2014). A healthy single-family inventory is considered to be an inventory of housing for sale equal to the demand for purchase of homes within 6 months (Pettigrew, 2015). The number of vacant single-family units can be used as a rough approximation of the inventory

of for-sale units—some of these are vacant rental units and not for-sale and some single-family units are for-sale but are not vacant. A 2.9 % vacancy rate equals 706 units. A 6 month supply would equal 1121 single-family units. The supply approximately equals 63.0 % of the demand for single-family units. This indicates the need for 415 additional single-family housing units to meet current demand without any population growth or new household formation.

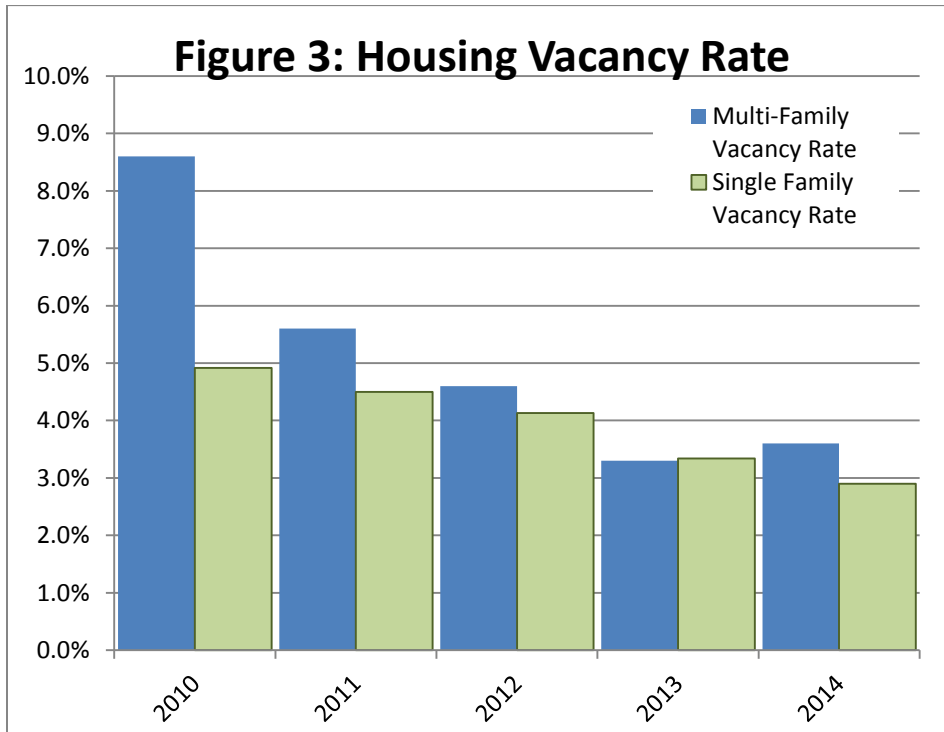


Table 3: Change in Housing Activity 2008-2014

Year	Construction Only (Units)	Percent Change in Construction	Housing Units Annexed	Additional Housing (Construction + Annexation)	Gross Units	(-) Demolitions	(=) Net Units Beginning of next year	Growth Rate
2008	86	-48.8%	3	89	36,076	0	36,076	0.25%
2009	45	-47.7%	1	46	36,122	9	36,113	0.10%
2010	84	86.7%	0	84	36,197	8	36,189	0.21%
2011	42	-50.0%	0	42	36,231	0	36,231	0.12%
2012	92	119.0%	0	92	36,323	10	36,313	0.23%
2013	430	367.4%	1	431	36,744	3	36,741	1.18%
2014	787	83.5%	1	790	37,534	0	37,534	2.15%

IV Population estimate

Since 1991, Greeley’s estimated population has grown 55.8% from 64,832 to 101,048 people. Figure 5 shows Greeley’s population growth from 1992 to 2015. The growth rate has fluctuated between 0.10% and 4.13 %, averaging 1.88% and with a standard deviation of 1.06%. Since 1991, Greeley’s population has grown by an average of 1.9 % per year (Community Development Department, 2015).

Table 4: 2015 Population Estimate

Year	Single family dwellings (SFD)	Single family occupancy rate (SFDocc)	Multi-family dwellings (MFD)	Multi-family Occupancy rate (MFDocc)	Average household size (AHS)	Population housed in University on-campus housing	Total Population
2015	24,338	0.971	13,284	0.964	2.7	2665	101,048
2014	23,976	0.967	12,856	0.097	2.7	2362	98,423
2013	23,743	0.967	12,581	0.954	2.7	2923	97,320
2012	23,688	0.959	12,539	0.944	2.7	2798	96,093
2011	23,646	0.955	12,539	0.091	2.7	2861	95,453
2010	23,570	0.951	12,539	0.914	2.7	2894	94,358
Population Estimate Based on Modified Housing Method (2010)							
Estimated Population = [(SFD x SFDocc) + (MFD x MFDocc)] x AHS + Up							

