LEWIS AND CLARK COUNTY

GROWTH POLICY UPDATE 2015

VOLUME 1—KEY ISSUES REPORT

Adopted March 3, 2016

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GROWTH & DEVELOPMENT TRENDS

KEY POINT #1 — The Helena Valley Planning Area contains 95% of the County's population and has experienced 98% of its development activity over the past decades.

DESCRIPTION OF THE HELENA VALLEY PLANNING AREA

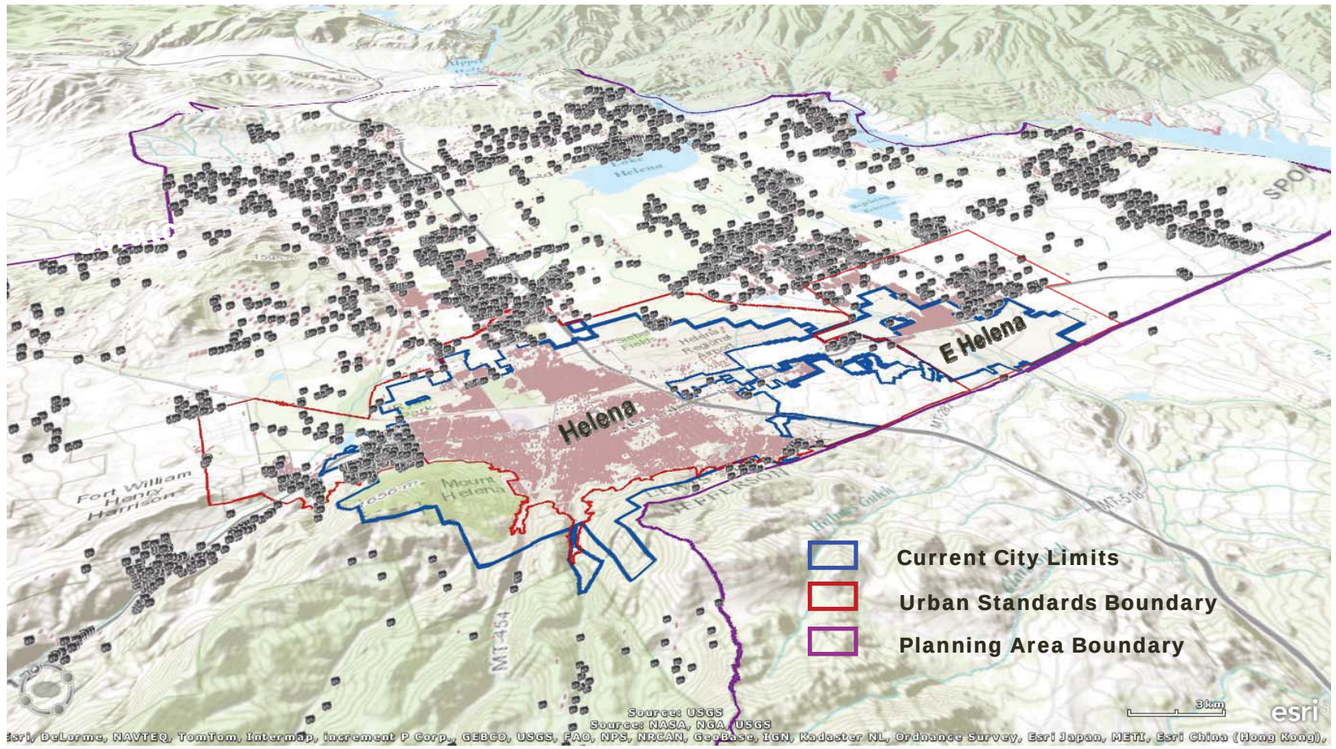
The 2004 Lewis and Clark County Growth Policy identified five planning areas, focusing on local land use patterns and regional issues, and also targeting the five areas for additional area-specific planning efforts. One of the areas is the Helena Valley Planning Area (HVPA). The 2004 Growth Policy defined the boundary of the HVPA as:

"The Helena Valley planning area is located in the southern part of Lewis and Clark County, and contains approximately 400 square miles east of the Continental Divide. The area is bound by the North Hills on the north, the Missouri River, Hauser Lake, and the Spokane Hills on the east, the County Line with Jefferson and Broadwater Counties on the south, and the Continental Divide on the west."

The Helena Valley Planning Area does not include the city limits of Helena and East Helena, which have their own Growth Policies. As the city limits of these communities change, the boundaries of the HVPA changes as well. Today, the HPVA covers roughly 386 square miles (244,000 acres) due to annexations by both Helena and East Helena over the past decade.

This small part of Lewis & Clark County (less than 10% of the County's land area) contains 95 percent of the County's population, and an even greater percentage of its development activity occurs here. The issues faced in Helena Valley and its surroundings are substantially different than in other, more rural parts of the County such as Lincoln, Augusta, and Wolf Creek. For these reasons, this 2014 update of the County's Growth policy will focus on the geography and issues facing the Helena Valley Planning Area.

Within the planning area, there are certain critical issues that face the Planning Board and Board of County Commissioners whenever those governing boards review a development proposal. Will there be enough water to serve the residents of new neighborhoods without affecting the wells of surrounding homeowners? Can existing roads handle more and more traffic without major improvements? How will wastewater from new subdivisions be managed to ensure that drinking water in the aquifers beneath them isn't degraded? Can the system of volunteer fire districts effectively serve a population that is now larger than the population of the City of Helena without a public water supply system to fight fires? These are difficult questions and there are no easy answers. This Growth Policy update is an attempt to openly and honestly explore these critical issues and to develop appropriate policies and programs to better manage the coming growth and development in Helena Valley that is inevitable.



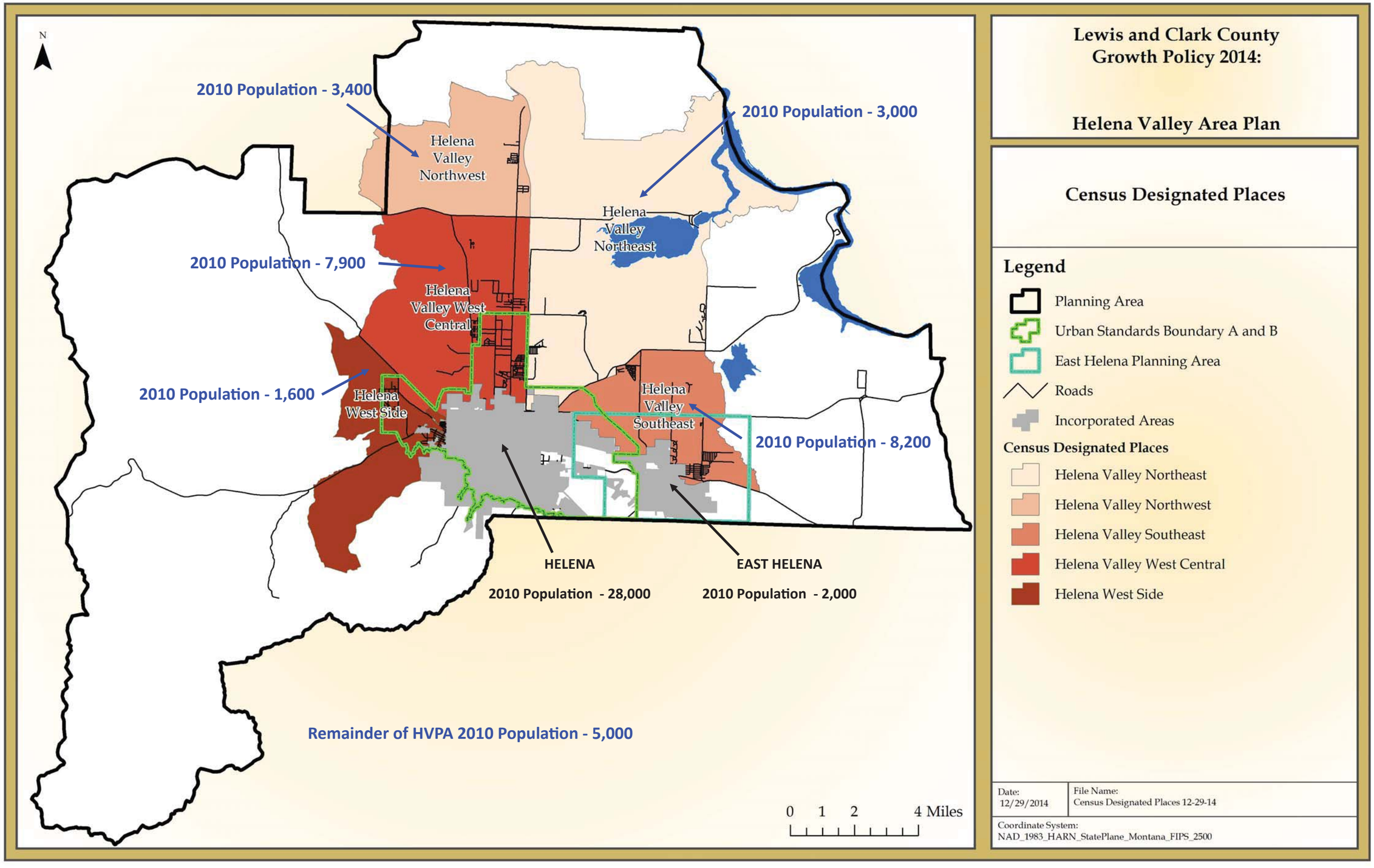
CH 1 FIGURE 1— Between 2000 and 2010 nearly 5000 people moved into the unincorporated portions of Helena Valley. Each icon on the map represents a new residential address added during that time period. There are now more people living in the Helena Valley Planning Area outside of the City of Helena than within the city limits.

EXISTING CONDITIONS

According to the US Census, in 2010 there were 63,395 people living in Lewis and Clark County. At that time 29,238 people lived in the Helena Valley Planning Area outside of the two cities. This was about 1,000 people more than were living in the City of Helena, making the HVPA the most populated region in the county.

The HVPA has experienced significant growth over the course of the last few decades (see Fig. 1 above). Between 2000 and 2010, its population grew by 4,600 people, an average annual growth rate of 1.9%. For comparison purposes, between 2000 and 2010, 64% of all new residents that moved to Lewis and Clark County moved into the HVPA, 31% moved to the City of Helena, and 4.5% moved to East Helena, and the rest (.5%) moved elsewhere in the county. Most of the growth happened in only a portion of the planning area.

Within the Helena Valley Planning Area, there are five Census Designated Places (CDPs). According to the US Census Bureau, CDPs are delineated to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated. The five CDPs in the planning area are the Helena Valley Northeast CDP, Helena Valley Northwest CDP, Helena Valley Southeast CDP, Helena Valley West Central CDP and the Helena West Side CDP. These five CDPs cover 123 square miles, just over 31% of the planning area, but are home to 24,224 people or 82.8% of the HVPA population. Between 2000 and 2010, 90% of the growth that happened within the HVPA happened within these five CDP's (see Map 1).

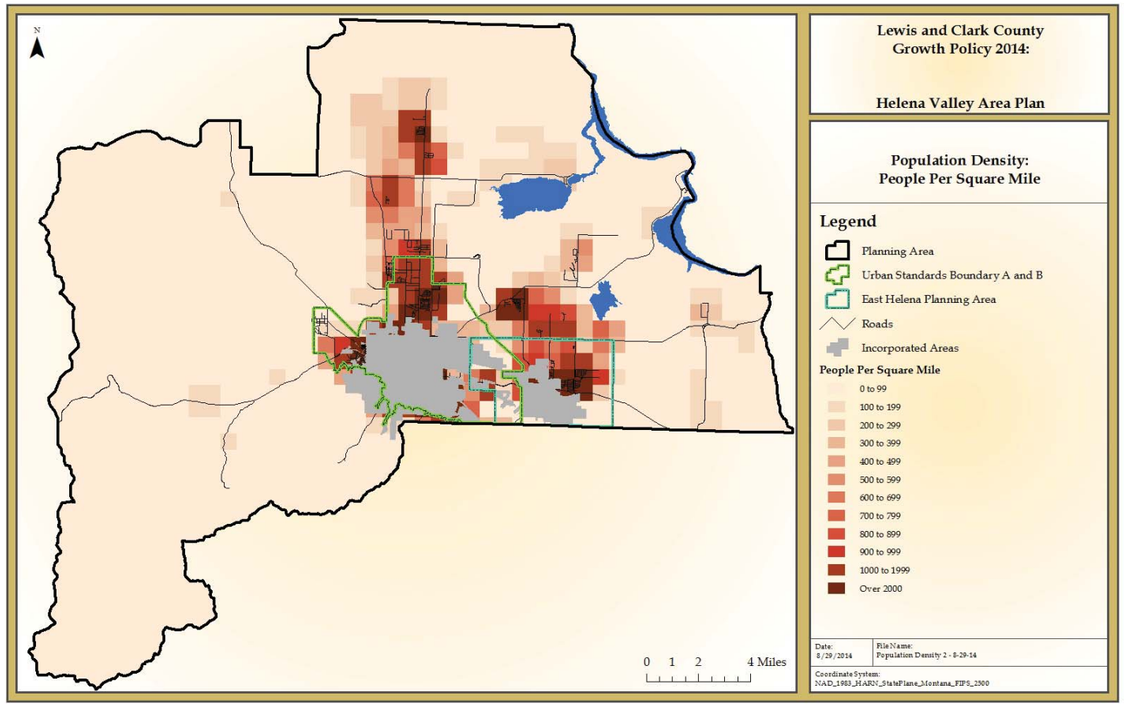


MAP 1— CENSUS DESIGNATED PLACES IN THE HELENA VALLEY PLANNING AREA WITH 2010 POPULATIONS.

GROWTH & DEVELOPMENT TRENDS

KEY POINT #2 — Population growth has been focused in small areas of the Valley that have changed from rural to suburban and urban densities. Those areas will continue to grow and urbanize.

The majority of the HVPA is very sparsely populated. Large portions of the planning area are publicly owned by the State of Montana or by the federal government. Most of the population is centered in the Helena Valley. Even within the Helena Valley, populations are clustered in three general areas. The Helena Valley Southeast CDP that surrounds the City of East Helena and had a 2010 population of 8,227. The Helena Valley West Central CDP north of Helena between I-15 and the Scratchgravel Hills had a 2010 population of 7883. And the Helena Valley Northwest CDP north of Lincoln Road and west of I-15 had a 2010 population of 3,422. These three CDPS are the most densely populated areas and the fastest growing. The land use in these areas is a mix of rural uses, suburban and even urban densities.



CH 1 FIGURE 2— Population in the Helena Valley is concentrated in three areas north of the two incorporated cities.

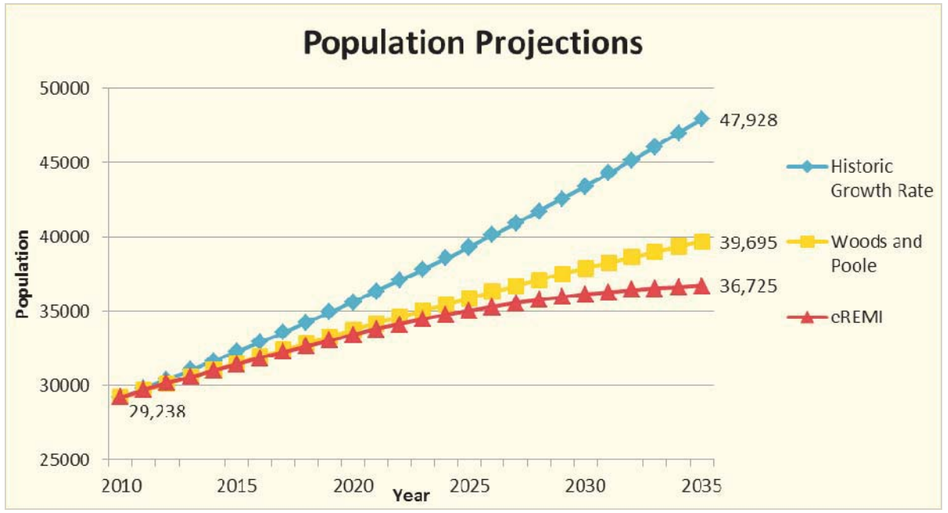
POPULATION PROJECTIONS

Projections are an estimate of future conditions based on past trends and assumptions. They can be used to estimate how much growth is going to occur, what that growth might look like, where it might occur, and when it might occur. What population projections tell us can be very useful in developing policy to best accommodate the future needs of the community. The projections in this document estimate populations through the year 2035. Because accuracy can decrease the further out the projection looks, the Helena Valley Area Plan considers a range of projections to give the best perspective on how much growth could occur through the planning period (2015-2035).

The three projections are a range of high, medium and low growth rates. The first projection is simply based on historic growth rates. The historic growth rate projection takes the average annual growth rate between 2000 and 2010 and extrapolates that out until the year 2035. The second projection was acquired by Lewis and Clark County from a firm called Woods and Poole Economics, Inc. The third model was acquired from the Montana Department of Commerce and developed by a firm called Regional Economic Models, Inc. The two acquired models use complex formulas of economic data, demographic data, and economic theory to project future populations.

The population projections show a range of new growth. According to the projections, the Helena Valley Planning area could see anywhere between 7,000 to more than 18,000 new residents in the next 20 years (Figure 3).

In order to accommodate the projected population growth that will occur, somewhere between



CH 1 FIGURE 3— Population projections for the next 20 years based on 3 different growth scenarios and population models.

2,800 and 7,300 new housing units will need to be built in the Helena Valley Planning Area over the next 20 years.

Based on the three projections, the Woods and Poole model represents the middle of the road. Both of the complex models acquired by Lewis and Clark County predict growth rates will slow. This is because the population nationally and in the State of Montana is aging. Therefore, continuation of the recent historic growth rate is unlikely and this model overestimates future growth under normal circumstances. The eREMI model predicts growth rates will almost come to a stop by the end of the planning period. Historic growth rates have never been that low, so this model likely under estimates growth. The most likely scenario therefore is the Woods and Poole Projection of about 10,000 people and just under 4000 new units of housing. If the projections of declining growth rates are accurate, more than half of this new growth will happen in the next decade.

GROWTH & DEVELOPMENT TRENDS

KEY POINT #3 — A conservative estimate of growth over the next two decades is that about 10,000 people will move into Helena Valley and build 4000 new housing units.

GROWTH & DEVELOPMENT TRENDS

KEY POINT #4 — The current Growth Policy for Helena Valley calls for the County to manage growth to establish Urban, Transitional, and Rural areas with development plans to guide orderly growth.

EXISTING PLANNING PARADIGM

In an effort to facilitate orderly growth, the 2004 Growth Policy identified three future land use areas to guide the type and intensity of development. These three future land use areas, called Urban Areas, Transitional Areas, and Rural Areas, were designated largely based on existing development patterns and proximity to municipal facilities.

The Urban Areas were designated according to where the City of Helena was most likely to annex land within five years. These areas were destined to be served by municipal services, and were designated to have urban densities.

The Transitional Areas were designated according to existing land use patterns and environmental considerations. These areas had already seen suburban type development, some of it with private community utilities like water and wastewater systems, but the utilities and road systems were incomplete. Public investment in infrastructure was not expected to happen in these areas in the short term. Detailed planning was to be completed in order to facilitate the orderly extension of roads and utilities over time.

All areas not designated Urban or Transitional Areas were designated Rural Areas. Development in the Rural Areas was to be self-sufficient, using individual wells and wastewater treatment systems or private community wastewater systems. Densities were to be dependent on the level of service provided by the development.

GROWTH & DEVELOPMENT TRENDS

KEY POINT #5 — Rather than managing growth according to the Growth Policy, the County has let the State DEQ determine development densities.

Much of the Helena Valley Planning Area is not zoned, at least in a traditional sense. But there has been zoning in a non-traditional sense. The Montana Department of Environmental Quality (DEQ), the entity that ensures wastewater systems and drinking wells meet adopted water quality and quantity rules, has required a standard lot size based on the types of wastewater and water supply systems. In most cases the DEQ required that a lot with an individual wastewater system and an individual well be at a minimum size of one acre.