Figure 5: Estimated population 1992-2015

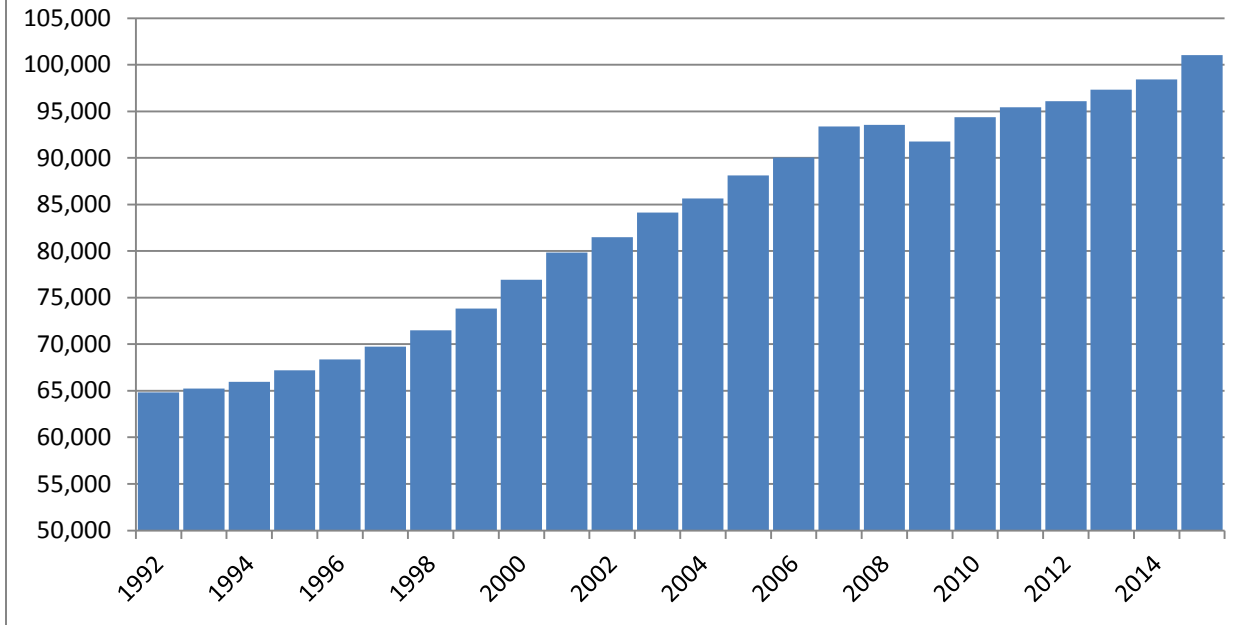
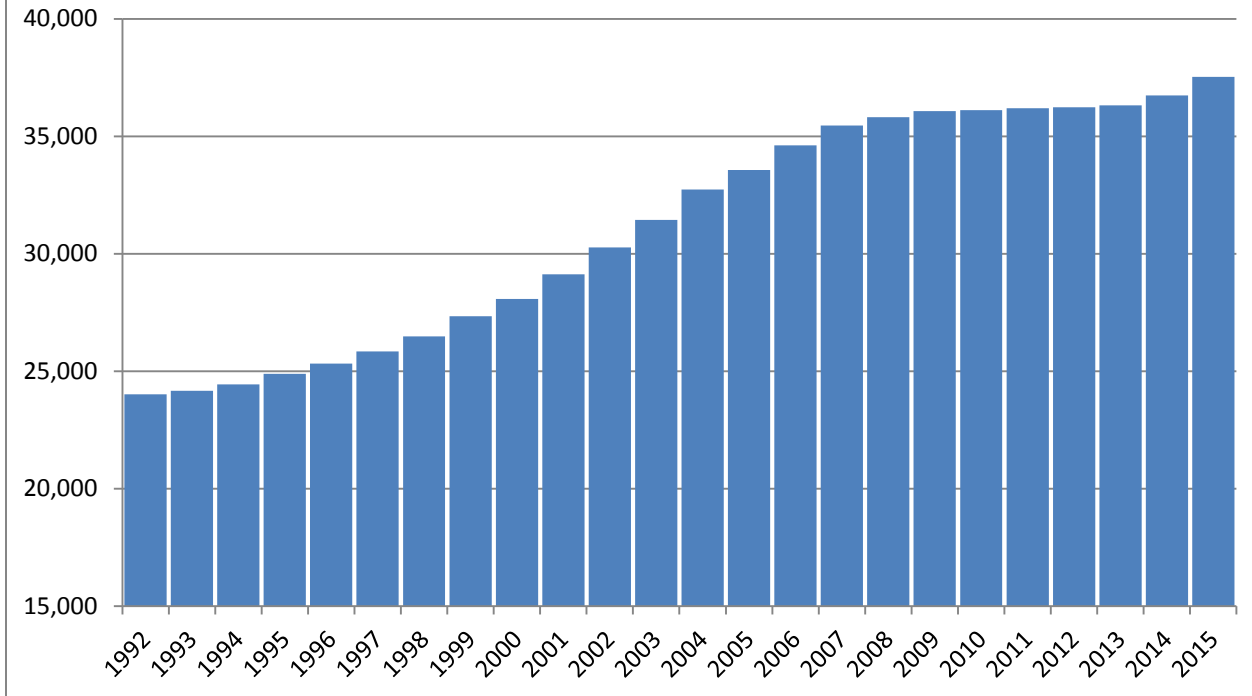


Figure 6 shows that the total housing stock plus building permits and annexations and subtracting demolitions has increased from 24,012 to 37,534.

Figure 6: Greeley's Housing Units 1992 to 2015



V Employment

Employment continues to improve throughout Colorado, especially in Northern Colorado. The civilian labor force grew by 2.19% statewide while the Greeley MSA, which includes all of Weld County, civilian labor force grew by 8.90%, the highest of any Metropolitan Statistical Area in the state as shown in Table 5.

The total number of employed people also jumped substantially, with a statewide growth of 4.08% statewide and 12.54% in the Greeley MSA, also the highest in the state. At the same time, the unemployment number and rate declined substantially, both at the state and local level.

MSA	Civilian Labor Force	% Change over Dec. 2013	Employed	% Change over Dec. 2013	Unemployed	% Change over Dec. 2013	Unemployment Rate	Change over Dec. 2013
Boulder-Longmont	184,991	1.98%	178,992	3.91%	5,999	-34.33%	3.2%	-36.00%
Colorado Springs	306,256	-2.00%	290,201	0.74%	16,055	-34.31%	5.2%	-33.33%
Denver - Aurora	1,458,610	1.62%	1,400,510	4.12%	58,100	-35.60%	4.0%	-36.51%
Fort Collins-Loveland	186,778	3.25%	180,570	5.48%	6,208	-36.13%	3.3%	-38.89%
Grand Junction	75,937	-1.89%	72,378	1.25%	3,559	-39.84%	4.7%	-38.16%
Greeley	135,279	8.94%	129,848	12.42%	5,431	-37.37%	4.0%	-42.86%
Pueblo	74,265	-1.22%	70,017	6.08%	4,248	-38.95%	5.7%	-38.71%
Colorado Totals	2,806,780	2.26%	2,692,430	4.45%	114,350	-31.52%	4.1%	-32.79%

https://www.colmigateway.com/analyzer/session/session.asp?cat=CUR_PROFILES_AREA updated for 2015 on Feb. 5, 2015

Table 6 shows the year-over-year comparison of employment in the Greeley MSA (Colorado Department of Labor and Employment, 2014). It shows significant increases in the size of the workforce and total number of persons employed, as well as significant decreases in the number of unemployed persons and the unemployment rate. The 8.9% increase in the civilian

labor force includes immigration to the Greeley area, commuting from outside the Greeley area, and people returning to the labor force who were not included in recent reporting. Examining the growth in the Greeley labor force when compared to the surrounding Metropolitan Statistical Areas appears to indicate that there could be significant pent up regional demand for housing. This demand may currently be addressed through doubling up on housing units, long distance commuting, or employed persons living in campers or group housing away from their families.

Table 6: Greeley MSA Year to Year Employment Comparison			
	Dec. 2012	Dec.2013	Dec. 2014
Civilian labor force	119,038	124,178	135,279
Number Employed	108,261	115,507	128,848
Number unemployed	10,777	8,671	5,431
Unemployment Rate	9.1%	7.0%	4.0%

Table 7 shows the employment growth for several large public sector employers from 2000 to 2015. This growth, while significant, is at a slower rate than the private sector employment growth (Community Development Department).

Table 7: Selected public employers budgeted full time employees, 2010 to 2015						
Full-Time Equivalents	2010	2011	2012	2013	2014	2015
City of Greeley	860.5	847	859	863.3	832*	857.25
Weld County	1210	1225	1228	1229	1397	1440
Eaton School District	NA	188	180	180	184	191
Greeley Evans School District	2386	2242	2290	2296	2293	2178
Windsor School District	NA	598	610	616	603	607
Aims Community College	443	419	410	460	454	448
City of Evans	90	89	88	88	88	88

*City employee numbers do not include 44 employees who were transferred to the Emergency Communication Center.

VI Land supply

An important factor in projecting building permits is an examination of the supply of lots. As existing developed lots are absorbed by building activity, are they being adequately replaced by developed and platted lots? Table 8 shows the inventory of developed and final platted single family lots as of the end of 2013 and 2014. Single family lots are rapidly being absorbed and

Table 8: Potential Single Family Units Based on Buildable Lots

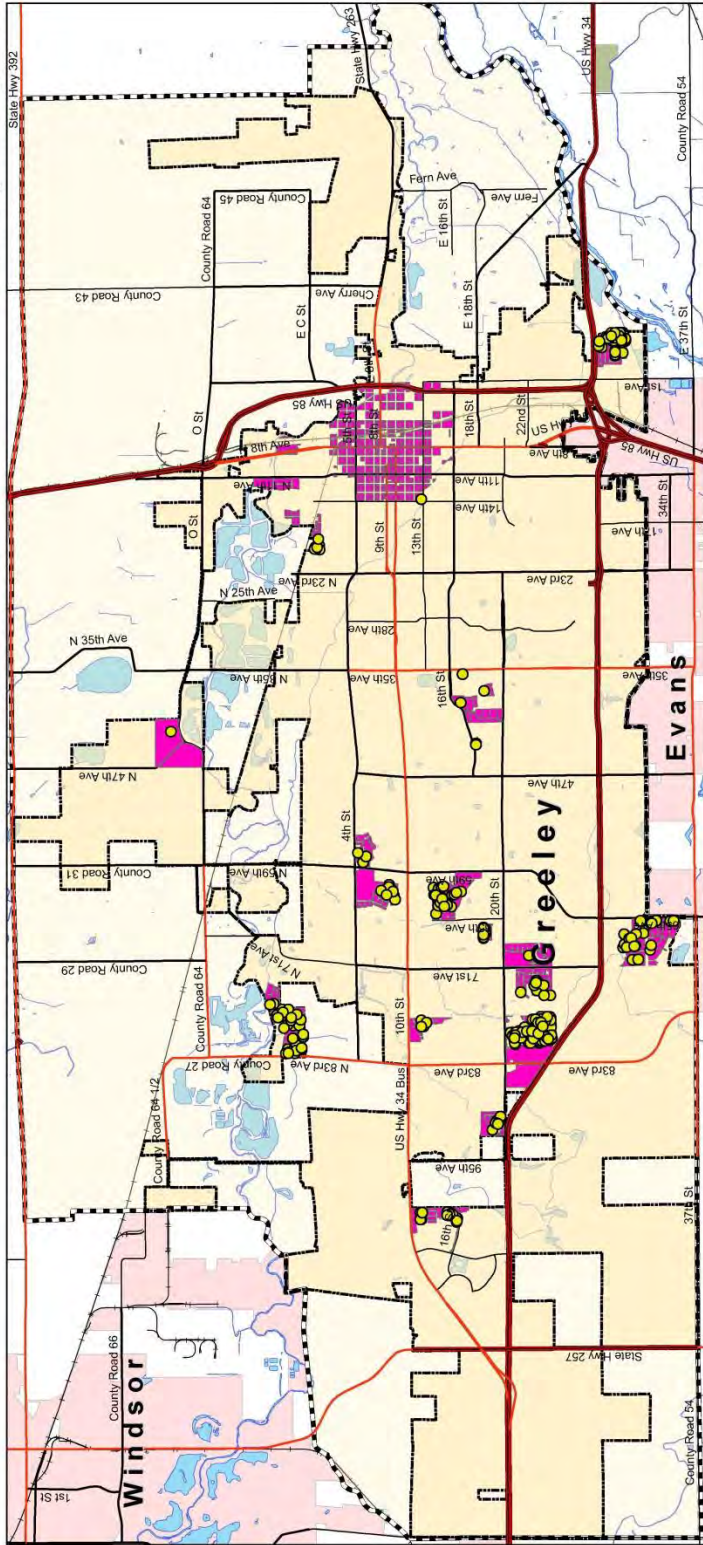
Approval Status	Single Family Lots	
	2013	2014
Approved projects with infrastructure installed (permit-ready)	656	651
Created via demolition since 2012	13	13
Total permit ready lots	669	664
Approved projects with incomplete infrastructure	620	646
Net permit-ready Lots + platted Lots	1289	1310

built upon. With the increase in home building in 2015, several subdivisions were approved through final platting, developed and had many homes completed. The net change in available lots between 2013 and 2014 is a 16 % increase in total lots with a 1% decrease in finished lots. Developers completed the horizontal infrastructure on 403

additional lots in 2014, while builders took out permits on 361 building permits. At the end of 2014, 664 developed lots remained available for builders. During 2014, final plats were recorded containing 439 lots, many of which are likely to be fully developed with all required improvements (permit-ready) during 2015. Despite the increase in building permits in 2014, the supply of platted lots actually increased, while the supply of finished lots decreased by less than 1%. At the current rate of building, 361 single family dwellings per year, the current activity in platting and development of lots appears to be sufficient to maintain an adequate flow of lots for the next three and a half years. For this growth to occur, all approved lots need to be developed (Community Development Department). To supply lots for future needs, additional land needs to be brought forward through the platting process.

MAP 1: Single Family Building Permits issued in 2014

Greeley Growth and Development Projections



Home Building Activity in 2014

January 1, 2015

Legend

- Single Family Building Permits 2014
- Subdivisions with new Single Family Building in 2014
- Greeley City Limits
- Greeley Long Range Expected Growth Area

Created: January 26, 2015
 By: J. Barrett

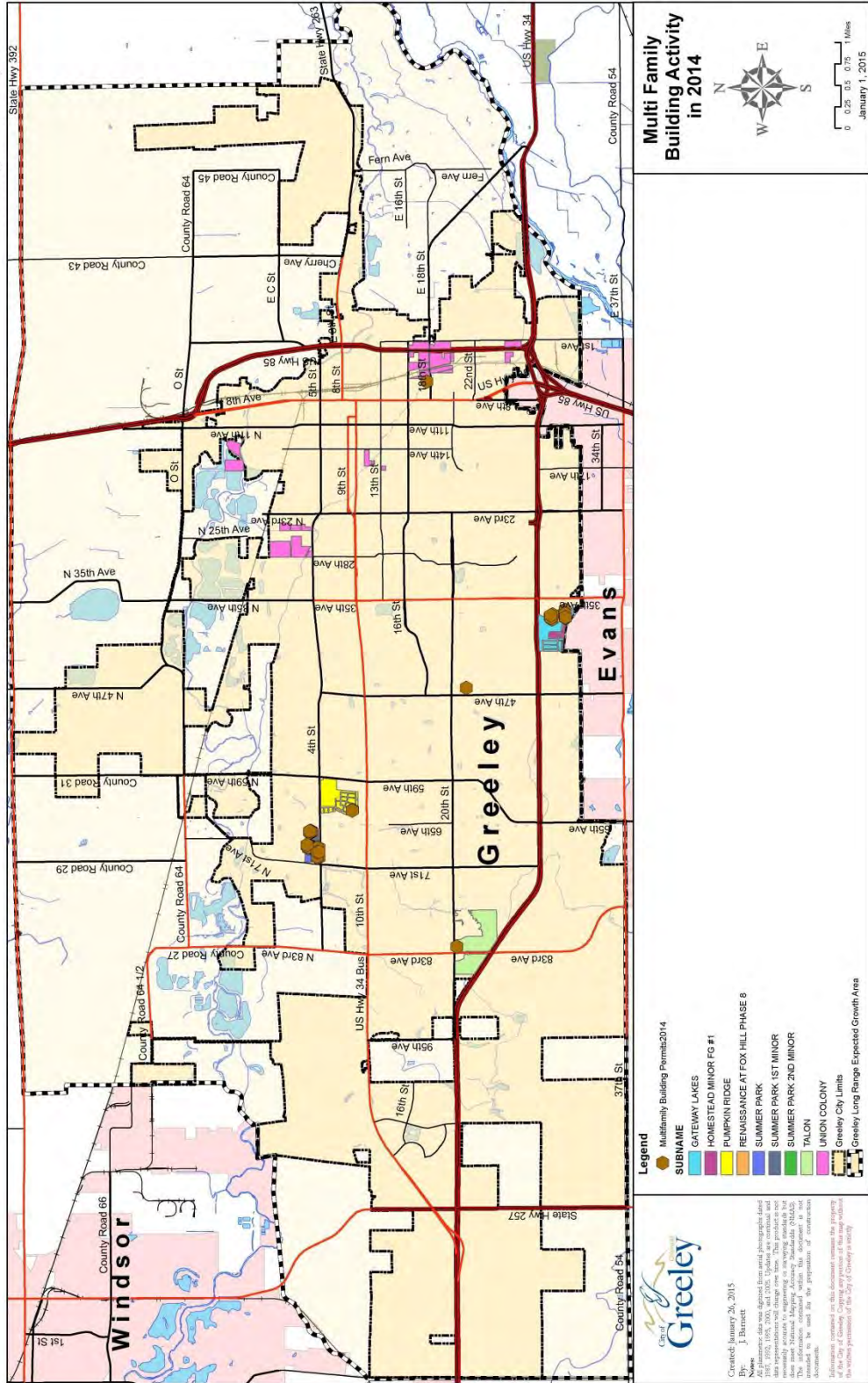
This information has been digitized from aerial photography taken in 2014. The information is not intended to be used as a substitute for a professional survey. The information contained within this document is not intended to be used for the preparation of construction documents. Subdivisions outlined in this document remain the property of the City of Greeley, Colorado. All other information is the property of the City of Greeley, Colorado.