So the de facto zoning density for homes with individual wells and septic systems has been a one acre minimum lot size. If a group of landowners had a community well or a community wastewater system, the de facto density established by the DEQ was half an acre. If a group of landowners had a community well and a community wastewater system, there was no minimum lot size. Lots that were 7,000 square feet or smaller resulted from this DEQ density determination. In October of 2014, the DEQ dropped its specific minimum lot sizes, but the State rules for wastewater disposal will continue to be the sole factor used to determine development density in the County.

CH 1 FIGURE 4 — Under State DEQ minimum lot size rules, high density subdivisions with lots as small as 7000 square feet were developed in rural areas that lack infrastructure and public services to support such urban development patterns.

SHORTCOMINGS OF CURRENT PLANNING PARADIGM

The DEQ rules for individual wastewater systems and drinking water wells maintain a safe distance from each other for water quality protection. This is a good idea, but it fails to take into consideration other critically important issues related to growth and development. There is no consideration of impacts to other resources such as the limitations of volunteer fire departments to serve new subdivisions. This approach to managing development densities does not address road capacity or road safety and long term maintenance. It doesn't adequately address the long term availability of groundwater in certain Helena Valley aquifers. It also does not effectively deal with flooding of local streams and neighborhoods. In short, the current planning approach does not adequately address the real constraints to development in our area.

The 2004 Lewis and Clark County Growth Policy established a planning paradigm in which infrastructure that was needed to accommodate new growth would follow the growth that was built. New development is only required to build minimum infrastructure that is directly related to the subdivision to get by for the short term. While this approach has an element of fairness, it does not address needed community-scale upgrades to infrastructure and public facilities as an area grows.

As hundreds of new subdivisions and thousands of housing units are built, area-wide water sources can be affected, local roads overburdened, and providing fire protection made far more difficult and expensive. Only looking at individual subdivisions one at a time fails to consider the larger implications of growth and development for the community at large and neighborhoods where development is occurring.

GROWTH & DEVELOPMENT TRENDS

KEY POINT #6 — The current Growth Policy is inadequate and ineffective to properly manage growth that is happening in Helena Valley.

While the 2004 Growth Policy successfully addressed some issues, it failed to implement needed solutions for water quantity, wastewater management, roads, fire protection, and flooding in the Helena Valley Planning Area. In parts of the planning area, ground water is being depleted due to overuse. Community wastewater facilities that are not properly maintained become sources of groundwater pollution. The lack of a plan for upgrading roads to serve new development has led to multi-million dollar lawsuits between developers and the County. Flooding is still an issue along certain streams. A system that gives necessary resources to rural fire districts was never developed, while wildland fire is an ever increasing threat to existing and new housing.

In the next 20 years, we are looking at an additional 10,000 people moving into the planning area building up to 4000 new housing units. The time to plan for those new residents is now. The chapters in this document will look at the most pertinent issues facing the Helena Valley Planning Area, and provide options for going forward.

WATER AVAILABILITY

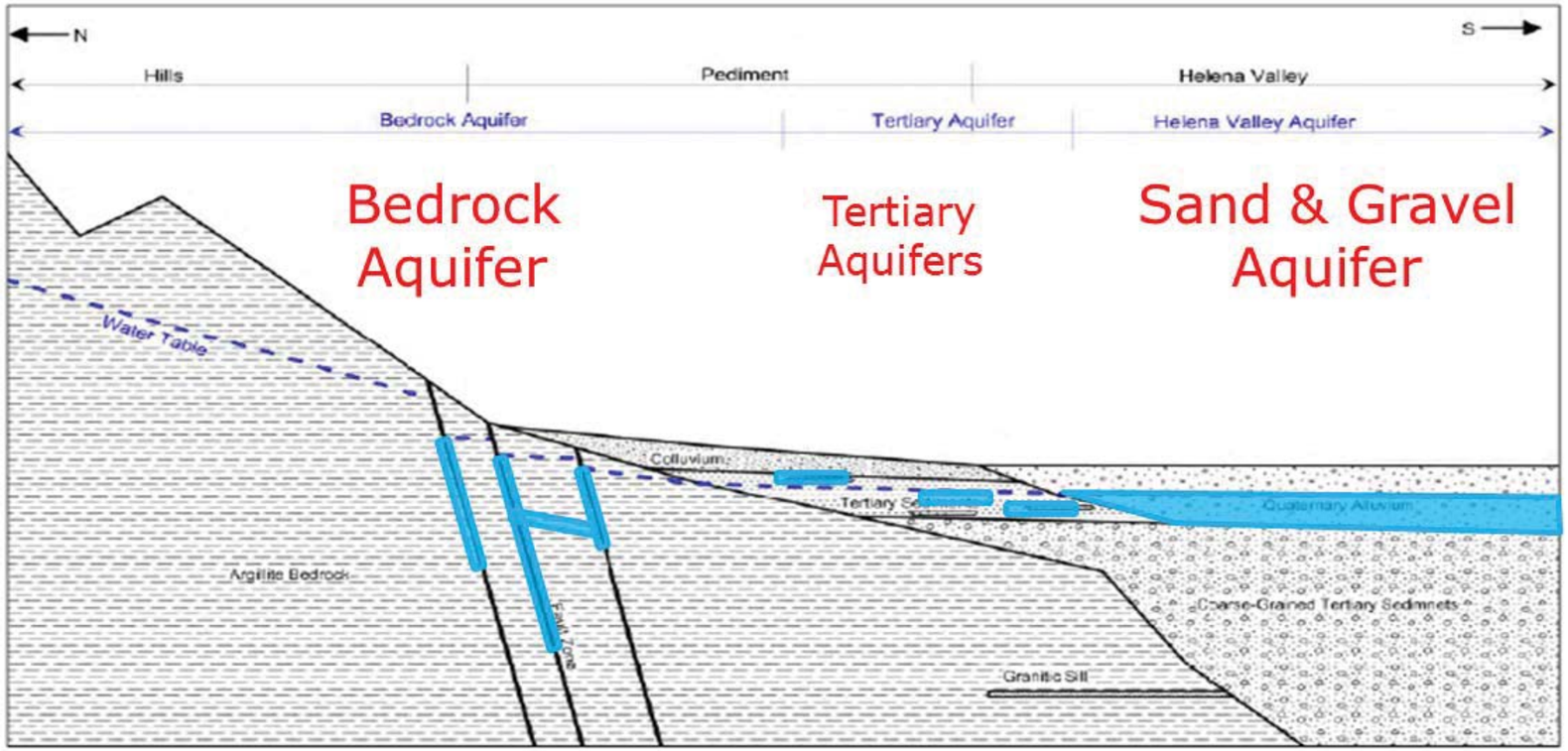
KEY POINT #1 — There are parts of the Helena Valley Planning Area where there is simply not enough water in the aquifers to sustain the level of development that has been occurring.

Water is an essential part of our lives. We need it for cooking, cleaning, drinking, industry and agriculture. Almost everyone who lives within the Helena Valley Planning Area outside of the City of Helena gets water from underground aquifers. When a new home or business is built, a well is drilled into the water table and water is pumped to the surface for use. In certain parts of the valley, when too many wells are drilled, the subsurface water level can drop and existing wells can go dry. In the planning area, there are three different kinds of aquifers, with very different attributes and susceptibility to draw downs from over pumping. The density of development in various portions of Helena Valley must reflect groundwater conditions and limitations.

THREE AQUIFER SYSTEMS

An aquifer consists of underground water found in cracks and porous holes in bedrock, or in fine silts, sand and gravels. The water level can be very close the surface (called shallow groundwater), or it can be many hundreds of feet down below the ground surface. Aquifers can be very prolific, meaning there is lots of water and they recharge quickly, or they can be unproductive, recharging very slowly or not at all. The planning area is primarily located over three interrelated, but also very distinct aquifers; Helena Valley alluvial aquifer, tertiary aquifers, and the bedrock aquifers. Although these three aquifer systems have general patterns following the topography of the Helena Valley area and tend to be hydrologically interconnected, there is high variability and extreme complexity between and within the aquifer systems. The exact composition, characteristics, and dynamics of the aquifers are very site-specific and cannot be determined without extensive and expensive groundwater studies involving well drilling, pumping tests, and running computer models. Figure 1 shows one particular configuration in an area at the north end of the Valley.

VALLEY ALLUVIAL AQUIFER — The first and most prolific aquifer type is the Helena Valley alluvial aquifer. Found at the bottom of the valley floor, the Helena Valley aquifer is located in unconsolidated sand and gravel. The water table can be shallow, in some places less than five feet from the surface. This aquifer is recharged by groundwater seeping in from the aquifers at higher elevations, from stream flows, from irrigation, and to a great extent by leakage from the Helena Valley Irrigation District Canal. Because of its high recharge rates, compared to the other two aquifer systems, water in the Helena Valley Aquifer is easy to find and the flows are the most reliable.



CH 2 FIGURE 1— Three different aquifer systems are present in Helena Valley area. Each of these underground water systems present different opportunities and challenges for getting adequate water supplies for current construction and for long-term use. This cross section shows the geological formations in the North Hills, benches, and Valley floor. Other configurations occur as you move around the periphery of the Valley as illustrated in Figure 2 on the next page.

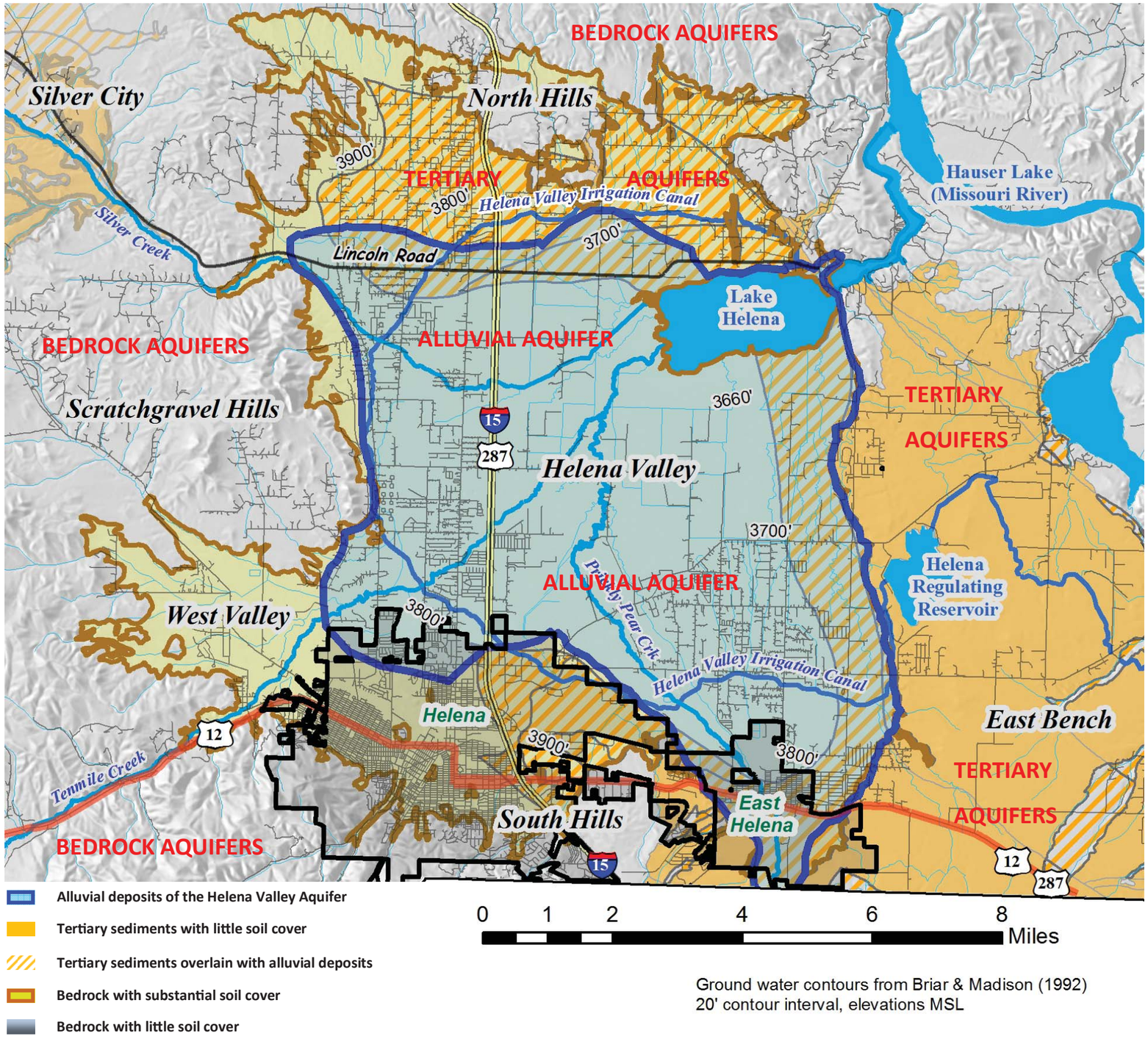
TERTIARY AQUIFERS — Moving to areas around and just above the Valley floor are geological formations called pediments, gentle slopes where the bedrock is overlain by sediments sometimes hundreds of feet deep. These sediments are where tertiary aquifers are found. Groundwater in tertiary aquifers is located in fine sands and gravels, but unlike the Valley alluvial aquifer, water in tertiary aquifers is not equally distributed. Clay layers, which do not hold water like fine sands and gravels, are found in pediment deposits, creating pockets of water that are the tertiary aquifers. Because of the clay layers, tertiary aquifers are characterized by "lenses" of water, kind of like ponds underground, as opposed to one large lake. In some areas the water is plentiful, in others it is limited, and there is no cost-effective way to determine long-term water availability in the tertiary aquifers of Helena Valley.

Perhaps the most important characteristic of a tertiary aquifer is how it is recharged. Recharge of the aquifer comes from bedrock aquifers at higher elevations, from precipitation seeping down through the ground, and from creeks flowing down from the hills. However, because much of the tertiary aquifer is at lower elevations, the rate of precipitation can be less than the rate of evapotranspiration, meaning much of the water that falls as rain evaporates before it enters the aquifer. Because the rate of recharge in tertiary aquifers can be very low, the amount of water entering the aquifer can be exceeded by water being withdrawn by wells.[1] Tertiary aquifers are most susceptible to well drawdowns when they are not hydrologically connected to bedrock aquifers and/or do not receive recharge from streams in the Valley area.

BEDROCK AQUIFERS — The foothills that surround the Helena Valley sit above bedrock aquifers. Groundwater in a bedrock aquifer is found in cracks of fractured bedrock (See Figure 1). If a water-bearing crack or fault crosses the ground surface, water can emerge as a spring. Wells are usually drilled down into bedrock until a crack or fault is found to provide a source of well water, which can require drilling down hundreds of feet. Water availability in a bedrock aquifer is hit and miss. One well might have plenty of water; the next well down the road might barely produce any water. Bedrock aquifers are primarily recharged by precipitation. Studies show that the bedrock aquifers around Helena Valley are susceptible to over use and depletion. [2]

[1] Bobst, A.L., Waren, K.B., Ahern, J.A., Swierc, J.E., and Madison, J.D., 2012, Hydrogeologic investigation of the North Hills study area, Lewis and Clark County, Montana, Technical Report.

[2] Bobst, A.L., Waren, K.B., Butler, J.A., Swierc, J.E., and Madison, J.D., 2014, Hydrogeologic investigation of the Scratchgravel Hills study area, Lewis and Clark County, Montana, Technical Report.



CH 2 FIGURE 2— General characterization of the geology of the Helena Valley area. Due to recharge limitations, the only area with a predictable and reliable source of groundwater to serve higher density future growth is the Helena Valley alluvial aquifer.

CIRCUMSTANCES LEADING TO OVERUSE

Groundwater in the bedrock and tertiary aquifers is spotty. Recharge is primarily fueled by precipitation. At lower elevations, evapotranspiration (evaporation and also plants using water) outpaces the amount of precipitation we receive. As a result, these aquifers are susceptible to overuse. Withdrawing water from an aquifer faster than it can be naturally recharged causes the water table to drop, which can result in wells going dry. An adequate, clean, and reliable water supply is critical to the health, safety and welfare of the residents of Lewis and Clark County and is necessary for continued growth.

Development patterns over the course of the past four decades have reached further and further out from our city centers. In the Helena Valley Planning Area denser development has started to occur over the bedrock and tertiary aquifers. As more wells are drilled into the bedrock and tertiary aquifers, we are finding there are parts of the Planning Area where there is simply not enough water to support some types development.

There are two situations in which water tables in the Helena Valley Planning Area are shown to have dropped. The first is due to the cumulative impacts of overuse. As growth has occurred and more and more wells have been drilled, water has been withdrawn faster than the aquifer system can recharge, causing the water table to drop. The second situation occurs where development has been built in a location where the aquifer recharges very slowly or not at all. In those locations, as soon as the houses have been built, wells drilled, and water withdrawn, the water table has started to drop.

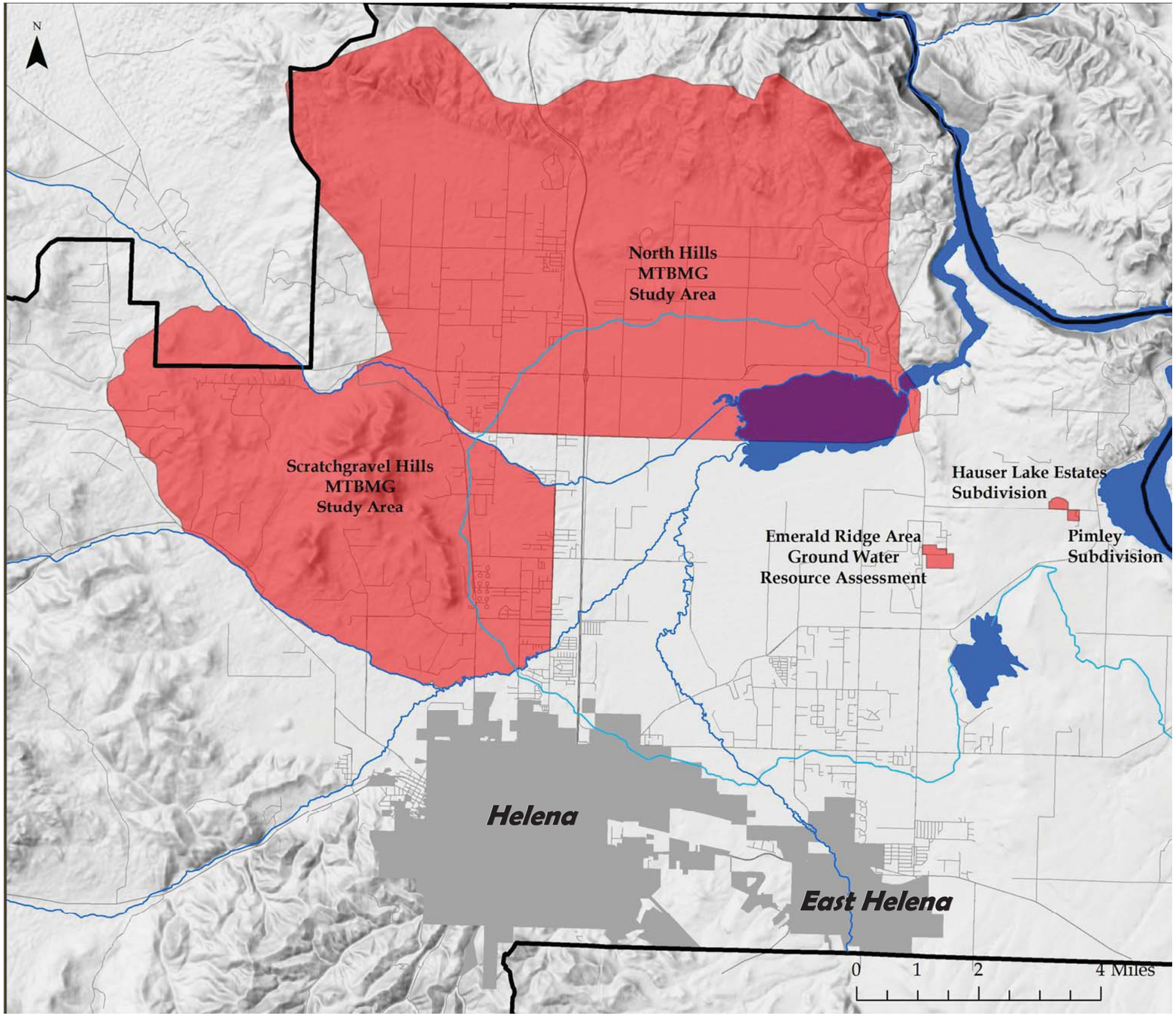
WATER AVAILABILITY

KEY POINT #2 — The system in place for review of new subdivisions is failing to ensure the residents of Lewis and Clark County have access to a reliable source of water.