Table 9 shows that there are a total of 407 multi-family units under construction as of Feb. 15, 2014. In addition, there are permit ready sites for an additional 60 units and 433 are currently under site planning or zoning review. The additional multi-family sites, if they are all approved, should be sufficient for approximately one year of new multi-family units (Community Development Department).

Table 9: Multi-Family Units in Process					
Project/ Location	Units Under Construction	Permit ready units	Units being Planned	Notes	TOTAL
Creek View 8200 20th Street	348				348
Homestead Phase III North of 29th Street, Approx. 125' East of 39th Avenue	44		30	Pending Rezone	74
Homestead Phase IV South of 29th Street, Approx. 125' East of 39th Avenue			82	Site Plan Review	82
Saint Michael's Town Center Phase I South of 29th Street Approx. 250' West of 67th Avenue			57	Site Plan Review	57
The Reserve SEC of 29th Street and 58th Avenue			72	Site Plan Review	72
Mission Village 2239 5th Street			50	Site Plan Review	50
Alpine Flats 5002 20th Street			138	Site Plan Review Pending Rezone	138
431 8th Street 431 8th Street			4	Site Plan Review	4
Summer Park SEC of 71st Avenue and Grizzly Drive		35			35
Renaissance at Fox Hills 4672 20th Street Road	15	25			40
TOTAL	407	60	433		900

MAP 2: Multi-Family Building Permits issued in 2014

2015 Greeley Growth and Development Projections



VII Trends

Trends that could impact growth and development in Greeley include those that could affect the regional economy, such as continued growth in the technology sector, trends in agriculture, uncertainty after several years of growth in the oil and gas industry, and factors affecting the mix of single and multi-family housing. Factors affecting the mix of single and multi-family housing include apparent lifestyle preferences of the Millennial Generation, the slow recovery from the Great Recession, the availability of financing, and the high cost of raw water.

Regional Economy

The economy of Northern Colorado can be divided into two parts, 1) science, technology, and information and 2) oil and gas and agriculture. These two sectors are affected by different trends and must be analyzed differently (Shields, 2015).

Growth in the science, technology, and information sectors has been strong since the Great Recession and remains so. This growth is expected to continue for the next several years. Many jobs in these sectors pay well and workers in these industries can often afford upscale homes. Many of these workers have a strong preference for significant community amenities such as natural areas, and trails, and walkable communities with bicycle transportation networks and mass transit and they are willing and able to pay premium housing prices to live in these communities (Shields, 2015) (Leeds School of Business, 2015).

Agriculture

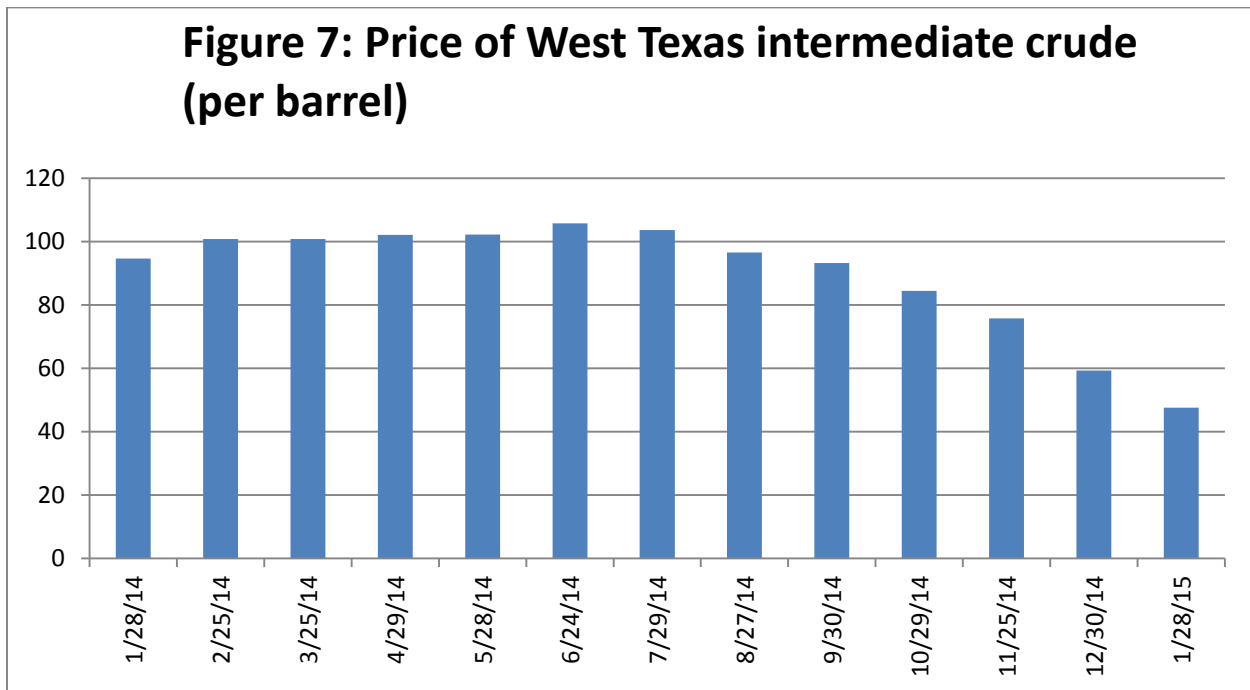
Weld County is the ninth most productive agricultural county in the United States and the most productive outside California in terms of the value of agricultural products produced (Bureau of the Census, 2012). While crop production is a significant portion of this value and is an important support of food processing plants, it is food processing that generates most of the added value. In 2015, agricultural commodity prices are expected to soften, leading to lower profits for farmers. This can lead to the consolidation of farms into fewer but larger operations eventually relying on less labor but larger, more capital intensive equipment. Consolidation does not reduce total acreage or crop production, but urbanization of land and conversion of water to municipal and industrial use does affect agricultural crop production (Bureau of the Census, 2012).