PROBLEM 1 — CUMULATIVE IMPACTS OF OVERUSE OF AQUIFERS

NORTH VALLEY — The most prominent and extensively studied example of the cumulative impacts of overuse on an aquifer in the Helena Valley Planning Area is in "the North Hills." Much of the North Hills is developed at fairly low densities, such as one home to 10 or 20 acres. But the area north of Valleyview Road on Montana Avenue has seen hundreds of new homes built with lot sizes of 7,000 to 20,000 square feet. The entire area was the subject of a 2012 study by the Montana Bureau of Mines and Geology Ground Water Investigation Program. The study concluded that in the area of relatively high density development north of Valleyview Road, the impact of cumulative development over time has resulted in the drawdown of the water level which, even at current pumping rates, is projected to continue. [3]

[3] Bobst, A.L., Waren, K.B., Ahern, J.A., Swierc, J.E., and Madison, J.D., 2012, Hydrogeologic investigation of the North Hills study area, Lewis and Clark County, Montana, Technical Report.



CH 2 FIGURE 3— Locations and extents of groundwater studies and subdivisions with documented groundwater supply problems.

In other areas of the North Hills the depth to groundwater has been unaffected by development, which has occurred at mostly lower densities. In fact, as of this writing, most of the wells in the North Hills have not been shown to have issues with water availability. However, the study shows that the high density development occurring north of Valleyview Road is having an impact on the water table:

"Reduced groundwater levels were shown in this investigation in the bedrock and tertiary aquifers...due to groundwater withdrawals for housing developments. Existing development is anticipated to result in 23 ft. of drawdown."

CH 2 FIGURE 4— One of several high density subdivisions in the North Hills that uses community wells pumping from tertiary aquifers.

Based on 2009 pumping rates, the cumulative impacts of water use have caused the water table to drop by about 20 feet. This drawdown resulted in 4% of the wells in the area going dry. Models indicate that even if no new development of the aquifer occurs, the water level will continue to drop an additional 3 feet before stabilizing. This will result in an additional 20 wells going dry or 18% of the wells in the affected area.

The study also models what will happen if development continues at the rate and density it had between 2005 and 2009. According to the study:

"If development continues from 2009-2014 in the same way that it did from *2005-2009 it is estimated that 32 percent of the wells in Pumping Center A will become unusable. Drawdown of 45 ft. would cause 50 percent of the wells to become unusable."*

Data for what actually occurred through 2014 is not yet available and the recession likely slowed development to some degree and prevented the levels of groundwater withdrawals anticipated by hydrologists. However, the modeling is clear: higher density development in this area could continue to reduce groundwater levels and affect numerous wells.

WATER AVAILABILITY

KEY POINT #3 — Pumping of groundwater by high density subdivisions in the North Valley has caused neighboring wells to go dry.

WEST VALLEY — A similar study by the Montana Bureau of Mines and Geology Ground Water Investigation Program was completed in the Scratchgravel Hills. According to the 2013 report, the aquifers in the Scratchgravel Hills are comprised mostly of bedrock aquifers. The Scratchgravel Hills are not nearly as developed as the North Hills. The density is roughly one dwelling unit per ten acres, and so far they have not experienced dropping water tables due to the cumulative impacts of use. But modeling of the aquifers shows they are also susceptible to overuse. [4]

The aquifers below the Scratchgravel Hills are similar to the aquifers in the North Hills in a number of ways. The primary source of recharge is precipitation and at this time water levels in the aquifers appear stable. One major difference is the Scratchgravel Hills have not been developed to the densities of the area north of Valleyview Road on Montana Avenue in the North Hills. It is likely that because of the low density of development that has occurred, the water levels in the Scratchgravel Hills have not been affected by use so far.

The study conducted modeling of different development scenarios on roughly 330 undeveloped acres in the Scratchgravel Hills close to Helena. The scenarios looked at how the aquifer would react to different densities and groundwater withdrawals. If the area was developed to a density of one home to ten acres (33 homes, 33 wells) the water table would drop a few feet and stabilize. If the area was developed to a density of approximately one home to 1.2 acres with individual wells (267 homes, 267 wells), the water table would drop 52 feet within 20 years, and would not stabilize. The study concludes:

"Groundwater modeling indicates that if bedrock aquifers were used to supply water to high density subdivisions, noticeable groundwater-level declines would likely occur."

WATER AVAILABILITY

KEY POINT #4 — Modeling has indicated that groundwater levels would also be dropping in some parts of the West Valley if not for the low density of development (10-acre lots) happening there.

PROBLEM 2 — AQUIFERS WITH SLOW RATES OF RECHARGE

EAST VALLEY — The water table in the bedrock and tertiary aquifers is not uniform; there are areas where recharge of the groundwater is slower than others. Studies show an occasional individual well has hit a pocket of water that doesn't recharge quickly, causing the water table to drop on a local scale. But what happens when an entire development hits one of these pockets? The story of the Emerald Ridge Subdivision off Lake Helena Drive gives us an answer.

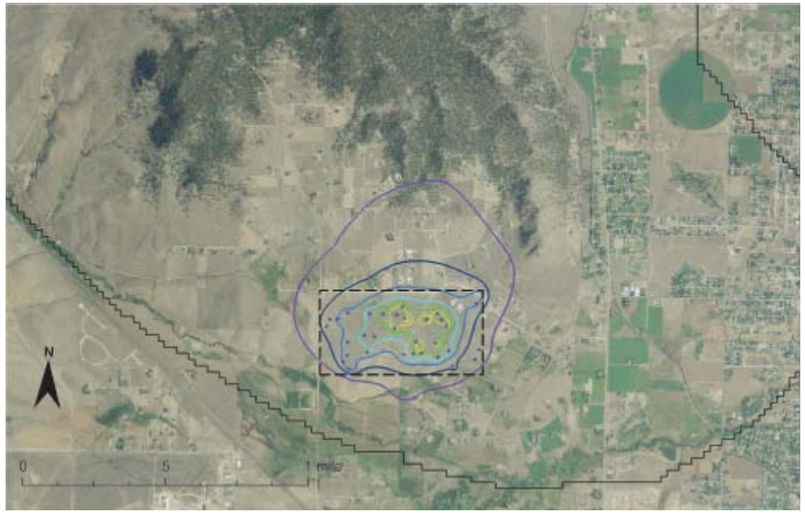
CH 2 FIGURE 6— Emerald Ridge Subdivision where development of 50 homes on 1-acre lots has dropped the water table up to 10 feet per year due to lack of aquifer recharge.

Emerald Ridge Subdivision is a neighborhood approved for construction in 2004. The subdivision, located on the east side of Lake Helena Drive was planned in a series of phases. The first phase of 67 lots was platted, lots sold and homes built, but soon after construction, the new wells started to go dry. Emerald Ridge Subdivision was built over a tertiary aquifer and over one of those spots were the aquifer doesn't recharge well, if at all. At the time of approval, wells were drilled with the expectation that there would be seasonal fluctuations in groundwater levels.

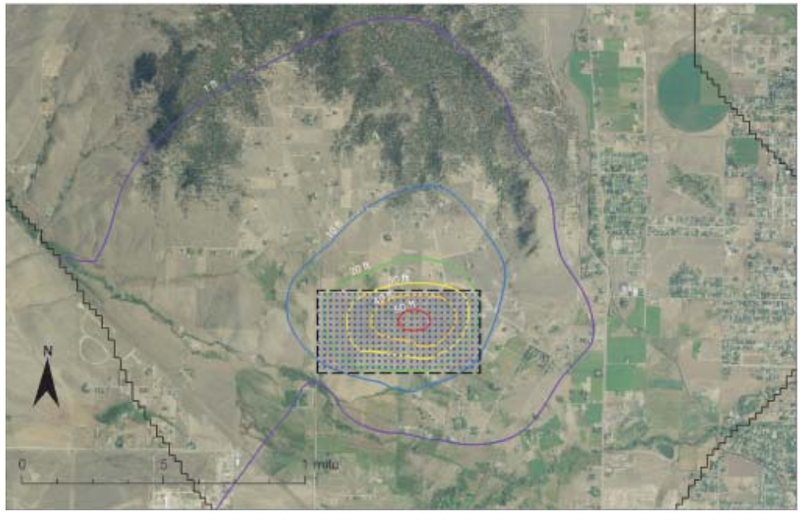
A 2014 study by the Lewis and Clark Water Quality Protection District looked into the issues at Emerald Ridge. The study points out that the application for MDEQ for subdivision approval did consider how the aquifer recharged: [5]

"The conclusion assumed that the wells would always have more than 200 feet of available drawdown, and that annual aquifer recharge would occur."

It turns out annual recharge is not occurring fast enough and the aquifer depth assumption was wrong, but there was no way for anyone to know this based on the studies required at the time. The new homeowners, however, found out pretty quickly. So far the water table has dropped between 100 and 150 feet, and appears to be continuing to drop at a rate of about 10 feet per year.



CH 2 FIGURE 5A — Hydrological modeling of a low density Scratchgravel Hills subdivision (10-acre lots) showing limited groundwater table reductions (7 ft.) that stabilized over time. Aquifer pumping effects were predicted to extend less than a mile (purple line).



CH 2 FIGURE 5B — Hydrological modeling of a high density Scratchgravel Hills subdivision (1-acre lots) showing significant groundwater table reductions (52 ft.) that did not stabilize over time. Aquifer pumping effects were predicted to extend 2 miles (purple line).

[4] Bobst, A.L., Waren, K.B., Butler, J.A., Swierc, J.E., and Madison, J.D., 2014, Hydrogeologic investigation of the Scratchgravel Hills study area, Lewis and Clark County, Montana, Technical Report.

[5] Swierc, J.E., 2014, Emerald Ridge Ground Water Resource Assessment, Lewis and Clark Water Quality Protection District.

Wells have been abandoned and replacement wells have been drilled. In some cases, the replacement wells have also been abandoned and a third well has been drilled. Some replacement wells had to be drilled to depths of over 700 feet at significant cost to the landowner. It is not known if the water table will stabilize or if the wells are literally mining the aquifer dry. In this specific case, according to the Lewis and Clark Water Quality Protection District:

"Withdrawal of ground water from this aquifer represents a non-sustainable source which is unlikely to continue to provide sufficient yields for even domestic wells for the long-term future."

Two other subdivisions in the East Valley (Pimley & Lake Hauser Estates) have experienced similar water problems. As new subdivisions are proposed in areas with tertiary aquifers, there is no way to know for sure that the aquifers serving the subdivisions will have adequate water for the long term.

WATER AVAILABILITY

KEY POINT #5 — Some new subdivisions in the East Valley have been draining their aquifers and will soon need to truck in water or pipe it from other sources.

THE HIGH COST OF DROPPING WATER TABLES

There are two circumstances which lead to the over use of aquifers, causing water tables to drop. In the North Hills, the cumulative impact of high density development has caused the water table to drop. The continuation of these development patterns could result in 50% of the wells in the affected area going dry. The second circumstance is represented by the Emerald Ridge Subdivision, where the draw down wasn't from cumulative impacts, but from just one subdivision pumping from a local aquifer that recharges very slowly. Hydrologists predict that at the rate the water table is dropping below Emerald Ridge, 100% of the wells may eventually go dry. So what are we to do about it?

A 2006 engineering study[6] looked into the costs of two alternatives for installing an area-wide public water system. The first option was to acquire water rights to drill two or more public water system wells in the vicinity of the Lincoln Road I-15 Interchange that would draw water from the Valley aquifer and pump it up to the high density developments in the North Hills. The cost to build a public water system served by those wells in 2006 dollars was estimated at $8 million to $11 million.

The second option was to extend a water main from the City of Helena to serve development in the North Hills. The cost to extend the City of Helena's water system was estimated at $16 million to $20 million. So one possible policy response to the issue of groundwater depletions in areas served by bedrock and tertiary aquifers to allow high density development and assure adequate water for domestic needs would be major public investment in water systems. This would address the long-term water availability issue, but there will need to be a clear plan for how the millions of dollars of investment will be raised.

One challenge to providing an area-wide public water system is that there are thousands of homes that have also invested in one or more private, individual wells that, unlike the homes in Emerald Ridge, are currently pumping adequate water for their household needs. Are those homeowners likely to support construction of a public water system and paying for connection to it and subsequent water bills?

FAILURES OF THE CURRENT PLANNING PROGRAMS

Why is this happening? What are the reasons individual homeowners and whole neighborhoods are at risk of depleting the water table? The primary reasons are geology and climate, and we can't control those factors. But within the realm we can control, the largest contributing factor is the current programs that are used to review and approve new subdivisions. Someone proposing a new development must complete certain studies, acquire permits and get approvals. There are many rules and steps that are taken to ensure the presence of water and that the water is safe to drink. But these rules do not ensure the longevity of the aquifers as water supplies over time. The system in place has sometimes failed to ensure that the residents of Lewis and Clark County have access to a reliable source of water.

Groundwater is a public resource owned and managed by the State of Montana. To use groundwater, authorization from the state Department of Natural Resources Conservation (DNRC) is required. The state DNRC has given an exemption from any permit requirements to low volume wells such as those that serve single family homes. For larger users, such as a community well for a subdivision, water rights must be obtained and the well must be issued a permit. This has provided incentive for developers to propose lots with individual wells instead of community well systems and thereby avoid purchasing water rights or going through the DNRC approval process.

On October 17, 2014 Montana's First Judicial Court issued an Order on Petition for Judicial Review in *Clark Fork Coalition, et al v. Tubbs et al* that reestablished a 1987 definition of "combined appropriation" that will significantly affect the ability of developers to do large subdivisions using individual wells that were previously exempt from water rights requirements. On December 9, 2014 the DNRC issued a "Guidance on Combined Appropriation" indicating that the department will consider any subdivision without preliminary subdivision plat approval and/or DEQ permits as of November 21, 2014 to need water rights permits for individual wells per a four-part test. It is unclear how much effect these decisions will have on subdivisions and whether they will be further challenged in court or taken up by the State Legislature. Some of the large, urban-density subdivisions that have affected groundwater levels did, in fact, obtain water rights, so the new state of affairs on exempt wells does not eliminate the concerns for water availability.

The Montana Department of Environmental Quality (DEQ) permitting process is also focused on the individual impacts of a specific home or subdivision proposal, as opposed to looking at the cumulative impacts of many homes and development projects over time. While DEQ rules require review of a proposed subdivision to ensure there is an adequate water supply, it is an imperfect process. With the Emerald Ridge Subdivision, the DEQ application contained information that assumed the aquifer would recharge based on limited testing, but the applicants were not required to prove it to an adequate degree as has been demonstrated. To prove the aquifer can recharge over time would be a lengthy and very expensive process not currently required by law.

WATER AVAILABILITY

KEY POINT #6 — There is a clear need to consider additional growth management policies to address the shortcomings in the current planning programs.

By state law, Lewis and Clark County must review the impacts of every proposed subdivision, including reviewing the adequacy of the water supply. But like the DEQ rules, County subdivision review is focused on individual impacts and not on the cumulative impacts of numerous developments over time. And the County relies heavily on reviews by DNRC and DEQ in making its determination that a proposed subdivision application includes "substantial and credible evidence" of adequate water availability.

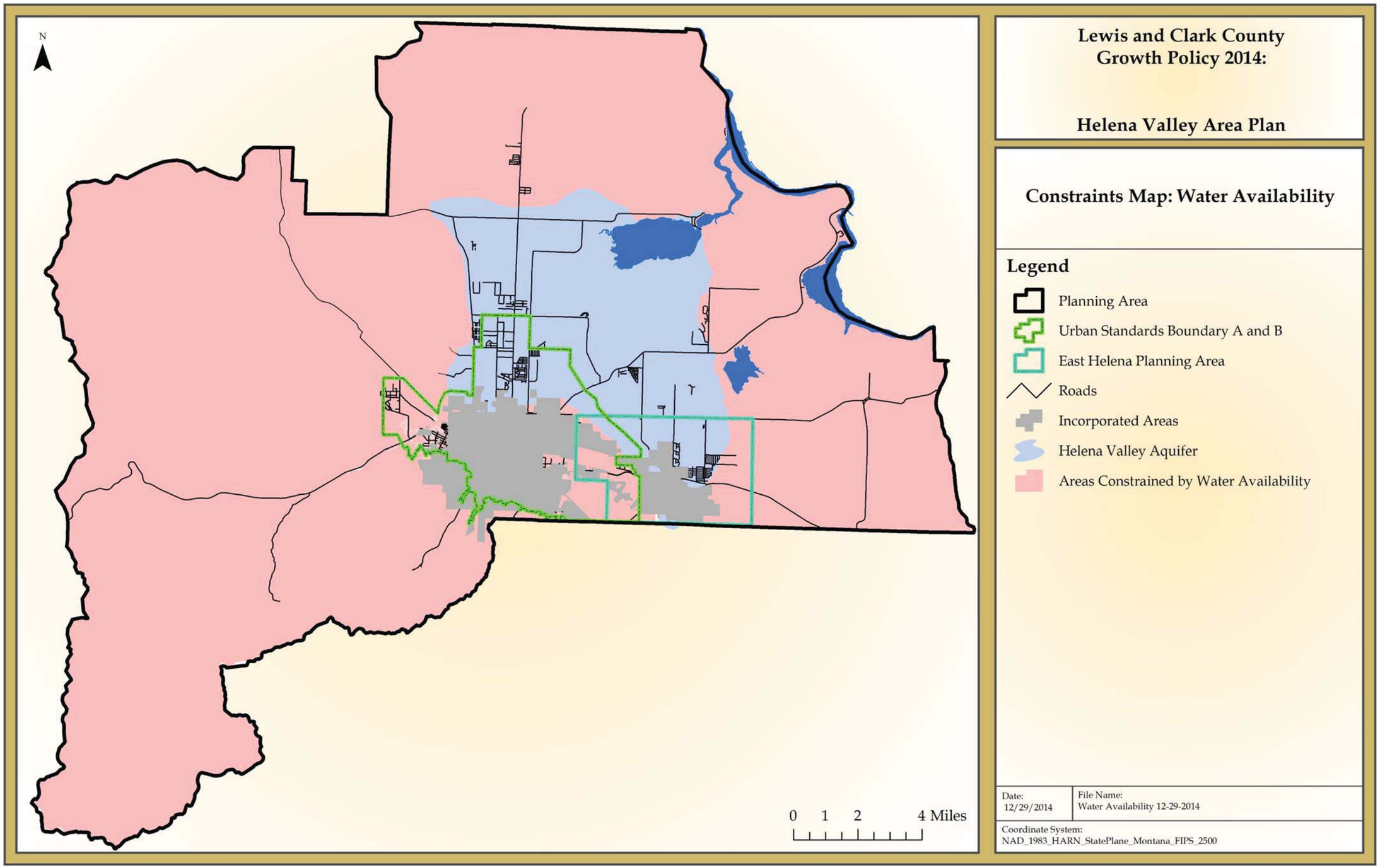
Subdivision review under the current rules has been shown to not always be an effective mechanism for ensuring adequate water supply over the long term in places like the North Hills, or even over the short term in cases like Emerald Ridge.

SUMMARY

There are three connected, yet distinct aquifer systems in the Helena Valley Planning Area. Two of them, the bedrock and tertiary aquifers, have limited and spotty amounts of water that in some locations cannot adequately recharge to the degree necessary to support higher densities of development. There are locations where the use of the aquifer is outpacing the rate of recharge. Because of this, the ability of the bedrock aquifers and the tertiary aquifers to accommodate high density development is clearly constrained.