One of the major trends affecting the future of agriculture is the sale of agricultural water for municipal and industrial uses which can lead to permanent reduction in irrigated cropland. During the past two years, the price of agricultural water has nearly tripled (Lynn, 2015). This dramatic increase in price together with the average age of farmers can be an incentive to sell

these water rights. After the sale of water rights for future municipal and industrial use, a municipality typically pursues a “change in use” and a “change in diversion” through the water court and the water continues to be rented to the farmer for agricultural use. As more water is converted, land is taken out of production and dried up.

Uncertainty after several years of growth in oil and gas

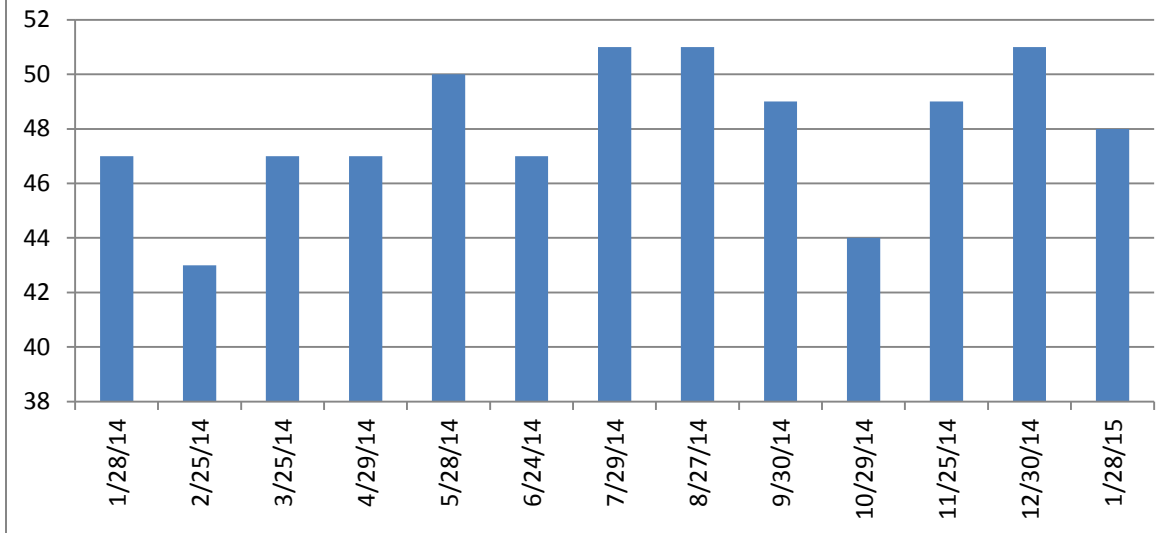
The price of West Texas Intermediate crude oil has dropped from \$105.79 per barrel on June 24, 2014 to \$47.60 per barrel on January 28, 2015, prices last seen in 2009 (Statista, 2014). Figure 7 shows the oil price per barrel from January, 2014 through January, 2015.



The price seems to have stabilized between \$45.00 and \$55.00 per barrel during the last month, but it may be too soon to tell whether this apparent stabilization is long-term or not.

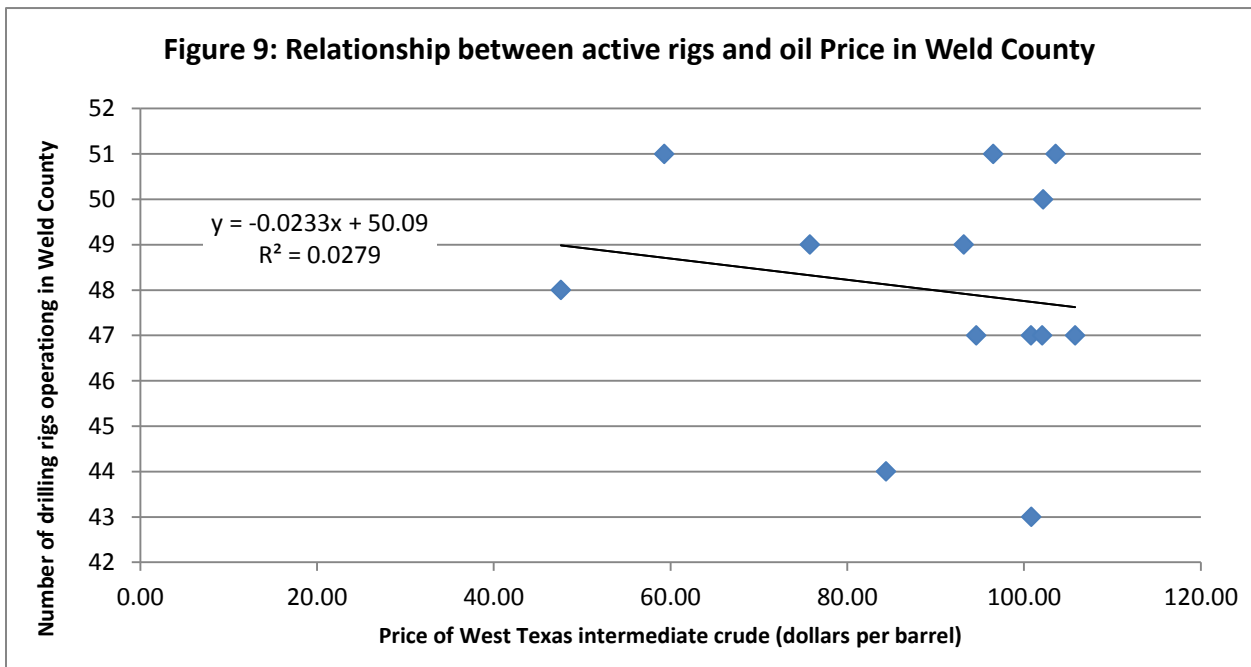
To date, drilling activity in Weld County has continued with little apparent effect from the price of oil. While there is a clear downward trend in oil prices in late 2014, there is no clear trend yet in active drilling rigs as shown in Figure 8 (Colorado Oil and Gas Conservation Commission, 2015).

Figure 8: Number of drilling rigs operating in Weld County



Interestingly, there is a very limited statistical relationship between the price of oil and the number of active drilling rigs in Weld County, as shown in Figure 9, at least to date.

Figure 9: Relationship between active rigs and oil Price in Weld County



While it might be expected that the number of drilling rigs would drop with a decline in oil price, for prices per barrel between \$47.60 and \$105.79, the change in oil prices explains less than 3% of the variability in the number of active drilling rigs.

Despite the lack of employment decline to date, future curtailment of drilling activity remains a concern since the drilling and fracking of each well employs approximately 100 to 125 people. With the break-even price for fracked oil wells in the Denver-Julesburg basin between \$40.00 and \$45.00 per barrel, today's low prices raise concerns (Shields, 2015). Shields believes that the price of oil will stabilize after mid-year at \$70.00 to \$75.00 per barrel. If this happens, Greeley can expect continued population growth following recent trends. This trend bears watching over the next several months.