The current rules in place have been shown to not adequately address the limitations of the bedrock and tertiary aquifers. The aquifers are susceptible to cumulative impacts of use, as well as areas of limited recharge, which can lead to subdivisions significantly dropping the water table and causing wells to go dry. There is a clear need to consider additional growth management policies to address the shortcomings in current planning programs to ensure an adequate and reliable source of drinking water to residents within the Helena Valley Planning Area.

[6] Anderson-Montgomery Consulting Engineers Inc., WGM Group, Inc., Boyer Consulting, 2005, North Helena Valley Infrastructure Study, Lewis and Clark County.



MAP 2 — PORTIONS OF THE HELENA VALLEY PLANNING AREA THAT ARE CONSTRAINED DUE TO LIMITED OR UNKNOWN WATER AVAILABILITY

WASTEWATER MANAGEMENT

KEY POINT #1 — We eventually drink what we put down the drain. Thousands of existing homes in Helena Valley and those that will be added dump their treated wastewater into the same aquifers they get drinking water from.

Lewis and Clark County has long recognized the connection between wastewater disposal systems and groundwater quality. In 1992, the Lewis and Clark County Water Quality Protection District formed. Its mission is "to preserve, protect and improve water quality within District boundaries." Since 1993, the District has been sampling and testing groundwater throughout the Helena Valley to understand groundwater quality conditions and trends with an emphasis on identifying nutrient levels in ground water. The nutrient data help characterize the impacts of non-point pollutant sources, primarily agriculture and septic systems, to ground water quality.

Population projections estimate an additional 10,000 people will be moving into the Helena Valley Planning Area over the course of the next 20 years. These new residents will require approximately 4,000 additional housing units. If recent surveys are any indication, the majority of these housing units will treat wastewater with individual septic systems, with the rest using some sort of a community wastewater system serving multiple homes.

Wastewater treatment systems in common use in the planning area are ones that discharge treated effluent to the ground. If they are not properly operated and maintained, they may become a source of groundwater contamination. This is a concern because the vast majority of people in the Helena Valley Planning Area get their drinking water from groundwater, eventually drinking what is put down the drain. As population growth continues and additional waste is disposed of into groundwater, it is important to include a strong operation and maintenance framework in the Growth Policy to ensure wastewater is properly treated prior to discharge into our drinking water source.

CURRENT PLANNING PARADIGM

The existing planning paradigm for wastewater treatment in the Helena Valley Planning Area is based on a plan adopted in the late 1990s. That plan discourages the extension of municipally operated, public sewer systems (Helena & East Helena) into the valley, primarily due to the costs of such systems, while it encourages the use of privately operated "public" wastewater systems (serving 15 or more homes & 25 individuals) and individual onsite septic systems.

[1] Damschen and Associates, Inc., 1998, Helena Area Wastewater Treatment Facility Plan. Lewis and Clark County

HELENA AREA WASTEWATER TREATMENT FACILITY PLAN - In 1998, Damshen & Associates, Inc. released a detailed study of wastewater treatment options in the Helena Valley for Lewis and Clark County. The study, called the *Helena Area Wastewater Treatment* (HAWT) *Facility Plan* , detailed six alternatives that ranged from taking no action to building a regional wastewater treatment system.[1] The preferred alternative recommended upgrading the existing City of Helena public sewer system to meet its existing and expansion needs and to repair the existing privately-owned "public" wastewater systems (primarily sewage lagoons) that were failing. New development in the Helena Valley was encouraged to connect to adjacent, upgraded private systems or to develop their own systems, rather than extending the municipal sewers. For the rest of Helena Valley, the HAWT Plan recommended the use of individual onsite septic systems at low housing densities. The plan was adopted by the County in August of 1998.

CH 3 FIGURE 1— One of the many private community wastewater systems installed in Helena Valley over the past decade.

2004 GROWTH POLICY - The 2004 Lewis and Clark County Growth Policy also recognized the connection between wastewater and groundwater quality. This plan recommended water quality monitoring and educational programs the Lewis and Clark County Water Quality Protection District administers today and the creation of an on-site wastewater treatment system maintenance program within the Environmental Division of the Health Department.

The 2004 Growth Policy also made recommendations for future land use areas called "Urban Areas" and "Transitional Areas." The Urban Areas were close to the City of Helena and the Growth Policy called for the County to actively plan for extensions of utilities into those areas and to facilitate those extensions, working with the City and developers. In order to cost effectively serve those areas with public utilities and City services, the Growth Policy anticipated that high density development would occur in the designated Urban Areas.

[2] Trihydro Corporation, 2008, Lewis and Clark County Helena Valley Groundwater Vulnerability Project, Final Project Report

Transitional Areas are places in the County with medium development densities and a mix of development types served by individual septic systems and also denser subdivisions with private multiple user wastewater systems. Within Transitional Areas, the 2004 Growth Policy recommended initiating additional planning efforts and developing infrastructure extension plans. The idea was to "fill in" the medium density areas with higher densities over time and eventually extend public utilities to accommodate the additional development. With the additional density and infrastructure, the hope was development served by smaller onsite treatment systems and private multi-user wastewater systems would hook into the larger public utility network in a cost effective manner.

The 2004 Growth Policy led to a proliferation of private multi-user wastewater systems with no real plan for future conversion to a public utility system (See Fig.1). And the reality is that as with individual wells, homeowners with functioning septic systems, either individual or multi-user systems, will resist public utility extensions that require them to reinvest in their plumbing system and start paying monthly sewer bills or see increases in those bills. In most cases, differences in sewer bills reflect the level of maintenance that is required and should be done on those systems, irrespective of whether they are maintained by a government entity or a private operator.

WASTEWATER MANAGEMENT

KEY POINT #2 — There are indications that population growth in the area has increased loading of wastewater to the aquifers, stressing the capacity of the natural system to mitigate water quality impacts.

LIMITATIONS OF WASTEWATER TREATMENT SYSTEMS

INDIVIDUAL SEPTIC SYSTEMS — Much of the Helena Valley is subject to shallow groundwater. In addition, the soils in the valley are not particularly effective at treating effluent coming out of septic systems.[2] In some areas, especially on the edges of the valley where coarse grain materials are present, elevated nutrient levels near or exceeding safe drinking water levels are found.[3] The Lewis and Clark Water Quality Protection District considers contamination of the aquifers from individual and community based wastewater systems a concern:

"Wastewater discharges to ground water impact local ground water quality from both onsite treatment systems (a/k/a septic systems) and community system treatment lagoons."

Individual and small shared wastewater treatment systems, when properly located, designed, installed, operated and maintained, are a safe and effective mechanism to treat wastewater of individual homes and small businesses. The

[3] Swierc, J.E., 2013, Ground water monitoring results and surface water – Ground Water Interaction, Helena Valley Montana. Lewis and Clark County.

1998 HAWT plan recognized that at lower development densities such as areas zoned for 5 and 10 acre lot sizes, these systems are the most cost-effective method to treat effluent if built to proper standards and receiving regular maintenance. However, if not built, operated, or maintained properly, these systems become a potential source of pollution.

Another issue with the large proliferation of smaller onsite systems is the process used to account for the incremental and cumulative impacts of systems being continually added to an area over time. The only review for cumulative impact is through the subdivision review conducted under the Sanitation in Subdivisions Act. A mathematical model is used to predict potential groundwater contamination that each new system may contribute. The system is specifically designed to limit the amount of nitrate and phosphorus pollution. Other types of contaminants are not regulated. This means as more and more onsite systems are built within a given area, the potential for certain types of pollution (e.g., bacteria, viruses, pharmaceuticals) increases. According to the Lewis and Clark Water Quality Protection District:

"Population growth in the area has increased loading of wastewater to the aquifer, stressing the capacity of the natural system to mitigate the magnitude of water quality impacts."

LARGER NON-MUNICIPAL SEWER SYSTEMS — Much work has gone into protecting water quality in the Helena Valley aquifer, but problems identified in the 1998 HAWT study still exist. The HAWT study put significant emphasis on the need to upgrade the large non-municipal wastewater systems outside of the incorporated cities. Of the seven lagoon systems studied, all but one have been upgraded, or are scheduled to be upgraded. But there are numerous other non-municipal wastewater systems that have not been upgraded and the status of their maintenance is unknown and they could be ticking time bombs.

If the use of non-municipal public systems is to be continued, implementation of an active oversight and management program should be a priority. As proper maintenance of these systems is ignored or deferred, problems compound and the risk of the system contaminating groundwater or surface water increases.

A clear example of the seriousness of improperly maintained community wastewater systems in Helena Valley can be found in the experience of homeowners in the Ten Mile Creek and Pleasant Valley Estates subdivisions. These two subdivisions consisting of several hundred homes are served by a lagoon community wastewater system built in the late 1970s. An investigation by the State Department of Environmental Quality determined that the lagoons were not properly constructed or treating millions of gallons of septic effluent being produced by the two subdivisions. The DEQ filed a lawsuit that eventually led to the formation of a sewer district and a $5.5 million plan to rebuild the private wastewater system. In addition to the environmental damage and health risks, homeowners in the subdivisions suffered financially both during the lawsuits that affected home sales and refinancing, and now in the need to pay for the multi-million dollar project. And the environmental damage done by that system went unnoticed for decades.

WASTEWATER MANAGEMENT

KEY POINT #3 — Aging individual septic systems & non-municipal wastewater systems and the proliferation of newer ones over drinking water supplies creates a need to provide active oversight and management of such systems.

CH 3 FIGURE 2— Massive failure of the Ten Mile Creek/Pleasant Valley Estates sewer lagoons led to lawsuits and a $5.5 million dollar system fix.

CH 3 FIGURE 3— Surfacing raw sewage in the Applegate Village subdivision brought to the attention of City-County Environmental Health staff by a neighbor's complaint.

Although the Ten Mile Creek-Pleasant Valley Estates problem is an extreme case of a community wastewater system meltdown, every large system requires significant investment of time, money, and expertise to ensure that they are properly installed and maintained for the long-term. In addition to normal operation and maintenance, such systems have a design life of about twenty years, and a plan for future replacement or rejuvenation of the systems should be formed and funded at their inception. Beyond the need for long-term maintenance that is currently not being addressed, the Lewis & Clark County Environmental Health Division has received multiple reports that on-going maintenance is not being done, and they have investigated malfunctions of the systems that went unreported and unaddressed by those responsible for them (Fig. 3).

LIMITATIONS TO EXPANDING MUNICIPAL SYSTEMS OR BUILDING NEW REGIONAL SYSTEMS

Because of such private system failures and a desire to accommodate new development in Helena Valley, there have been numerous studies looking at extending municipal sewer systems, such as the City of Helena's, or building new regional wastewater systems to serve large areas of the Valley. The extension or development of public utilities would address issues with existing individual and non-municipal systems, cumulative impacts, as well as effluent monitoring and system maintenance. In addition to addressing existing wastewater needs, the systems could accommodate additional projected growth.

But there are some inherent difficulties to building these larger regional systems or extending existing ones, most notably cost. The HAWT study examined these alternatives. Costs ranged from $37 million to $64 million in 1998 dollars. A 2006 study looked at the costs only a wastewater system to serve the North Valley area, and that system was estimated at $12.5 million to $16 million. [4]

Typically, significant portions of the costs are passed on to the system users or rate payers. For homes and businesses in the area with existing onsite systems or an existing non-municipal wastewater system, the costs for the new sewer connections would be on top of the costs for the development of their existing systems. Since the adoption of the 1998 HAWT plan, an estimated $30 million has been spent on the installation of individual septic systems and non-municipal wastewater systems in the Helena Valley, approaching what it would have cost to sewer the whole Valley with a regional sewer system. And unlike the potential for added development that could have been achieved with a regional system, the private systems installed over the last sixteen years will only serve the homes built during that time span.

SHARED RESPONSIBILITIES

In 2009 Lewis and Clark County entered into a Memorandum of Understanding (MOU) with the City of Helena to coordinate planning efforts in the area surrounding the City. Part of the MOU focused on the extension of public services out into the County in an area delineated by an Urban Standards Boundary. The idea was to coordinate the development of this area to better serve the citizens while protecting water quality. In 2011, the City of Helena adopted its own Growth Policy, which called for two Urban Standards Boundaries. One boundary identified where the City would extend services under the current planning programs. The second boundary would extend further from the City, and would be available if the County implemented the items agreed to in the MOU.

The MOU details the actions the City and County plan to carry out. The City agreed to increase the capacity of its treatment system, continue to accept biosolid waste (pumped from septic tanks) from onsite systems in the Helena Valley, annex areas where appropriate, and assist the County with long range planning and design standards for urban growth within the Urban Standards Boundary area. The County agreed to explore effective mechanisms to manage growth, define an urban growth boundary, create a septic system maintenance program, and establish design standards for urban growth.

Working with the City and implementing the provisions of the MOU would facilitate the extension of the City of Helena's municipal sewer system into the Urban Standards Boundary areas. The City's system operates under strict water quality standards and the operation and maintenance is regulated by federal and state agencies. Annexing areas around Helena and providing public sewer service could accommodate large amounts of growth while protecting groundwater.

WASTEWATER MANAGEMENT

KEY POINT #4 — Continuing the individual septic system maintenance program, expanding it to include non-municipal sewer systems, and extending Helena's municipal sewers are all keys to accommodating future growth while protecting groundwater supplies.

SUMMARY

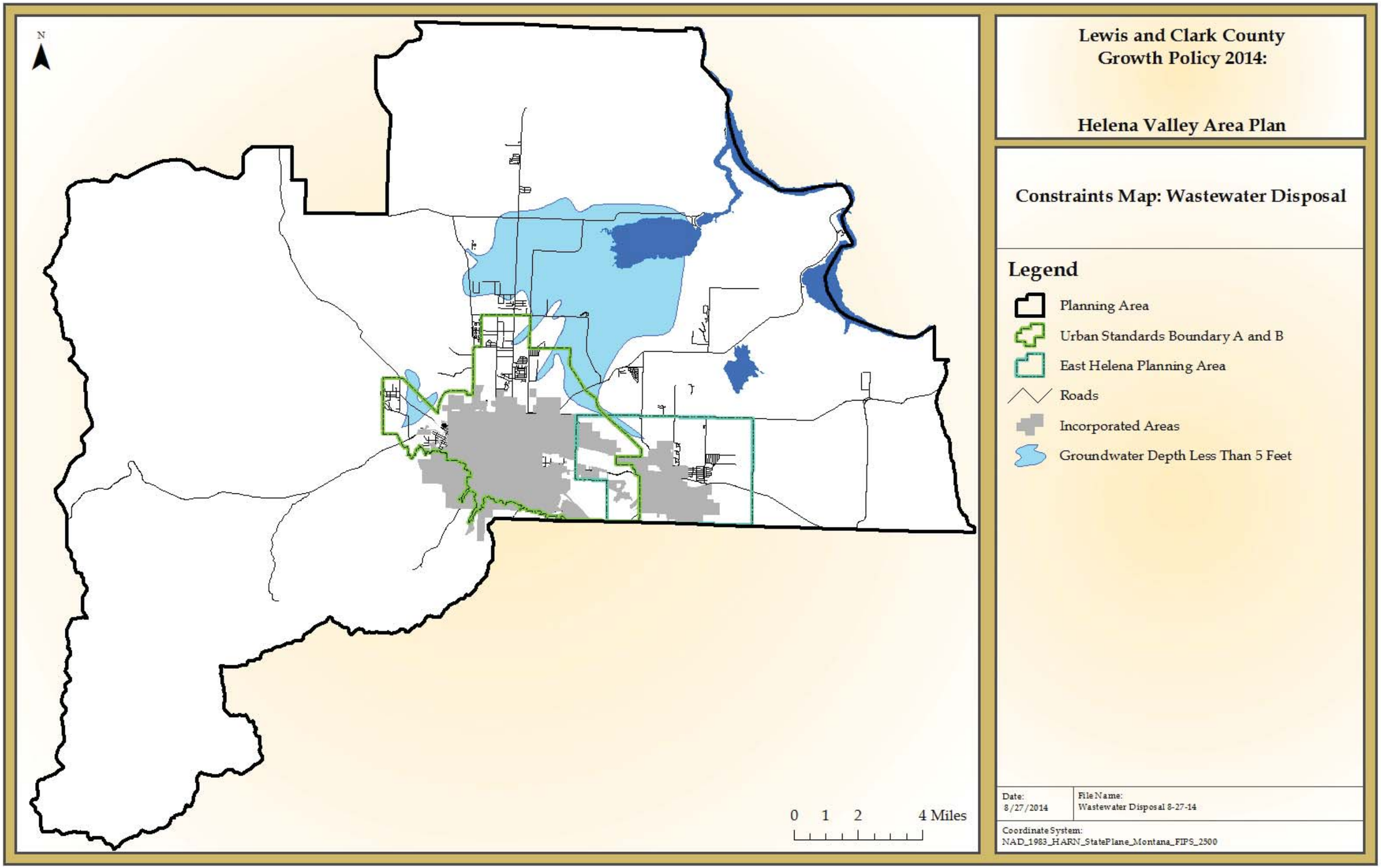
An additional 4,000 homes are projected to be built within the Helena Valley Planning Area in the next 20 years. The existing and projected population gets its drinking water from local underground aquifers. Good planning to accommodate the growth today will help protect water quality and human health tomorrow.

There are areas within the Helena Valley Planning Area where the groundwater is susceptible to contamination. These threats to groundwater come in part from the cumulative impacts of individual and shared onsite wastewater treatment systems and from larger non-municipal sewer systems. The planning programs of Lewis & Clark County must include effective ways to address the challenges we face with treating wastewater.

If past trends are any indication, the majority of the projected growth will treat wastewater with individual septic systems, and the rest will use non-municipal sewer systems. Expanding public sewers or building regional systems has many benefits, but is very costly and politically difficult, especially when the costs are expected to be paid in part by those who already have properly functioning wastewater treatment systems.

Under the current planning paradigm, the cumulative impacts of small onsite and non-municipal sewer systems pose significant risks to groundwater. If all provisions of the 2009 Memorandum of Understanding between Helena and Lewis & Clark County are implemented and the City extends the Urban Standards Boundary, at least a portion of the projected growth would likely be hooked into the municipal sewer system, relieving some pressure. Developing procedures that ensure the proper operation, maintenance, and funding for repairs of non-municipal sewer systems will alleviate many of the potential problems and threats to the groundwater drinking supplies. Finally, mechanisms should be developed that acknowledge the risks of cumulative impacts to groundwater from wastewater systems over shallow groundwater (see Map 3) and take steps to reduce those impacts.

[4] Anderson-Montgomery Consulting Engineers. Inc., WGM Group, Inc., Boyer Consulting, 2005, North Helena Valley Infrastructure Study, Lewis and Clark County



MAP 3— PORTIONS OF THE HELENA VALLEY PLANNING AREA THAT ARE CONSTRAINED DUE TO HIGH GROUNDWATER

ROADS

KEY POINT #1 — Much of the road network of the Helena Valley Planning Area was not designed to accommodate hundreds of new subdivisions with thousands of homes, and there are no resources to rebuild them.

Most of the roads in the Helena Valley Planning Area are built for low volumes of traffic. As growth occurs, these low volume roads must be upgraded to accommodate additional traffic. The cost of upgrading substandard roads to accommodate the amount of projected growth is daunting. A solution must be developed that allows growth to continue in a manner that is both cost effective to the taxpayer and profitable to the private investors of development.

COUNTY STRUGGLES

During the land development booms of the 1990s and 2000s, almost 12,000 people moved into the unincorporated parts of the County, with an estimated 9,000+ moving into the Helena Valley Planning Area alone. As development occurred, traffic on some County roads often exceeded the design capacity of the roadways, which were also in relatively poor condition due to insufficient County funding to improve and maintain them.

Development on gravel roads was of particular concern because they do not hold up well to heavy loads and high volumes of traffic without upgrades and regular maintenance. The level of maintenance required to keep the roads in good condition was outside of the County's financial capabilities due to several reasons, including taxpayers' reluctance to support continual increases in taxes.