Factors affecting housing mix

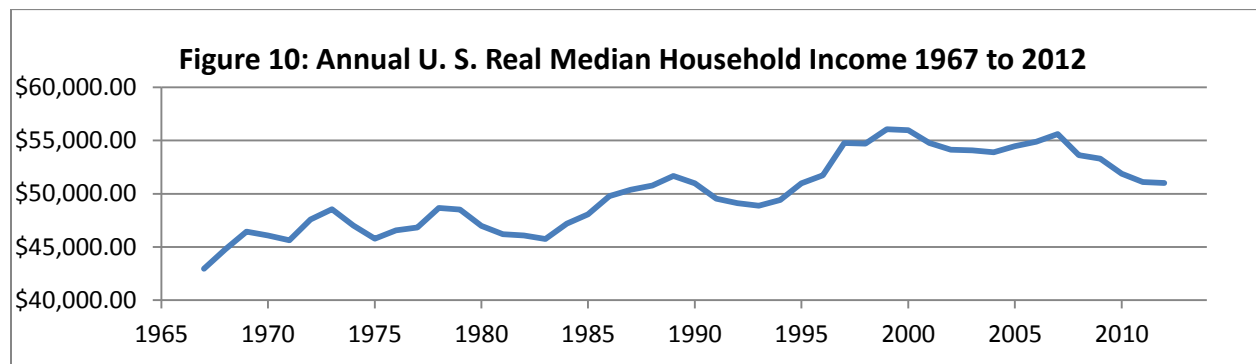
Factors affecting the future mix between single and multi-family housing include preferences of the Millennial Generation, the long term decline in real wages, and the cost of providing sufficient raw water.

Preferences of the millennials

Throughout American history, each generation has been significantly different than their parents in important characteristics, including attitudes, expectations, education, and aptitudes. The latest generation to come of age is the millennial generation. While far from uniform, this generation is the most highly educated and most technologically skilled in history. Many of them graduated from college with significant debt. Because a significant portion of communication and media access was via smart phones and text messages rather than face-to-face, many have not obtained driver's licenses. Because many have had high stimulation early in life, many prefer rich urban environments.

Long Term U. S. Real Wage Trends

Although Greeley and Northern Colorado have been fortunate during the last three years because of oil and gas drilling, U. S. Census data points out that the U. S. real median household income adjusted for inflation peaked in 1999 at \$56,080 and again in 2007 at \$55,627. From 2007 until 2012 (the latest year for which median household income is available), real median household income declined 8.3% to \$51,017 (see figure 10).



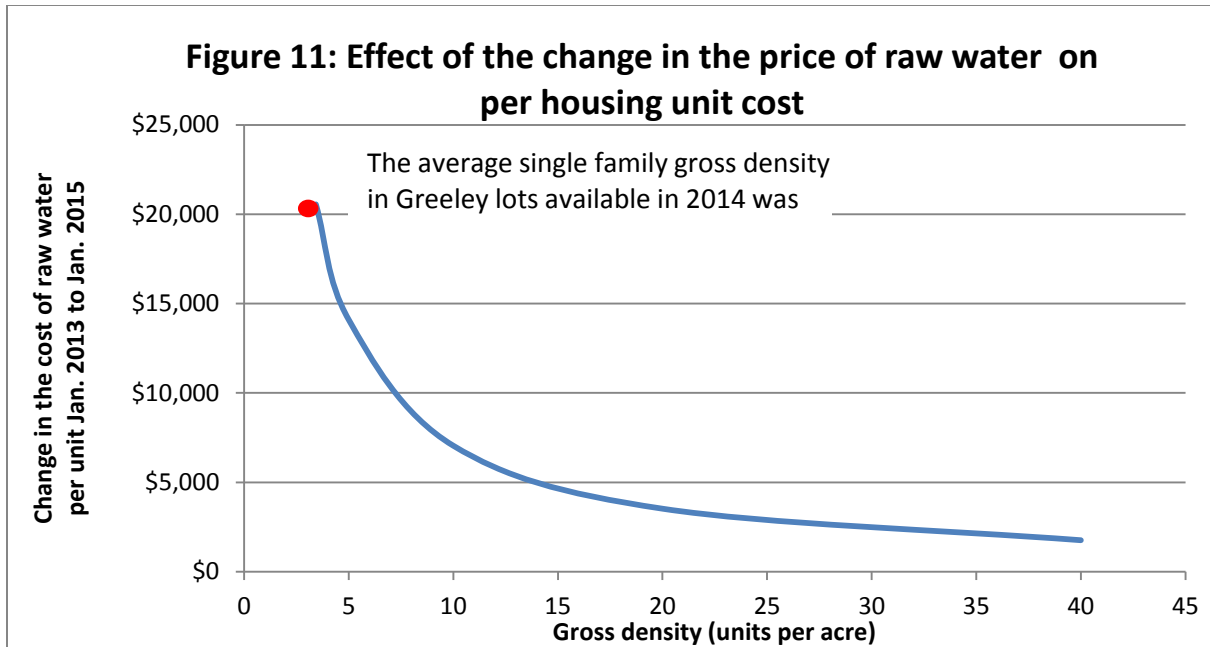
Cost of raw water

New housing pays for water service in two ways, 1) plant investment fees that pay for the “buy-in” of the new housing unit to existing facilities to store, treat, and transmit water (See Table 11); and, 2) payment for or dedication of the raw water rights to assure that the City has adequate senior, high-quality water rights to serve its water customers. Both the plant investment fees and the cost of providing raw water have lower cost per unit for higher density and multi-family housing. The cost structures of both raw water requirements and tap fees reflect the high proportion of landscape irrigation water applied to lawns in residential areas—especially single family areas. In Greeley, approximately 55% of treated water is used for landscape irrigation.

Water plant investment fees vary by density, reflecting the higher per-unit water use in single family houses because of higher water use per household for landscape irrigation. During summers, over 70% of water is used for outdoor irrigation, and a significant portion of the capacity in reservoirs, treatment plants, transmission lines, and water mains is required to provide capacity for this water. The plant investment fees and water dedication requirements are mechanisms that allocate costs toward users likely to use more water. Nonetheless, these costs per unit have the impact of encouraging higher density and multifamily housing.

The price of water in Northern Colorado has tripled during the last two years, creating an impact on the affordability of newly built-housing, and potentially changing the average density of housing projects in Greeley for the future. Northern Colorado water providers typically require developers to provide raw water rights for each gross acre of land being developed for residential use to provide the necessary water to be used by the future residents. The approach of requiring raw water for housing on a cost per land area rather than a cost per unit basis reflects the typical residential use of over half the water used being used for landscape irrigation. As that raw water price increases, it can be expected to make single family housing less affordable, while having a less significant impact on higher density multi-family projects.

To date, no projects have been developed using water rights purchased since the recent water price escalation. It appears that there is a sufficient supply of lots where water rights have been dedicated in Greeley to meet the need for lots for approximately 3 ½ years at the 2014 rate of single-family building.