In response to concerns for safety and road upgrade and maintenance costs, the County started requiring developers to upgrade substandard roads to County standards in order to accommodate the increased traffic generated by those subdivisions. This policy was successfully challenged in several court cases where judges determined that the County's requirements for developers to pay the full costs of upgrades to roads that other members of the public use was unconstitutional. Court decisions awarded millions of dollars in damages and ordered that a new system be established that only required subdividers to pay their development's proportional impacts on the road system.

Looking ahead to the next two decades, the growth rates that challenged the County in the past are predicted to continue. Through 2035, an additional 10,000 people are projected to move into the Helena Valley Planning Area and stimulate the construction of another 4000 units of housing. Just as it was 20 years ago, at expected funding levels the County will still not be capable of maintaining a high level of road maintenance across the Valley, let alone pay to upgrade roads to handle the ever increasing traffic volumes.

DEVELOPMENT CONSTRAINTS

CH 4 FIGURE 1— Poorly constructed and maintained local gravel road proposed to serve a recent subdivision.

Gravel Roads

Because gravel roads typically have low traffic thresholds and generate dust that affects air quality, gravel is not an appropriate surface to accommodate high traffic volumes and significant growth. Once a road serves 400 vehicle trips on an average weekday (just over 40 residences), County standards call for roads to be paved. The need for paving is driven by the number of vehicle trips per se, but studies have documented that once a certain number of residences are established, the percentage of heavy truck traffic on the road increases, which disproportionately increases wear and tear and can cause damage to the road base that is not designed to support heavy loads.

With over 379 miles of gravel roads in the Helena Valley Planning Area (not including US Forest Services Roads), in order to accommodate a projected 4000 homes over the next 20 years, many currently gravel roads will have to be upgraded and will require increased levels of maintenance.

While maintaining both gravel and paved roads is quite expensive, paved roads typically accommodate more vehicles per day than gravel roads, and can therefore accommodate more growth. Because of this and other factors described in this chapter, gravel roads are generally considered to be a constraint to significant levels of development in the planning area.

Paved Roads

Gravel roads present a clear limitation to high levels of development, but the high costs to improve and maintain paved roads that are in very poor to failing conditions present the same issue — the money isn't there for upgrading and maintaining substandard paved roads to accommodate additional traffic. Like gravel roads, paved roads in very poor to failing condition also represent a constraint to development.

To evaluate the condition of its paved roads, Lewis and Clark County uses the PASER Manual for Paved Roads published by the Transportation Information Center at the University of Wisconsin. Using this manual as a guide, the Lewis and Clark County Public Works Department can objectively evaluate the state of roadways by the condition of the paved surface. The PASER evaluations rate the condition of the road on a scale of 1 to 10 , with 1 being "failing" and 10 being "excellent." Based on its road construction experience, the Public Works Department estimates a roadway that is ranked as a 1 or 2 per the PASER grading system costs $1,000,000 a mile to fix, while a road ranked as a 3 or 4 costs $250,000 per mile or one quarter the cost. The PASER analysis does not determine if the roadway is built to county standard in terms of design factors such as roadway width and alignment, but it is a readily available and effective means of identifying paved roads that are unsuitable for servicing high density subdivisions.

CH 4 FIGURE 2— Poorly constructed and maintained local paved road requires full reconstruction based on the PASER pavement analysis.

In 2014 the Lewis and Clark County Public Works Department completed a PASER analysis of paved county roads. That analysis found that within Lewis and Clark County there are 33.58 miles of hard surface roads (either paved or chip sealed) that are in a very poor or failing condition, meaning they could cost approximately $34 million to fix. Overall, the Lewis and Clark County Public Works Department have prioritized over $23 million in immediate maintenance needs which does not represent the entire maintenance backlog. The annual budget for road improvements beyond normal maintenance operations is about $500,000. That limited amount of money usually goes to provide the local matching share for State and Federal road projects. The County lacks fiscal resources to fund road improvements to accommodate regional growth and development.

ROADS

KEY POINT #2 — The County has no effective long-range or short-range planning tools to respond to needs of the road network to accommodate future growth and development.

CURRENT PLANNING PARADIGM

There are essentially two tools the County uses to manage the impact of increased traffic on the road network. One strategy is long range transportation planning, the other is reacting to individual development proposals. Both tools have limitations.

Long Range Transportation Planning

The Greater Helena Area Transportation Plan is developed jointly between the County, the City of Helena, and the City of East Helena and in consultation with the Montana Department of Transportation. This long range planning document identifies issues and prioritizes improvement projects on major roads, which in the County are primarily the state highways. While the transportation plan is effective at identifying issues and planning improvements to the major roadways, it does not address or plan for growth that will occur mostly on the lower volume County roads.

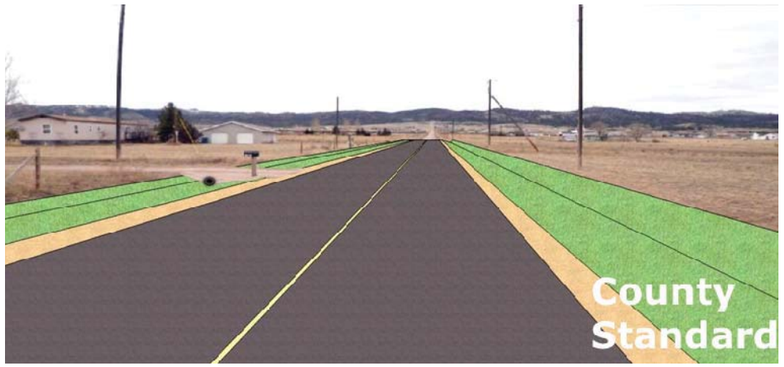
Reacting to Individual Development Proposals

The second tool is the proportional share analysis adopted in response to the court decisions on off-site road improvement requirements. The proportional share analysis is only implemented when reacting to a specific subdivision proposal. The proportional share analysis is used to determine the extent of upgrades that a subdivider is responsible for by using a mathematical formula to compare the proposed and existing traffic volumes. The final number identifies the percentage of road improvements a developer can be held responsible for in order to bring the road(s) up to County standards.

This means the subdivider is required to pay for road upgrades that are proportional to the development's impact. While this sounds good in theory, upgrading a gravel road to a level that meets the accepted engineering standards can be very expensive. The costs can be as high as $1,000,000 per mile for converting a gravel road to a County-standard paved one.[1]

So if a developer is required to pay a proportional share for a road upgrade for example, 58% of one mile of road at $1,000,000 per mile, the cost to the developer is $580,000. If the developer has enough land to do ten lots, that means they would need to charge lot purchasers $58,000 each, which is often more than the market value of the lots themselves, just for the off-site road improvements. This means that the system currently in place is only partially effective for very large subdivisions where such off-site road costs can be spread over hundreds of lots.

Beyond the problem of developers being able to sustain the costs of off-site road improvements, the balance of $420,000 in road improvements in this example is unfunded on the County side of the equation. The County must either make the decision to raise taxes to meet the unfunded costs of the road improvement, or it must wait until another development is proposed on the same road, which could be a matter of several years or even decades. The third option is to use the money to do limited improvements to the road, which is seldom cost-effective from a construction management standpoint, especially in cases of proportional shares going in the opposite direction of magnitude.



$$\frac{P}{(P+E)} * (100) = I$$

Where:
P = Projected Traffic (ADT)
E = Existing Traffic (ADT)
I = Percentage of Impact

CH 4 FIGURE 3— Current system requirement to pay for rebuilding substandard roads per the percentage of added traffic impact on the road from the subdivision.

Although the problem is reduced for developers when the percentage of traffic on a road being generated by a new subdivision is small, and it is often in the range of 5% or less for small projects on busier roads, the unfunded liability for the County is proportionately increased in such cases, and the challenge of finding a way to cost-effectively do partial improvements is even more difficult.

Beyond the basic cost questions of the current off-site road improvements program, there are three additional problems with this system:

1) Upgrading the road may or may not be a priority for the County when compared with other needs;

2) The County can't even afford to maintain all of its roads, let alone come up with additional money to upgrade them; and,

3) It does not address long-term maintenance costs.

As a result, even though the subdivision gets built and the impacts occur, the road may not get upgraded and the $580,000 may sit in an account with the hope that someday the other $420,000 needed for improvements is funded or smaller amounts get collected and spent on small projects that don't really meet the road upgrade goals.

INVESTING IN TRANSPORTATION INFRASTRUCTURE

Targeted Investment in Transportation Infrastructure

If somehow the money were available, how much would it cost to upgrade the road network to meet current standards as well as accommodate future growth on a comprehensive scale? A 2005 study by Anderson-Montgomery Consulting Engineers, Inc. for Lewis & Clark County looked at doing comprehensive improvements to the road network in the North Helena Valley in response to past and anticipated development in that area. [2]

The North Helena Valley was originally sparsely populated. The transportation network was designed to serve individual farms and ranches. In the 1970s development in the North Valley exploded and since then growth has continued. The road system, originally designed to accommodate dispersed farms and ranches, now needs to accommodate 3,400 people and 1,300 homes.

To bring the transportation network up to current County standards and to accommodate the projected growth in the North Valley Study Area would cost between $16 million and $23 million in 2005 dollars. If significant investments in transportation improvements are to be made, the challenge will be to make targeted investments that:

1) Serve the greatest number of users;

2) Provide the highest level of service and safety; and,

3) Result in a transportation system that best meets the needs of the travelling public.

[1] Robert Peccia and Associates, 2012, Preliminary Engineering report: Applegate Drive, Lewis and Clark County.

[2] Anderson-Montgomery Consulting Engineers. Inc., WGM Group, Inc., Boyer Consulting, 2005, North Helena Valley Infrastructure Study, Lewis and Clark County.

Promoting Denser Development in Targeted Areas and Sparser Development in Rural Areas

In addition to the costs, there are also risks in making large investments to the existing road system. Currently there is no mechanism in place to encourage development in areas with an existing road network that can already accommodate the additional traffic, or to guide development to areas where public investments are made.

There is a saying that *growth follows roads*, but without a mechanism to guide growth to certain areas, growth can occur anywhere without consideration for these investments, which could perpetuate the County's struggles.

Currently in Lewis and Clark County, *roads follow growth*. It would be a risky investment for the County to spend taxpayer dollars to upgrade or build roads, drainage improvements and sidewalks or trails to accommodate new growth if no mechanism is in place to reasonably ensure that significant growth will happen in those areas. Therefore, it may be appropriate to develop a program that encourages denser development in areas with better current and planned transportation facilities and a more rural development pattern in areas that do not have and are not planned for significant road improvements.

Cost Sharing in Targeted Areas

Given the scale of anticipated growth in the Helena Valley Planning Area, and the fact that developers cannot be relied on to bear the whole burden of public transportation improvements, cost sharing between developers, the County and residents through the use of improvement districts may be an efficient mechanism to meet road improvement needs. A system of targeted improvements and shared funding sources can result in effective solutions to transportation problems. From the County's perspective, however, it will be important to determine ahead of time, through systematic planning and budgeting, what roads and other improvements will result in the most effective transportation improvements for Lewis & Clark County taxpayers. Such improvements must be planned based on long-term community needs and not in reaction to a development proposal based on local land that happens to be for sale.

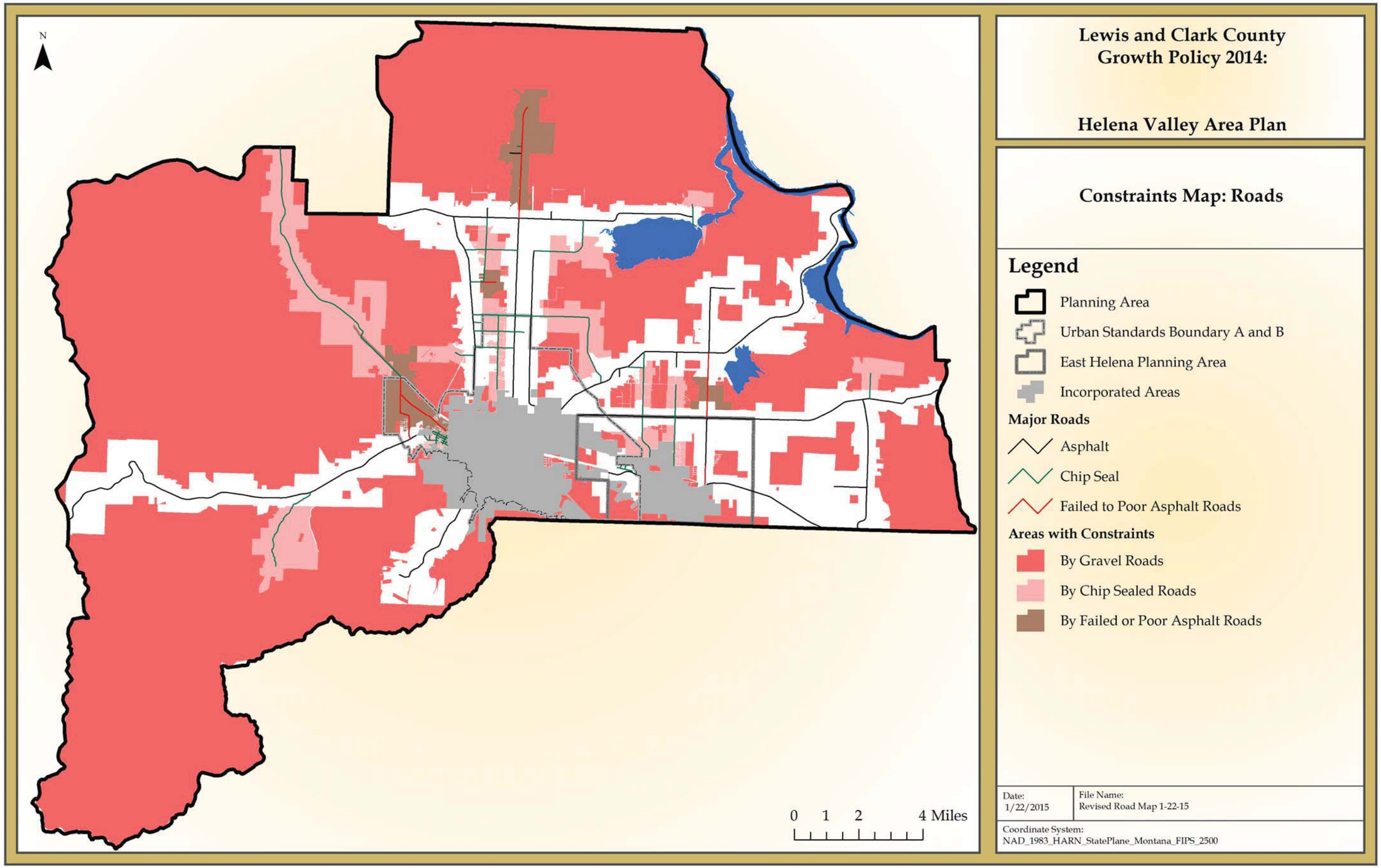
ROADS

KEY POINT #3 — The County needs a system in place that will maximize the efficiency of the existing transportation network and also cost effectively accommodate projected growth.

SUMMARY

Over the course of the next twenty years, the Helena Valley Planning Area is projected to grow by over 10,000 people, requiring up to 4,000 additional housing units. The existing transportation network is primarily gravel, with limited ability to accommodate the projected growth. Some of the paved roads in Helena Valley are similarly constrained.

The current planning paradigm does not plan out where growth will occur in relationship to where the best road network to serve that growth is located; rather it reacts to where development happens without any consideration of the suitability of the County road system. Given the costs of road improvements and maintenance necessary to accommodate projected growth, a combination of planned, targeted improvements and land use controls for development densities may be necessary, along with development incentives where the transportation improvements are planned.



MAP 4 — PORTIONS OF THE HELENA VALLEY PLANNING AREA THAT ARE CONSTRAINED BY GRAVEL ROADS AND FAILING HARD SURFACED ROADS.

FIRE PROTECTION

KEY POINT #1 — Areas of high and high-to-extreme fuel hazards represent a constraint to development in the wildland urban interface.

As the population grows and parts of the planning area transition from rural development patterns to suburban and even urban development patterns, demand on the volunteer fire departments that serve the area is projected to increase. On top of that, as development creeps further and further across the valley floor and into the hills, the risk to public safety and structures from wildland fire also increases. New mechanisms and programs are necessary to accommodate growth and maximize the ability of the rural fire districts to respond to emergencies and to avoid catastrophe in the forests.

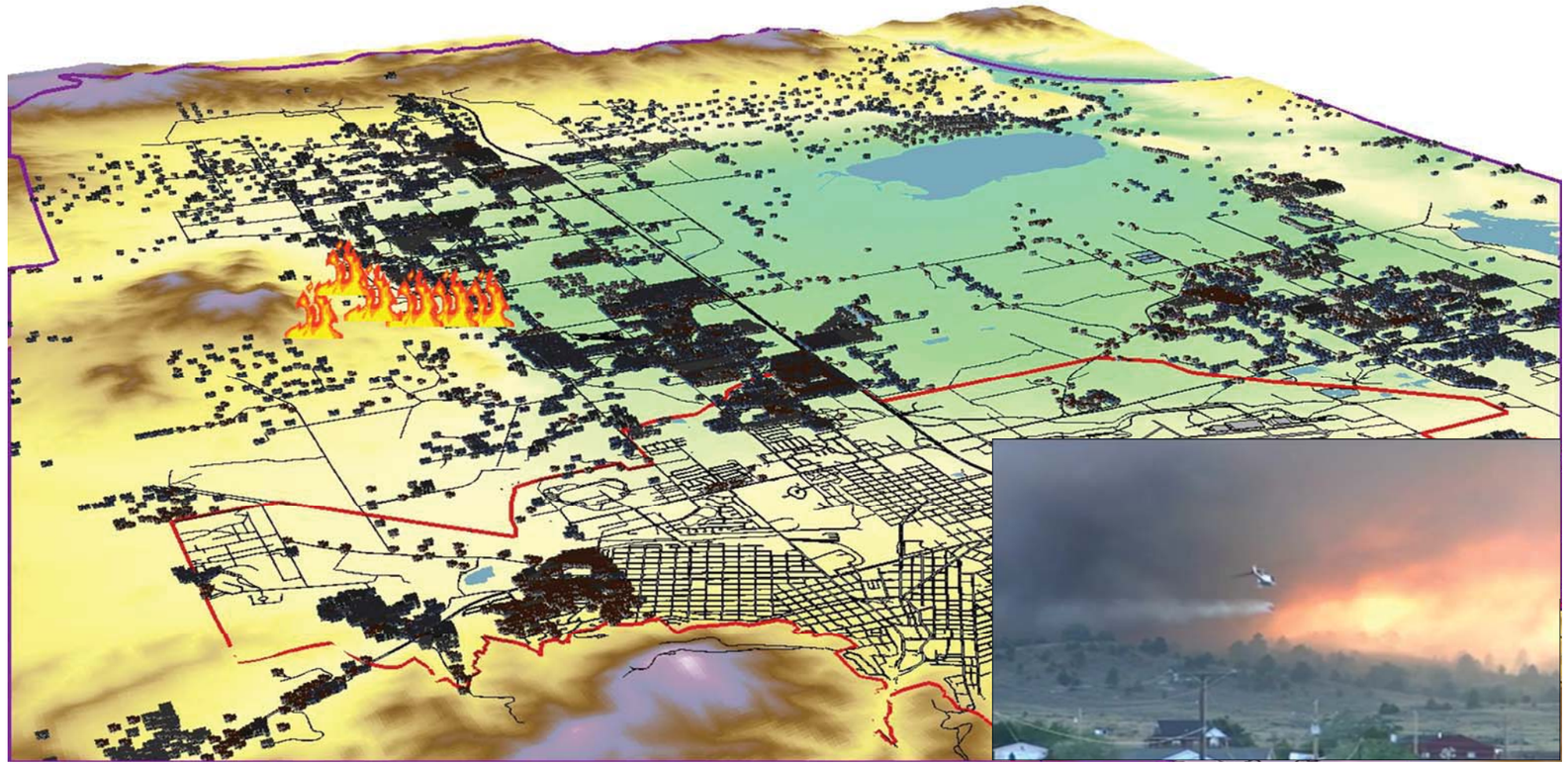
THE WILDLAND URBAN INTERFACE

In June of 2012 an errant spark on private property started a quickly spreading wildfire in the Scratchgravel Hills. The Corral Fire, which destroyed four homes and torched 1,800 acres, is a prime example of the complexity of the Wildland Urban Interface (WUI) in the Helena Valley Planning Area. In some places there is a mix of federal, state and private lands all together. Roads are often winding, narrow and steep, making access for fire fighters difficult, especially in the face of people fleeing the flames. Homes are often isolated, spreading resources for protection very thin.