The increase in water price appears to be driven by projections of continued high growth in Northern Colorado municipal and industrial demand. As more conversion of agricultural water to municipal and industrial use takes place, there is less available water suitable for this conversion. Continued raw water price escalation can be expected to affect the market for new housing. Raw water is paid for in the price of new single family homes and in the rent paid for rental units. Specifically, the price of raw water becomes a \$2.50 per square foot cost (\$15,000 for a single family house on a 6000 square foot lot) added to the lot area for single family housing. This price is sufficient to change the level of affordability of single-family housing.

Table 11: The Effect of Raw Water Price on Per Unit Cost by Housing Type

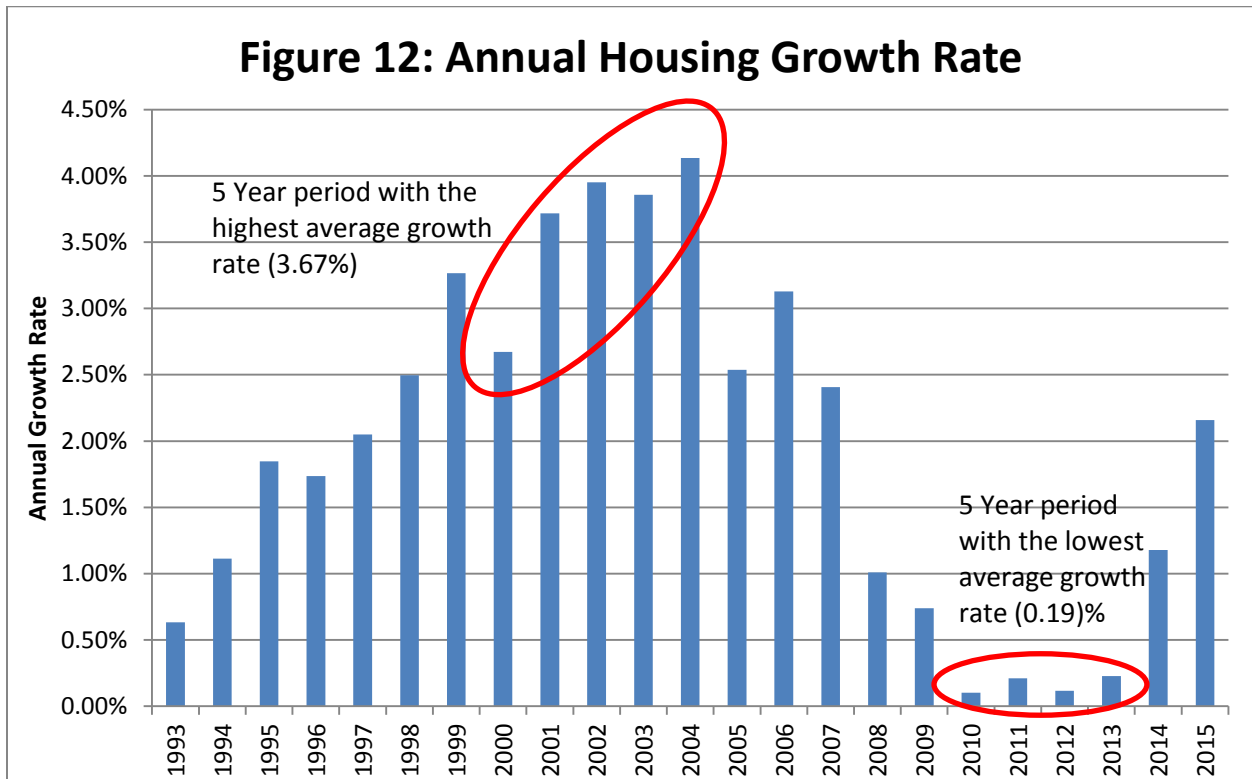
Density (Units per acre)*	Cost per unit at 3 acre feet per gross acre		
	\$9500/ Acre Foot	\$33,000/ Acre Foot	Change
3.43	\$8,309	\$28,862.97	\$20,554
5	\$5,700	\$19,800.00	\$14,100
10	\$2,850	\$9,900.00	\$7,050
20	\$1,425	\$4,950.00	\$3,525
40	\$713	\$2,475.00	\$1,763

* The average gross density for single family lots available in Greeley during 2014 was 3.43 units per acre.

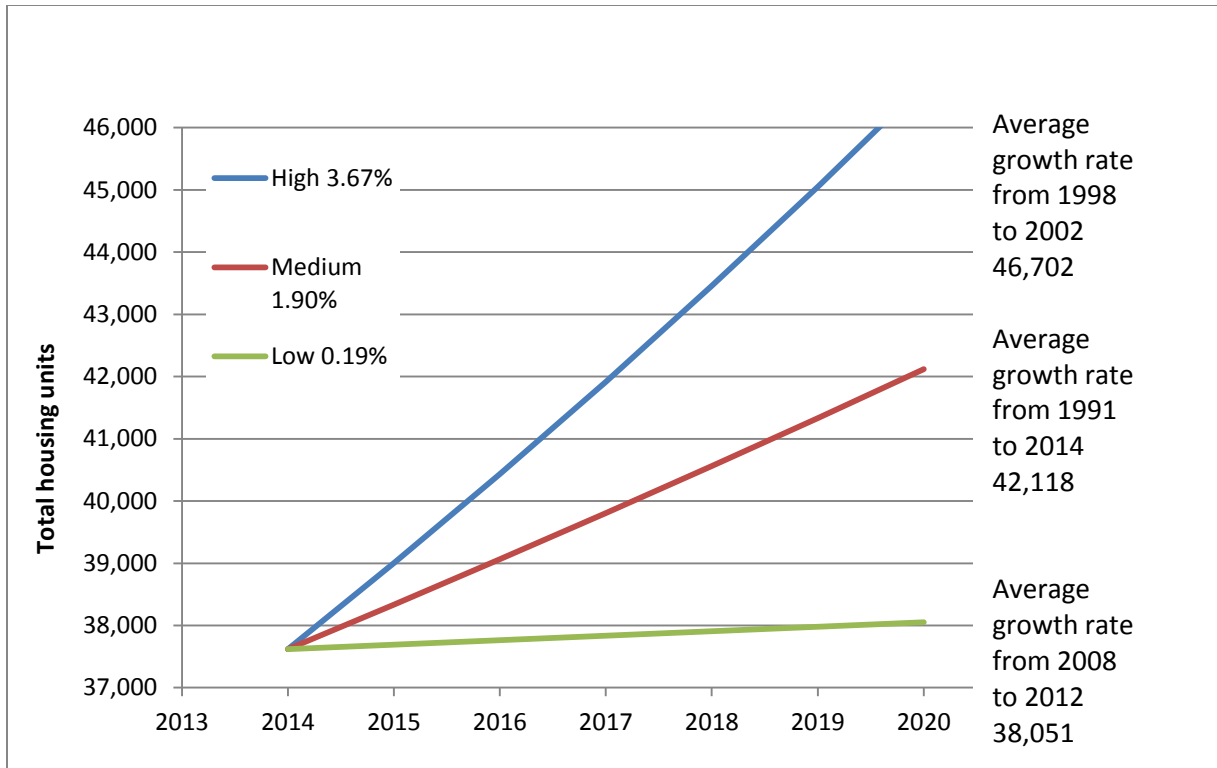
Given the willingness of the Millennial generation to live in more urban environments and multi-family housing, it appears that as new land is developed where raw water would have to be provided at today's higher price, development may occur at higher densities and a different housing mix than in the past as shown in Figure 11. The City of Greeley is currently doing a study to address the dedication requirements for raw water and the amount for cash-in-lieu of dedications, and whether policy changes should be made.