When discussed in the context of wildland fire, the WUI is where improved property and wildland fuels meet. The WUI can be an interface, where urban development meets wildland fuels (think of where the City of Helena abuts Mount Helena or the National Forest in the South Hills). Or the WUI can be a mix, where homes are mingled with forest or grassland fuels.

Wildfires are becoming larger and more intense than they were in the past. As more people live in the WUI, responding to fires becomes more complex and expensive. Between 2001 and 2010, the cost to the United States Forest Service of fighting wildland fires rose from $580 million annually to $1.2 billion annually. This doesn't include the cost of damages to private lands. At least 30 people suffered damages from the Corral Fire, estimated to be in the neighborhood of $2.4 million. Unfortunately for those landowners, insurance is not likely to cover all the damages.

1 Stein, S.M., Menakis, J., Carr, M.A., Comas, S.J., Stewart, S.I., Cleveland, H., Bramwell, L., Radeloff, V.C., 2013. Wildfire, wildlands, and people: understanding and preparing for wildfire in the wildland-urban interface—a Forests on the Edge report. Gen. Tech. Rep. RMRS-GTR-299. Fort Collins, CO. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.



CH 5 FIGURE 1 — The Corral Fire in June of 2012 started in a newer subdivision in the high fire hazard Scratchgravel Hills and spread down into the Valley, burning 2000 acres and destroying 4 homes before it was brought under control. Similar fires in Colorado Springs burned hundreds of homes over the past few years.

The Tri-County Firesafe Working Group, a collaborative effort between Lewis and Clark, Jefferson, and Broadwater Counties, developed a Regional Community Wildfire Protection Plan that examines risk and prioritizes risk reduction projects in a unified manner. The plan developed a fuel hazard ratings map. This map shows areas in high and very-high-to-extreme fuel hazards. The areas of high and very-high-to-extreme fuel hazards represent a constraint to development because of the risks involved to life and property, and the mitigation needed to reduce that risk.

Within the WUI, mitigating risk is largely up to the landowner. Methods to mitigate risks include fuels reduction, choice of building materials, ingress and egress and building site selection. These mitigation techniques are at the discretion of the landowner. Regardless of the measures taken or not taken, there is a perceived notion that firefighters will protect property. The reality is that is not always the case. Lewis and Clark County approved a resolution that prioritized firefighter safety over protecting property.

"Firemen have the advice of the county commission that in the wildland interface, firemen shouldn't put themselves at risk if there's a fire. They need to make a judgment on how dangerous it is to attempt to save the home versus the risk of the wildfire."

Some new development is subject to County risk reduction regulation in the WUI, but there is not inspection or enforcement of the requirements. New subdivisions must meet certain requirements for fuels reductions along roads, a fuels management plan and sometimes multiple access roads. Some subdivision conditions may limit the overall density of a development, require an

CH 5 FIGURE 2 — Subdivision regulations require vegetation management plans to create "defensible spaces" around structures in fire-prone areas, but there is no inspection program or enforcement of the requirements.

emergency water supply and also require fuels reduction at the time the development is built. However, ongoing fuels management, road maintenance and emergency water supply maintenance is up to individual landowners.

FIRE PROTECTION

KEY POINT #2 — As the population density in the Helena Valley becomes more and more suburban and urban in nature, the demand on the volunteer rural fire departments will increase, and the nature of the calls will change.

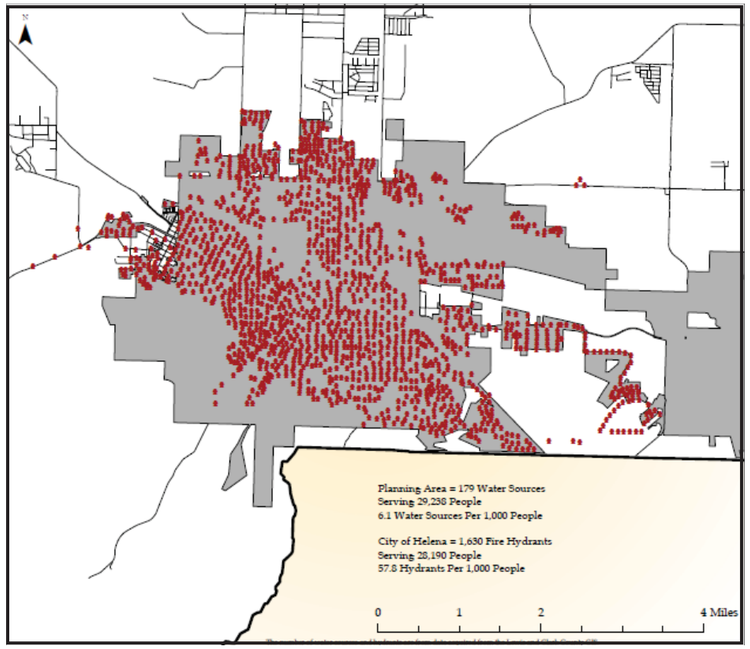
MORE PEOPLE MEANS MORE PRESSURE

In 2010 the US Census Bureau counted over 29,000 people living in the Helena Valley Planning Area. This number is 1,000 more than the population of the entire City of Helena at that time. The development pattern of these 29,000 people is varied. While much of the valley is sparsely populated, there are neighborhoods where the population density is over 1,000 people per square mile. The vast majority of the planning area's population, about 24,000 people, lives within the heart of the Helena Valley near the two cities. The other 5,000 people are scattered throughout the rest of the planning area.

Looking into the future, in 20 years the Helena Valley Planning Area is projected to grow from 29,000 people to 39,000 people. If previous growth patterns continue, at least an additional 1,700 people will scatter into the more remote places in the planning area, and at least 8,300 will move into Helena Valley near the two cities. The conversion of rural lands to suburban and urban densities will continue.

As the population density in the Helena Valley becomes more and more suburban and urban in nature, the demand on the volunteer rural fire departments will increase and the nature of the emergency calls will change. According to local Fire Chiefs, calls for car accidents, heart attacks and non-fire related calls have been increasing at an alarming rate due to all of the development that has occurred, and it will likely continue to increase as more and more land is developed in and around Helena Valley.

At a recent meeting with three rural district Fire Chiefs, one of them described a call where the lone staff person at a nursing home called 911 because a patient had fallen and the staff person couldn't get them off the floor alone. This call activated 20 volunteers in the middle of the night for something that was not an emergency and should have been the responsibility of the nursing home. This was just one example given of a trend of the emergency calls the volunteer departments in Helena Valley are responding to as the area develops.



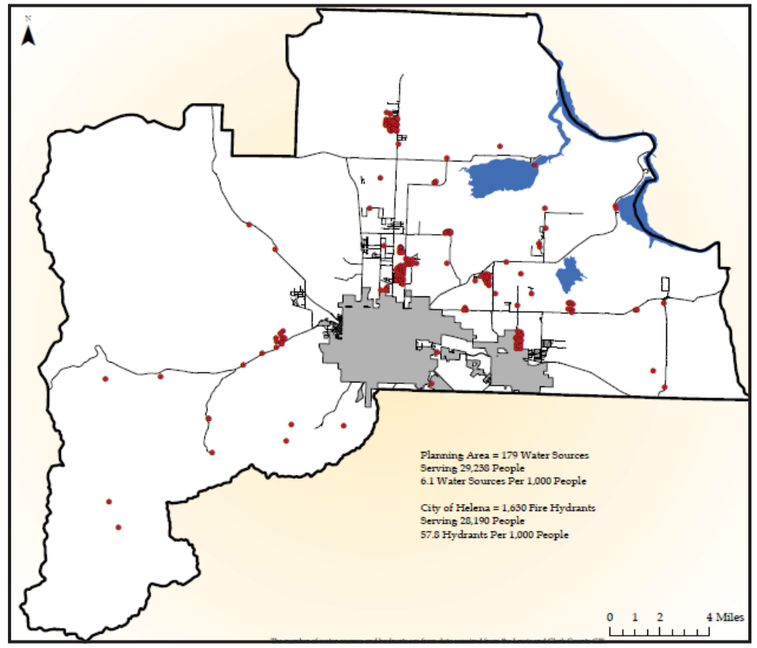
CH 5 FIGURE 3A— The City of Helena Fire Department has more than 1630 hydrants available to protect a population of 28,000 people—about 60 hydrants per 1000 population mostly located within a 1000 feet of the buildings they protect.

The national Association of Volunteer Firefighters warns that as communities grow, it becomes more and more difficult to recruit volunteers. Looking at this scenario, the need for paid professional emergency response personnel comes into focus along with the costs of providing that service.

Another challenge facing rural fire districts in the Helena Valley is the distribution of resources. Right now, the volunteer rural fire districts serve a larger population than the full-time, paid fire staff at the City of Helena. The rural population is spread out over a much larger area, meaning their resources are spread out. The best example of the thin distribution of resources is water supply.

FIRE PROTECTION

KEY POINT #3 — Volunteer rural fire departments must protect a population the size of Helena scattered over nearly 400 hundred square miles with less than 200 fire hydrants or water pumping sources.



CH 5 FIGURE 3B— The Rural Fire Districts have 179 hydrants to protect a population of 29,000 people—about 6 hydrants per thousand population mostly located miles from the buildings they protect.

FIGHTING FIRE WITH WATER

The water source for fighting fires in the City of Helena is a network of fire hydrants connected to the City's water supply. Each hydrant has a seemingly unlimited supply of water that meets nationally recognized standards for flow volume and pressure. There are over 1,630 of these fire hydrants serving 28,000 people. That equals around 18 people per hydrant.

By comparison, in the Helena Valley 24,000 people live spread across 123 square miles in the built up portions of the planning area (another 5000 are scattered in more rural portions). In this 123 mile area there are 142 water sources, averaging 169 people per water source. In the City each water source is connected to the City's water supply, which in the short term provides an unlimited supply of water. In the county, the amount and flow volume of each water source is severely limited, either by the capacity of the storage tank, the well or the pump (assuming a pump exists). And fires in rural areas don't happen based on the availability of water supplies. In most cases, volunteers arrive at a fire scene with a tank truck holding 1500 gallons of water that will provide about ten minutes of fire fighting time. They must then drive the truck to the nearest water source, which may be several miles distant, to refill the tank and return to the fire for another round of 10 minutes of fire suppression. For major events, volunteers rely on a convoy of tankers to truck water from the limited water sources to fire scenes.

FIRE PROTECTION

KEY POINT #4 — The current rural fire protection system relies on convoys of volunteer-driven tank trucks with 1500 gallons of water and 10 minutes of fire fighting capacity rather than a piped water system with unlimited amounts as is available in the City.

The roads used for trucking water to fire locations are another challenge facing rural fire districts. The County does not have funding to maintain and update the network of roads we have today. Also, private subdivision roads extending into the hills rely on private maintenance, which may or may not be sufficient to support effective response in the event of a wildland fire. If growth continues to occur in the historic pattern, the roads within the County will become even more problematic. These roads are critical to emergency responders, and the condition of roads not only affects response times; it has an impact on the ability of the districts to maintain their equipment. A 2005 North Helena Valley Infrastructure Report stated that according to local emergency service providers, the condition of the roads should be one of the primary transportation problems remedied. The report specifically stated:

"Fire protection in the area is provided by a local volunteer fire department which is limited by the availability of adequate transportation routes and water supplies."

URBAN DENSITY WITH RURAL STANDARDS

Another concern frequently voiced by rural fire officials is the fact that subdivisions are being built in the County at densities equal to the City of Helena. Along with the lack of City water and suitable access roads, the County lacks design standards to require construction of proper roads within high density neighborhoods. Small house lots lack adequate parking for family members and visitors and they often must park on the streets. Where on-street parking is expected, the City requires road widths adequate to park vehicles while maintaining clearance for vehicles to pass on the street. The County standard for all local neighborhoods is a 24-foot pavement width, which provides no room for on-street parking. If roads are blocked by parked vehicles in a fire event, residents can't evacuate and emergency responders can't get to the scene.

Such high density subdivisions also exacerbate the problems for fire fighters in achieving the emergency objective after evacuation of occupants—containment of the fire to the structure(s) involved. Relying on tanker trucks to transport 10 minutes of fire fighting water supply to a high density subdivision in the County can make a difficult and dangerous job even more so. As one Fire Chief recently put it, "The density is killing us!"

CH 5 FIGURE 4A— High density neighborhoods built in the County can have a road width of 24 feet. On-street parking leads to blockage of streets for evacuation and emergency vehicle access.

CH 5 FIGURE 4B— High density neighborhoods built in the City must have adequate road widths to provide for on-street parking while keeping roads passable for evacuation and emergency vehicle access.

FIRE PROTECTION

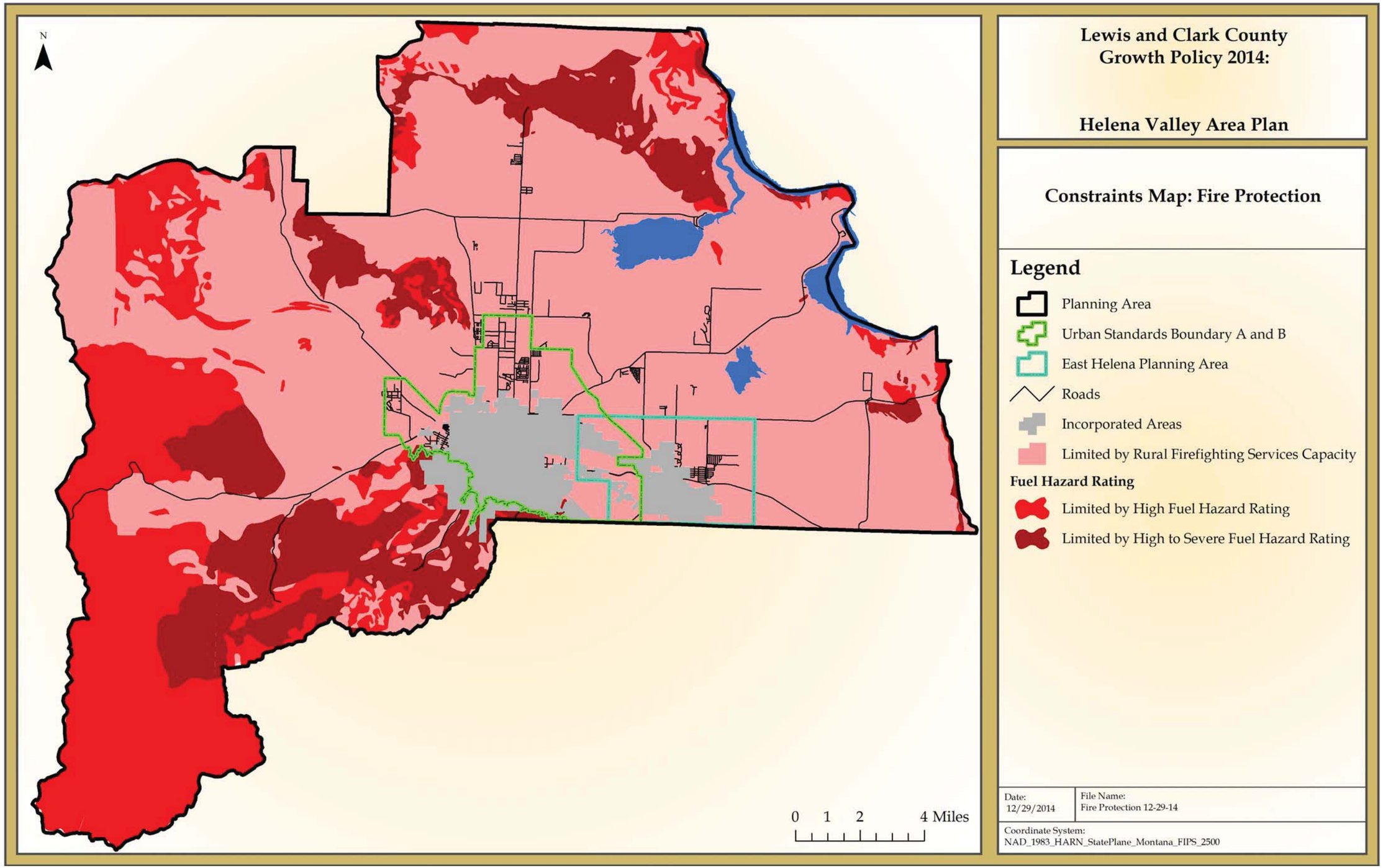
KEY POINT #5 — Poorly designed, high density subdivisions with narrow streets and small lots exacerbate the difficulties for rural volunteer fire companies.

SUMMARY

There are many challenges regarding the future of fire protection in the Helena Valley Planning Area. One is development in the Wildland Urban Interface. Wildfires are getting more severe and difficult to fight, at the same time development in these areas is increasing. Standards in the WUI meant to mitigate the risks to life and property are not carried out in most developments, particularly over the long term where it is up to individuals and homeowner groups to maintain roads, water supplies, and vegetation management plans to keep wildland fuels away from structures and access roads.

As growth occurs in the Helena Valley Planning Area, we can expect to see increased risk and additional loss of homes in wildfires. Solutions must be developed that reduce risks to the taxpayers who pay for the fire protection services, homeowners who face the costs of mitigation and maintenance, and the firefighters who put their safety on the line.

In the heart of the Helena Valley, where over 80% of the population of the Planning Area lives, the landscape is changing from rural uses to suburban and urban densities. As an additional 10,000 people move into the planning area, the trend of suburbanization and urbanization will continue. The water sources necessary to serve that population are limited in number and quality. As the area urbanizes, it may become more difficult to recruit volunteers and calls are likely to increase. New mechanisms and new programs are needed to safely accommodate the additional growth that is projected to occur.



MAP 5 — PORTIONS OF HELENA VALLEY PLANNING AREA THAT ARE CONSTRAINED BY WILDLAND FUEL HAZARDS AND RURAL FIRE PROTECTION SERVICES.

FLOODING

KEY POINT #1 — Development in flood prone areas is expensive, costing millions in damages during floods, and millions to mitigate in order to reduce damage.

FLOODING IN THE HELENA VALLEY PLANNING AREA

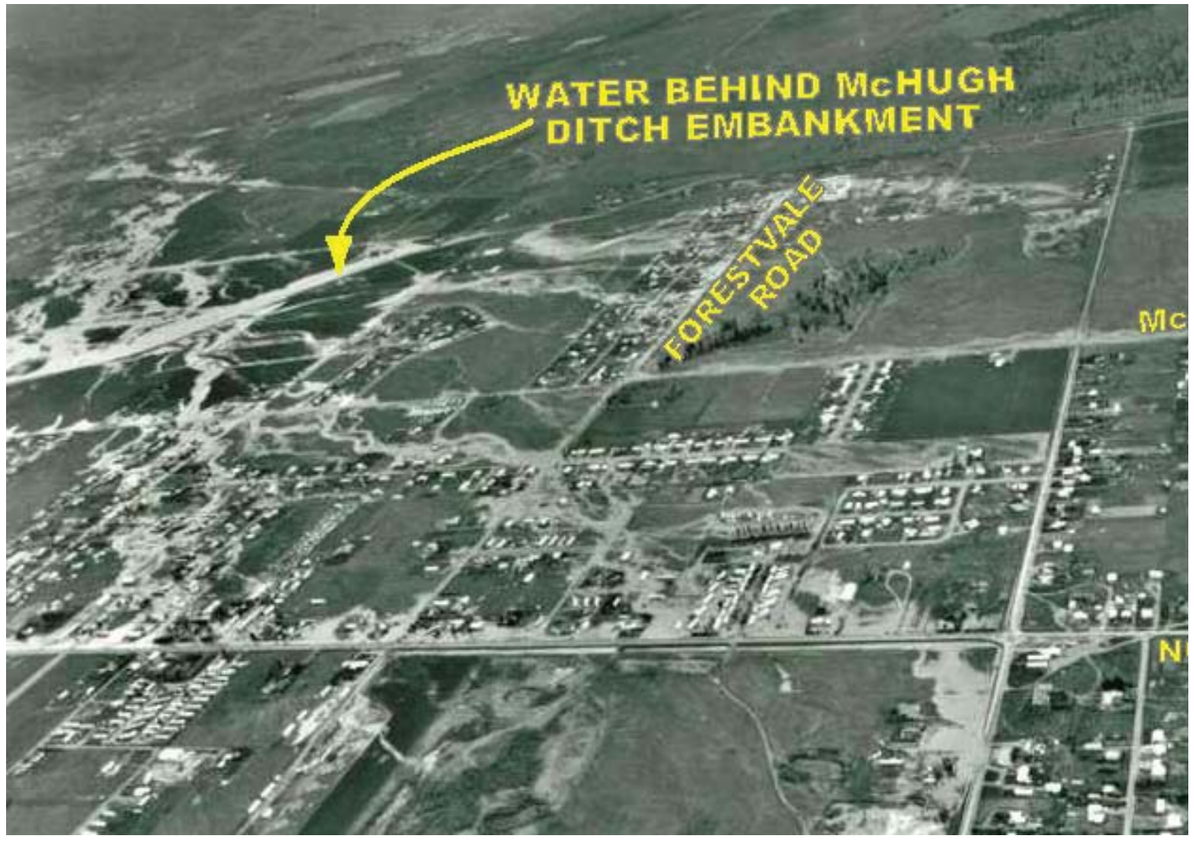
Despite the dry climate and few streams, parts of the Helena Valley Planning Area are surprisingly susceptible to damaging flood events. As Prickly Pear Creek, Ten Mile Creek and Silver Creek flow from the higher gullies and canyons onto the valley bottom, they form alluvial fans where the banks become less defined and the streams more likely to flood. Minor flooding along Prickly Pear Creek happened in the spring of 2014. Ten Mile Creek and Silver Creek experienced a flooding event in 2011.

The intensity of a flooding event is determined by the amount of rainfall that occurs to produce the flood. It also is often caused by rapid snow melt and ice damming in streams and causing overflows. The worst floods occur when heavy rainfall combines with rapid snow melt and/or ice damming. Hydrologists have developed systems to measure flood intensities. One is to compare the normal flow levels of a stream in cubic feet of water that passes in a second (cfs). Once the flow rate exceeds the cfs capacity of the stream channel, the banks overflow and flooding occurs.

Another measurement system frequently used to measure flooding is the "flood year." The baseline storm event for the National Flood Insurance Program is the 100-year storm. This does not mean as the description implies, that such storms only happen once in a century. It is a statistical term indicating that a storm of that magnitude has only a 1 percent chance of occurring in any given year. It is possible to get two 100-year storms in a single year depending on snow fall and weather patterns. A 25-year storm, by comparison has a 25 percent chance of occurring in any year, and storms of that frequency are pretty normal. Many states require drainage systems to be designed to convey flows up to a 25-year storm event based on cost-effectiveness of construction.

In 1975, flooding events on Prickly Pear Creek and Ten Mile Creek were considered between a 50-year and 100-year event. In 1981, a major flooding estimated at the time to be a 500-year event, impacted streams throughout the area including the three main streams in the Helena Valley Planning Area.

These flood events pose a challenge. The floodplain of Ten Mile Creek is just north of the City of Helena and the flat ground and proximity to services make the area prime for development. Likewise, Prickly Pear Creek runs through the City of East Helena, and then flows to the north of the Helena Airport, also in an area with high development potential. Allowing development in flood prone areas is expensive, costing millions in damages and millions to mitigate. Clearly, floodplains are a constraint to development.



CH 6 FIGURE 1 — Air photo taken during 1981 flood of Ten Mile Creek showing extensive flooding in neighborhoods and areas that have since been developed.

CURRENT SITUATION

Flood events in the past have caused significant damage to property within the Helena Valley Planning Area. Damage from the 2011 flood on Ten Mile Creek was estimated to be around $234,000 while the 1981 flood caused $3.2 million in damage to residential and commercial properties. The 2011 flood was estimated to be a 22-year event, meaning an event of that magnitude is very likely to happen again. The 1981 flood was estimated to be a 500-year event. Obviously the chance of such a large event is less, but the consequences are much greater when it does happen.

Ten Mile Creek is prone to widespread flooding downstream of Green Meadow Drive. Just east of where the creek flows under Green Meadow Drive, the stream tends to overflow its northern bank. When it overflows, the water tends to spread out, causing a sheet flow over a large area rather than through specific channels. The water flows north to northeast, through a number of subdivisions and commercial properties. The water eventually enters a drainage which is built for moving irrigation waters, and then eventually it enters Lake Helena.

The floodplain of Silver Creek, which is a much smaller creek than Ten Mile Creek, flows directly through an existing subdivision. Usually the creek is dry there, but during spring runoff, localized flooding within the subdivision is a reoccurring problem. Silver Creek most recently flooded in 2011 along with Ten Mile Creek.

Like the other two streams, Prickly Pear Creek is prone to flooding when the system enters the valley. Most of the floodplain of Prickly Pear Creek is relatively low density and agricultural land, although it does flow through the center of the City of East Helena where extensive flood damage happens during major flooding events.

EXPENSIVE MITIGATION PLANS

Following the 2011 flooding on Ten Mile and Silver Creek, the County undertook a detailed Flood Mitigation Plan [1] that makes recommendations on how to mitigate the impacts of future flood events on Ten Mile Creek and Silver Creek. The objectives of the mitigation plan are:

- Minimize impacts to residents;
- Get floodwaters out quickly;
- Improve "retention" of floodwaters in select sites; and,
- Keep flows within the Ten Mile Creek channel.

[1] Anderson-Montgomery Consulting Engineers. Inc., 2013, Flood Mitigation Master Plan for the Helena Valley, Lewis and Clark County.

CH 6 FIGURE 2 — Flooding along Ten Mile Creek in the 22-year flood that occurred in 2011.

The core of the plan is to move flood waters through a series of ditches, berms and culverts to increase the flood management capacity of the drainage system. Retention ponds would be built in specific locations to store water to avoid over-charging the system. This mitigation plan would not eliminate flooding and would not prevent Ten Mile Creek from overflowing its bank. The idea is to channel the sheet flows into ditches and move it out of the area more quickly. Sheet flow flooding would still occur in some locations.

Overall, the plan would provide mitigation for a 50-year flood on Ten Mile Creek at a cost of about $5 million. The fix for Silver Creek, which would address a 100-year flood, would be about $2.2 million. Both of these projects require upgrades to an irrigation drain in order to move water out of the area, at a cost of about $2.4 million. It is important to note the mitigation on Ten Mile Creek is for a 50-year event; it is not meant to address a 100-year or greater flooding event. The extent of the 100-year floodplain and 500-year floodplain would not change as a result of the flood mitigation plan. There would just be less flood damage in the smaller events.

FLOODING

KEY POINT #2 — Developing suburban and urban densities in areas prone to flooding is not a good strategy.

CONSTRAINTS TO DEVELOPMENT

As mentioned, mitigation measures on Ten Mile Creek are not designed to address anything larger than a 50-year flood event. Large areas north of Ten Mile Creek, east of Green Meadow Drive, and west of Interstate 15 will still be at risk of flooding in events smaller than the 100-year flood event and at greater risk for larger events.

Current regulations limit, but do not prohibit development within the 100-year floodplain. The regulations require that structures built or altered in the 100-year flood plain be elevated at least two feet above the base flood level. This can be accomplished by special construction or by filling to raise the ground elevation. The latter means simply displaces water and pushes the flooding onto other properties and is technically prohibited. But monitoring fill activities is beyond the capacity of the County and it is more likely to occur in areas along the edges of the flood plain as property gets developed. Within the 500-year flood plain, there are no restrictions on construction or filling activities.

Areas within the 100-year floodplain north of Ten Mile Creek and east of Green Meadow Drive represent significant constraints to development because of the risk of flooding and the County's current allowance for high-density development in those areas. Areas of the 500-year floodplain, where an event in 1981 put the whole area under water, are open to development under our regulations but are also constrained by the risk of flooding. High density development in flood prone areas would likely result in significant damages, far in excess of the $3.2 million from the 1981 flood, which happened before much of the development in that area was built.

The City of Helena has established a framework of conditions, based on a 2009 Memorandum of Understanding between the City and Lewis and Clark County, that identifies an Urban Standards Boundary B. The Urban Standards Boundary B is an area for urban and suburban development on municipal sewer and water. Portions of the area identified in Urban Standards Boundary B west of Interstate 15 are within the areas subject to flooding from Ten Mile Creek. Given the current risk to flooding, urban and suburban development in the 100 year and 500 year floodplain is not rational and this growth boundary should be revised to reflect the flooding potential.

FLOODING

KEY POINT #3 — Current regulations don't prevent development in areas subject to flooding in severe storm events.

SUMMARY

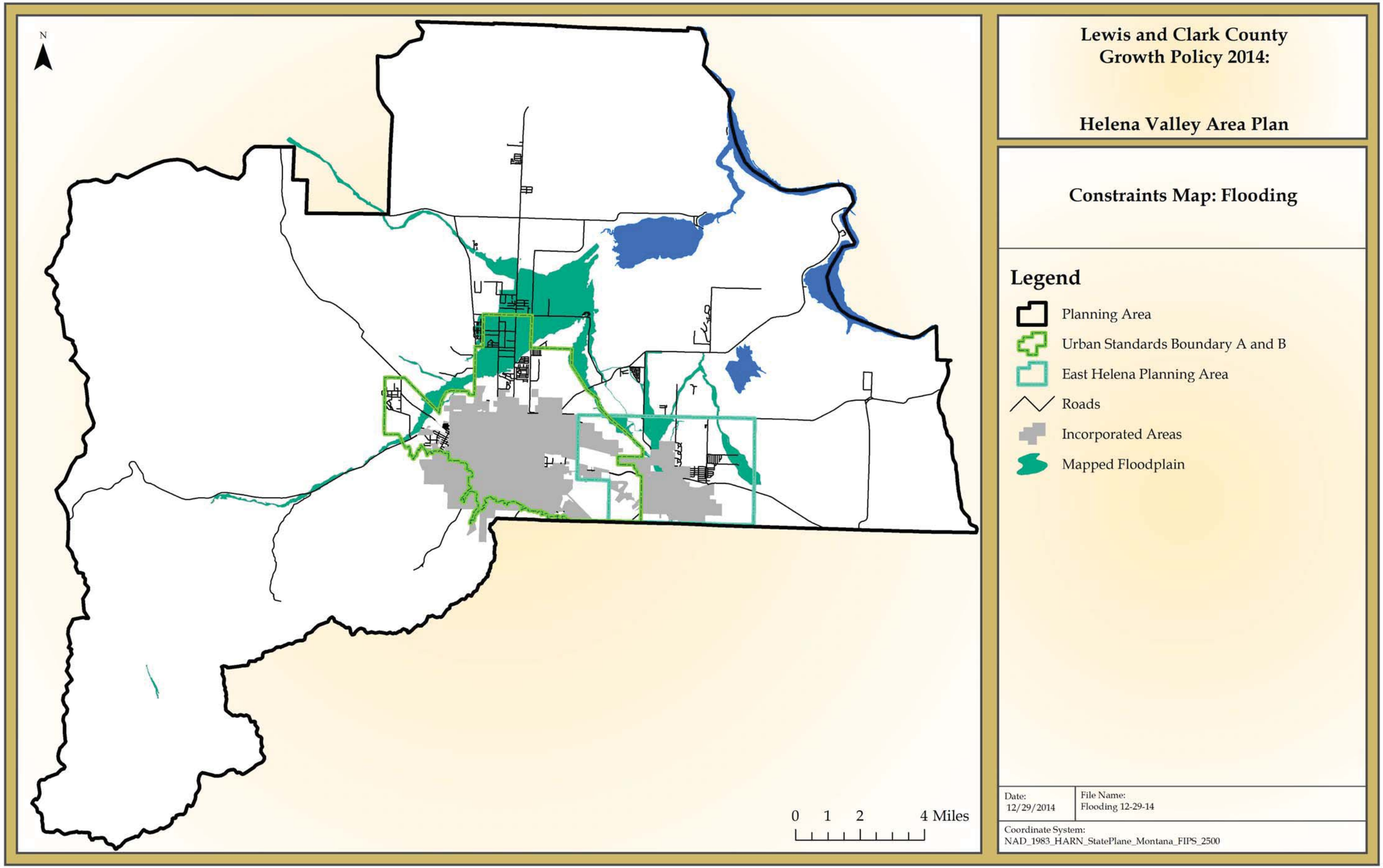
Suburban and even urban type development has occurred between Green Meadow Drive and Intestate 15 in the floodplain of Ten Mile Creek, and in the floodplain of Silver Creek in the North Valley. When these streams flood, property is damaged. Based on the recent Flood Mitigation Plan, the cost to mitigate impacts to the affected neighborhoods is upwards of $9 million. And that investment will not protect from damages incurred in the higher intensity floods.

Clearly, developing suburban and urban densities in areas prone to flooding is not a good strategy. The costs to mitigating the impacts of flooding are too high to homeowners and also taxpayers who subsidize flood insurance premiums. Better mechanisms to steer growth away from floodplains are needed to avoid the costs of mitigation and damages.

FLOODING

KEY POINT #4 — The current Growth Policies of Helena and the County designate certain portions of the Ten Mile Creek flood plain for urban expansion.

CH 6 FIGURE 3 — Flooding from spring snow melt in 2014 along McHugh Drive north of Helena.



MAP 6 — PORTIONS OF THE HELENA VALLEY PLANNING AREA THAT ARE CONSTRAINED DUE TO PERIODIC FLOODING.

PUBLIC INPUT

KEY POINT #1 — The Planning Board, staff, and consultants undertook a multi-pronged and multi-phase campaign to maximize public input into the preparation of this report.

PUBLIC PARTICIPATION PROCESS

In conducting this update to the County Growth Policy and in preparing this report, the Planning Board and staff followed an outline prepared by the planning consultant intended to provide multiple opportunities for public input. The four-phase public participation process was intended to:

- Inform people of the Helena Valley Growth Policy update project;
- Educate people on the critical issues to be addressed in the update (water supply, wastewater treatment, fire protection and road building/maintenance); and
- Inspire people to participate and provide ideas for addressing the critical issues.

Staff in Community Development and Planning initially identified the four key issues of water availability, wastewater, roads, and fire protection based on the recurrence of these issues in numerous subdivision reviews and the lack of clear policy direction and effective County responses to them. These issues were presented to the Planning Board and other County departments for confirmation before proceeding.

The first step in the planning process was to invite experts in each of the topical areas to meet with the Planning Board to get their perspectives on the key issues and to understand the challenges facing the County in responding to them. Based on those initial meetings, staff and the Planning consultant prepared a four-page brochure to begin an outreach effort to stakeholders that would be affected by policy changes or interested in pursuing them.

STAKEHOLDER OUTREACH EFFORTS

Starting in June of 2013, presentations were made to the following stakeholder groups identified by staff and the Planning Board:

Helena Building Industry Association Board— June 17, 2013

Helena Area Realtors — July 9, 2013

Water Quality Protection District Board — September 24, 2013

Lake Helena Watershed Group — October 17, 2013

Helena Engineers Club — November 21, 2013

East Helena Planning Board — January 16, 2014

Helena Valley Flood Committee — January 23, 2014

Montana Business Assistance Connection & **Airport Authority** — February 18, 2014

Open Lands Committee & **Prickly Pear Land Trust —** March 4, 2014

Helena Citizens Council — April 23, 2014

County Health Board — April 24, 2014

County Health Department — June 17, 2014

In addition to these presentations, a letter of solicitation and the brochure were also sent to the following organizations with an offer to meet:

City of Helena

Helena Valley Irrigation District

Helena Civil Engineers ASCE

Joint Land Use Study Committee (for Fort Harrison)

Lewis and Clark Rural Fire Council

Although no formal meetings with these groups were conducted, staff met with individual members or received comments back from the City of Helena Community Development staff, the Fort Harrison Planner, and rural Fire Chiefs.

In addition to providing information on the Growth Policy Update process and the key issues to these stakeholder groups, these forums provided opportunity for staff, consultants, and Planning Board members to solicit important input that influenced the process and product, including adding a fifth key issue of Flooding.

PUBLIC INPUT

KEY POINT #2 — Public participation included meetings with 13 stakeholder groups and consultations with individuals from 3 more.

CITIZEN SURVEY

The second track of our public participation process was to do a mail survey to all households and businesses in the Helena Valley Planning Area.

Basic questions for each of the four key issues were developed by Land Solutions, LLC in consultation with the Community Development & Planning Department. The questionnaire was then fine-tuned by The Research Group, Inc., a firm that specializes in citizen surveys, during several phone meetings with Land Solutions and the Department. An attempt was made to provide context for the questions and to word questions and responses in a balanced fashioned including consultation with local industry groups. A number of "demographic" questions were included to allow more in-depth analysis of the results.

A mail packet was prepared and sent to 10,335 mailing addresses. The packet consisted of a cover letter, a brochure discussing each of the four issues, the survey, and a postage paid return envelope. Respondents were asked to return their completed surveys within three weeks. The field was actually kept open an additional week because of the large number of returns arriving several days after the three week deadline.

The number of completed surveys was 2977 for a response rate of 28.8%. In addition to the prepared survey questions on the key issues, the survey provided opportunity for each respondent to identify additional issues and to elaborate on them with written comments. Of the nearly 3000 people who returned the survey more than a third of them (1197) took the time to provide written comments and all of those comments were typed in and evaluated along with the tabulated results of the survey questions.

PUBLIC INPUT

KEY POINT #3 — A mail survey was sent to 10,355 addresses in Helena Valley. A total of 2977 were returned for a response rate of 29%. A third of those included written comments.

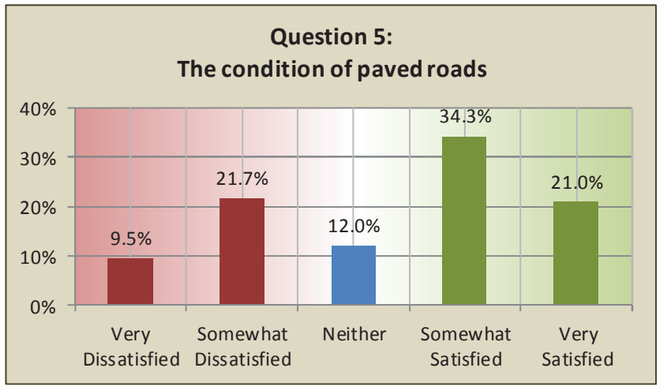
SURVEY RESULTS

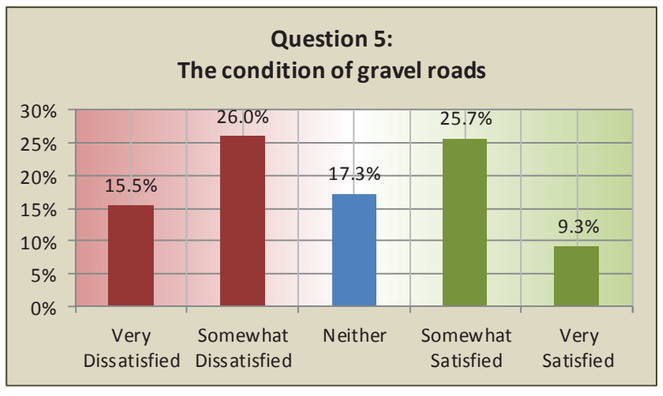
Demographic Questions

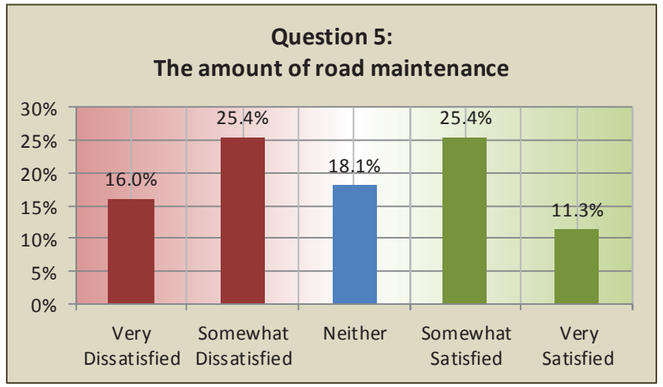
The first four questions on the survey asked for basic information on where people lived and worked. The vast majority of survey respondents live in the unincorporated areas of Helena Valley (89%). Most people have lived in the area more than a decade (74%). A majority also work outside the home (58%), but a significant portion are retired (36%). Of those who are working, the vast majority do so in Helena (71%).