VIII Projections

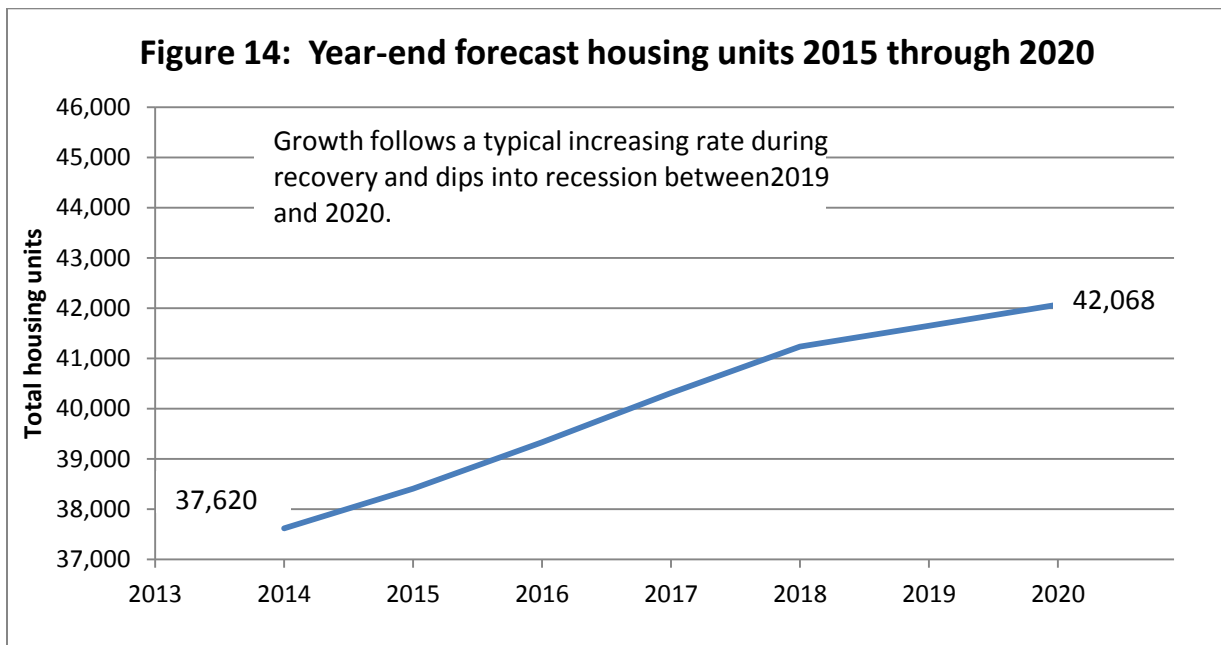
Between 1991 and 2014, growth rates ranged from a low of 0.12% to a high of 4.14% as shown in Figure 12. The distribution of these growth rates is highly bimodal with lower growth rates occurring during and immediately following recessions and higher growth rates occurring during recovery periods.



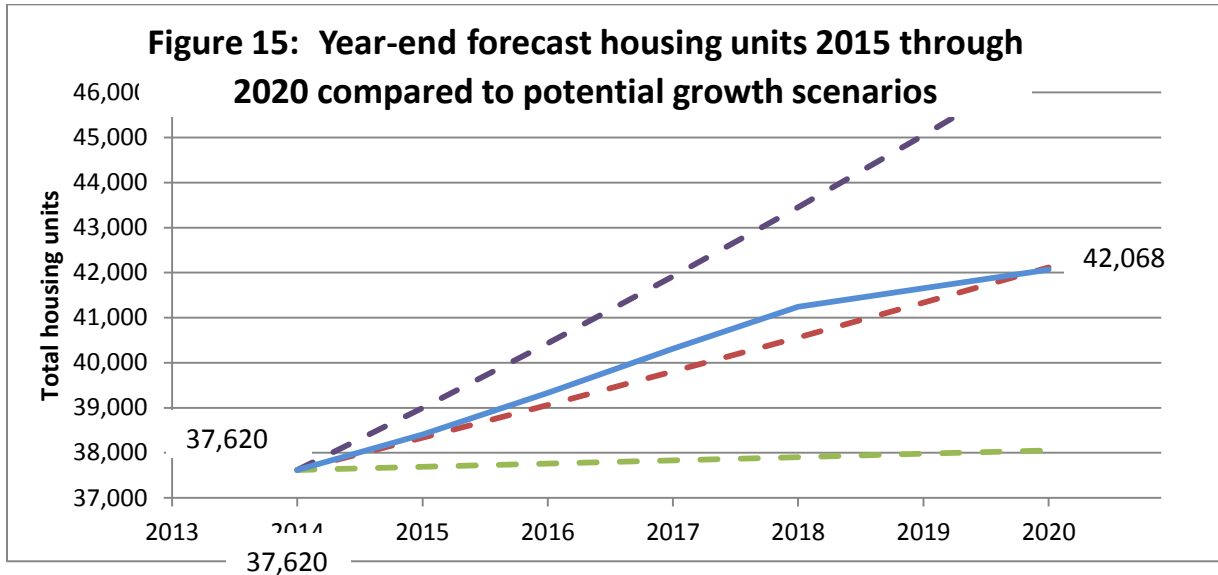
Additionally, strong growth has been driven by energy development, especially during the past two years. Although employment has remained steady through January, 2015, the potential for further price drops and volatility raise questions about projecting medium-term growth. Because many of the oil field workers employed in Weld County had relocated to this area, there is a potential for negative energy employment effects to create impacts to the real estate and housing markets.



If oil prices rebound and stabilize at \$70 to \$75 per barrel by mid to late 2015 as some economists project (Shields, 2015), and if this stability continues throughout the next five years without a recession, then a continued growth rate averaging around 2% is likely. We anticipate that this growth would accelerate slightly each year from 2% in 2015 to 2.5% in 2017, before dropping to approximately 1% in 2019.



This would be consistent with the slow recovery currently underway. Figure 15 shows that this growth rate would result in a slightly higher than average growth rate over the next five years consistent with both the continuing recovery and the broad and robust growth in Northern Colorado.



Per this projection, new home construction by year over this period would be as shown in Table 11.

	Total New Housing Permits	Single Family Permits	Multi-Family Permits
2014	787	361	426
2015	922	423	499
2016	983	451	532
2017	927	390	537
2018	412	90	322
2019	417	95	322
2020	787	95	692

It is expected that trends in place will continue as they have since 2012. Unless oil prices decline much more than they already have, Greeley’s growth rate is not likely to be affected. Long term diversification of Northern Colorado’s economy is expected to continue, and this has, and will

continue to have, a positive effect on Greeley. We can expect between 900 and 1,000 permits for new housing units to be issued during each of the next three years with a recession or leveling-off of the growth rate sometime before 2020. It is anticipated that much of the pent up demand for housing should be addressed during this time. As land with water already dedicated is absorbed and single-family housing becomes less affordable, market forces will likely mean that a higher proportion of these housing units will be multi-family because of the lower cost per unit of raw water and tap fees.

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