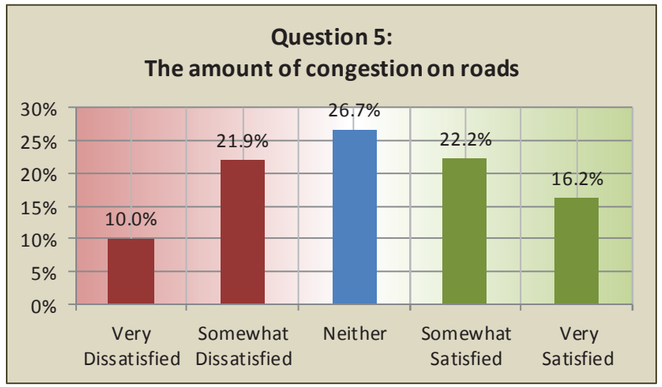
Questions on Roads

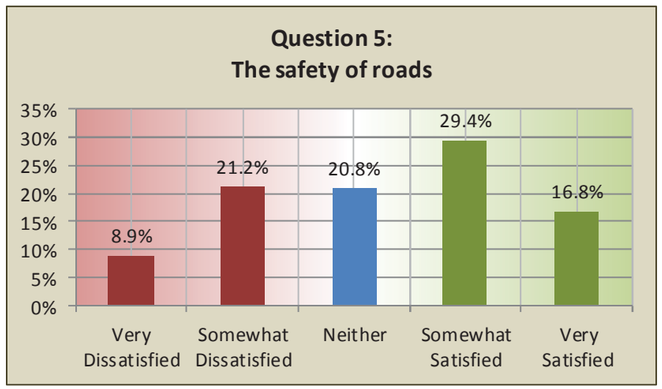
Of the four topical issues in the survey, the least amount of consensus was indicated on the topic of roads. People were pretty evenly split on most of the questions. It is also noteworthy that a significant portion of respondents had no opinion to offer on each of the road condition, maintenance, congestion, and safety questions (center blue bars).



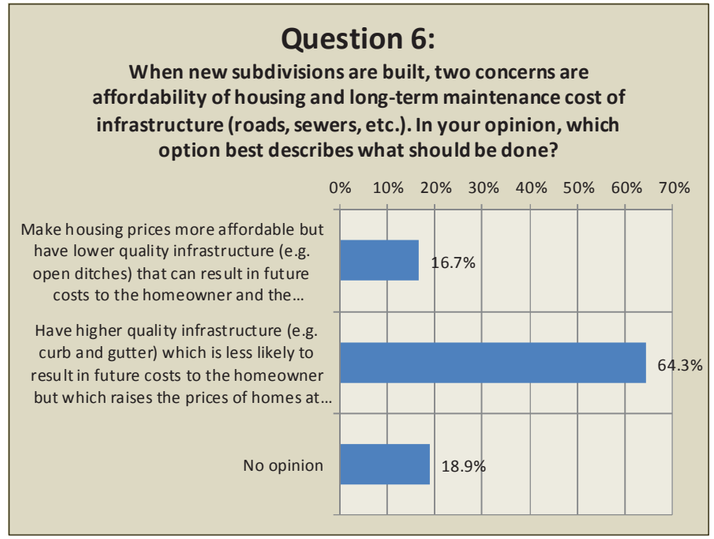






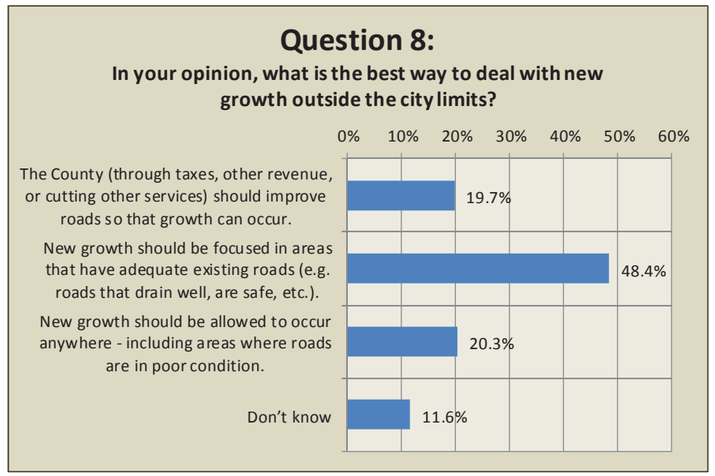


Feedback from the Helena Building Industry Association on the draft survey indicated concern that people often will answer a question one way if the question asks their preference, but they might answer differently once they understand the cost implications of offered choices. Several questions were changed to include those cost implications.



Although it would be expected that current home owners would be more concerned with long-term costs of roads than with short-term housing costs (Q6), the strong preference (64%) for keeping long-term costs manageable should bring some balance to the argument that adding regulations always increase housing costs. Not adding regulations to address long-term maintenance costs is a consequence as well.

As indicated in Chapter Four of this report, the growth that has occurred in past decades has resulted in serious problems for areas with gravel roads and paved roads that are falling apart. The County has no money to upgrade roads and developers can't be expected to fix them either. Responses to Question 8 indicate growing awareness that the County must do something to manage growth in this area, as opposed to raising taxes or just ignoring the problems.

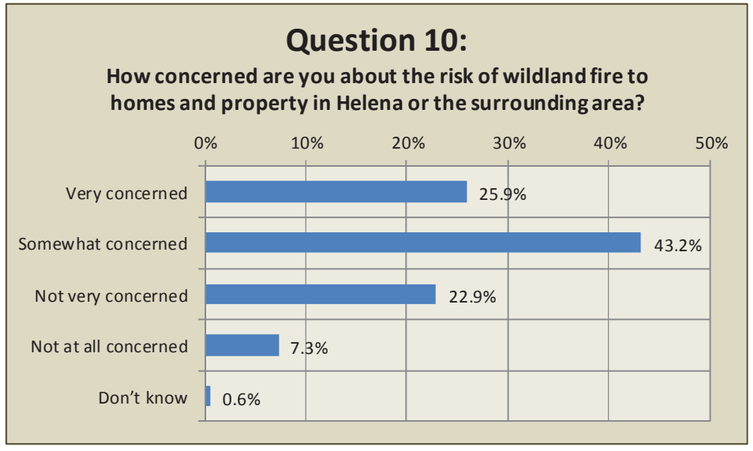


PUBLIC INPUT

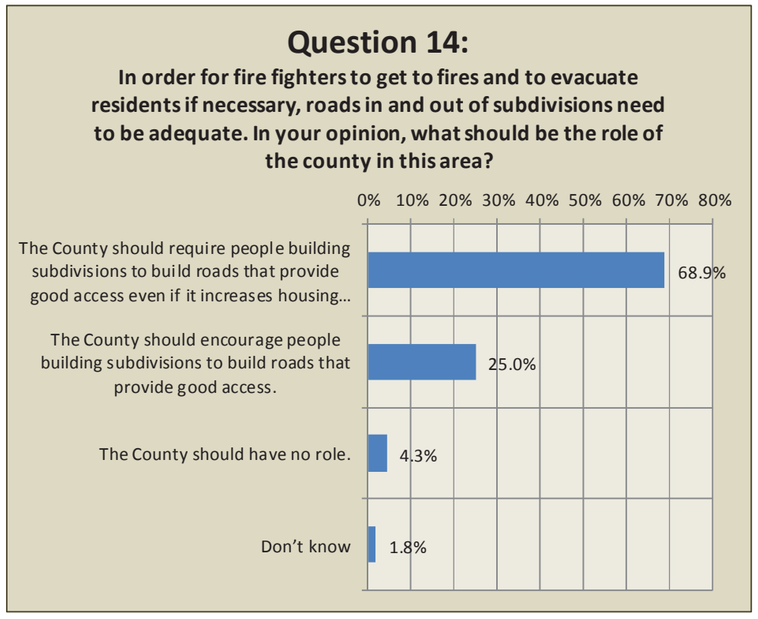
KEY POINT #4 — There is little consensus on most road issues, but people recognize the cost implications of requiring AND not requiring high quality road construction. There is growing recognition that the road issues must be addressed.

Questions on Fire Protection

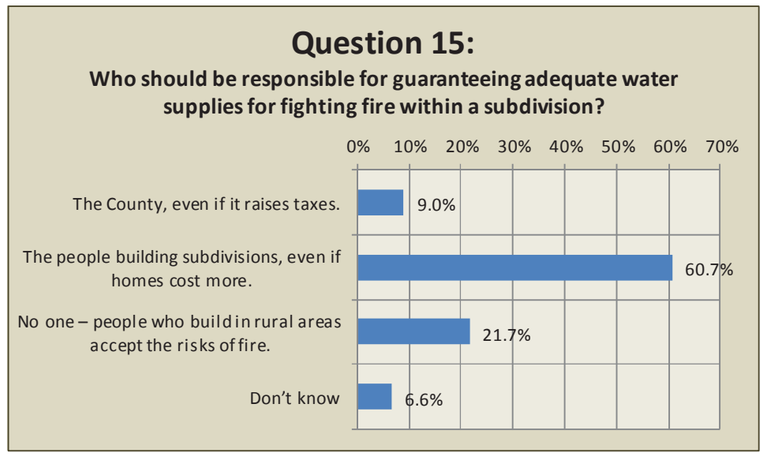
More than two-thirds of the survey respondents were concerned or very concerned about the risks of wildland fire to lives and property in Helena Valley, possibly due to the fact that more than half of the 3000 respondents either new someone who had evacuated in a fire or had evacuated themselves (Q10).



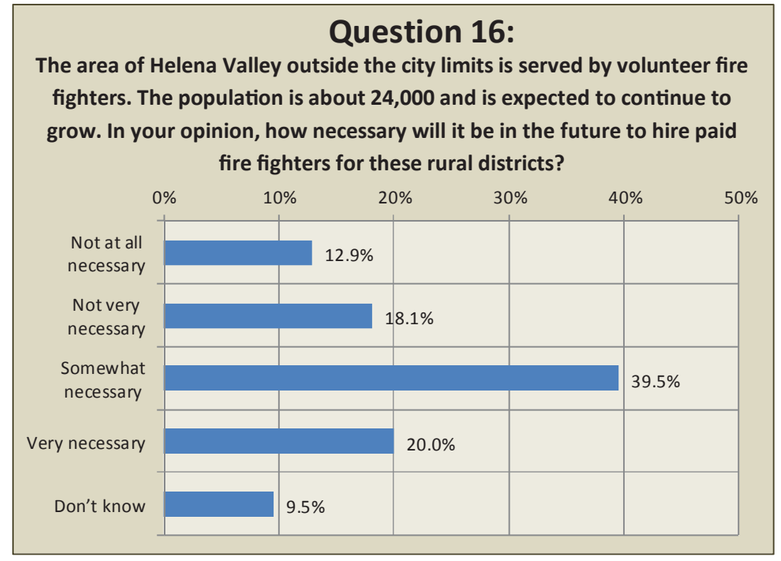
One of the strongest indicators of public support for intervention was in the area of providing safe access and evacuation routes for new subdivisions (Q14). More than two/thirds (68.9%) indicated that those developing new subdivisions should provide adequate roads for these purposes, even if it increases the cost of housing. A quarter (25.0%) of the respondents felt that just encouraging proper road construction was adequate, while less than five percent (4.3%) thought the County has no interest in this issue of road access.



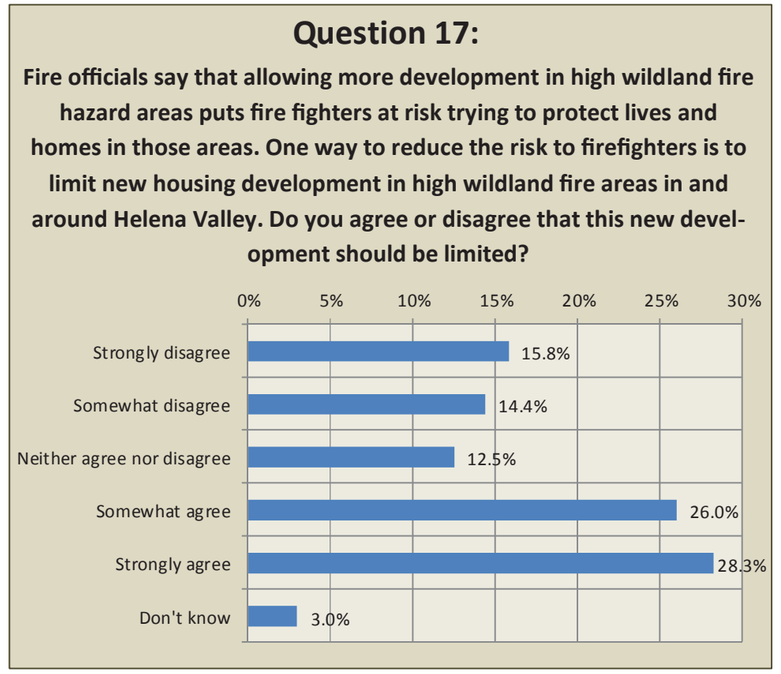
Survey respondents also heavily favored (60.7%) requirements for fire protection water sources being placed on those developing land, even if it increases housing costs (Q15). But a significant portion (21.7%) of the survey respondents believe that letting people take the risk of owning homes in fire-prone areas without water sources for fire-fighting was reasonable.



A strong majority of respondents (59.5%) thought that continued growth will eventually require paid fire fighting services as opposed to the current system of volunteer fire districts (Q16). Just under a third (31%) of respondents thought the volunteer system can be sustained into the future.



A similar percentage (54.3%) of those who completed the surveys felt that the County should take steps to limit growth in fire-prone areas, while just under a third (30.2%) thought that such development limitations are not appropriate (Q17).



PUBLIC INPUT

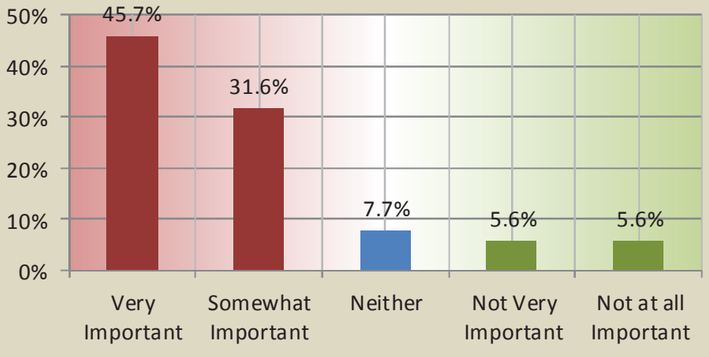
KEY POINT #5 — There was far more consensus on fire protection, with strong support for requirements on adequate access roads and water supplies for fire fighting. People see the problem of serving growth with a system based on volunteer fire fighters, and a majority support limiting development in high fire hazard areas.

Questions on Wastewater

One of the strongest support indications (90.8%) of the survey was in the area of continued groundwater quality monitoring. More than three-quarters (77.3%) of respondents also felt that community septic systems should be required to have professional maintenance like public sewer systems (Q19).

Question 19:

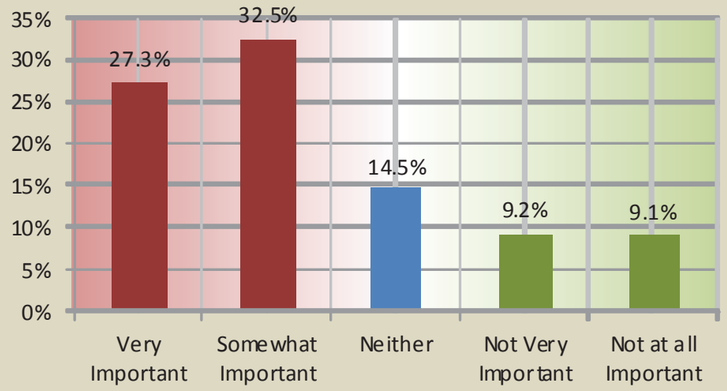
Require private community septic systems to meet similar "professional maintenance" standards as public sewer systems



A fairly strong majority (59.8%) also supported expanding availability of public sewers in Helena Valley (Q19). As would be expected, only a minority of respondents would support using tax dollars to fix malfunctioning community wastewater systems, but the fact that nearly a third (32.8%) would support public funding is significant.

Question 19:

Increase the availability of public sewers in the Helena Valley



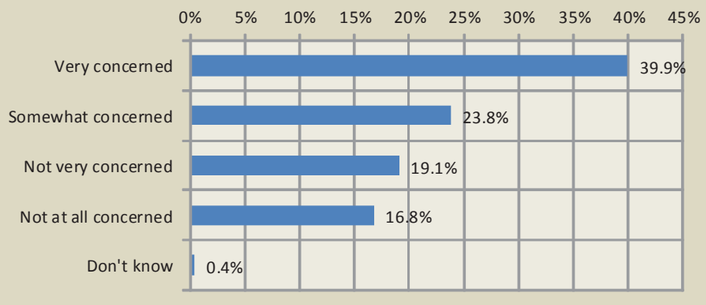
PUBLIC INPUT

KEY POINT #6 — Ninety percent of respondents support monitoring groundwater quality, and a strong majority think community wastewater system management needs attention. There is also support for extending public sewers.

Questions on Water Quality & Quantity

Question 21:

How concerned are you with the quality of your drinking water?

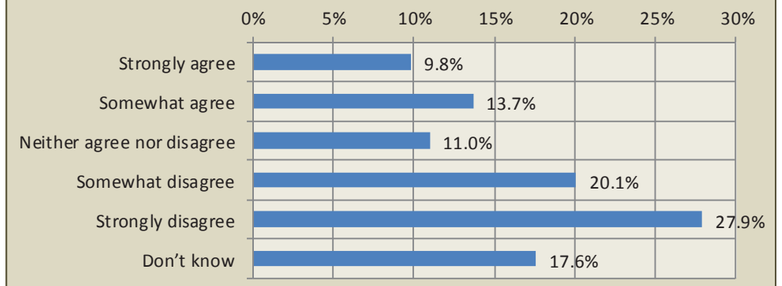


Just under two-thirds (63.7%) of the respondents are concerned about drinking water quality, while just over a third (35.9%) have little or no concern (Q21).

Significantly more respondents (48%) expressed an opinion that water shortages could be a problem in the future than those that thought there will be enough water to serve future growth (23.5%). A significant percentage either took no position (11%) or indicated their lack of knowledge (17.6%) on this question (Q24).

Question 24:

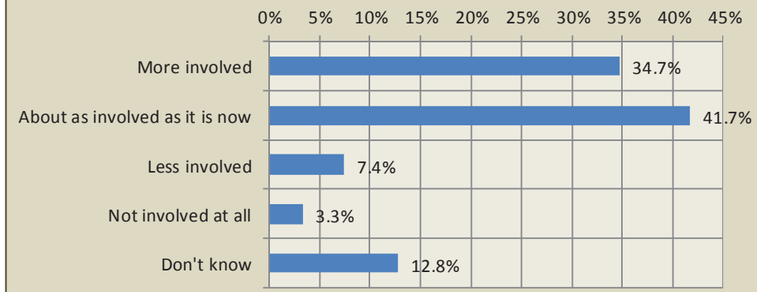
Do you agree or disagree that if new development continues at the current rate or faster there is enough water in Helena Valley to serve the Valley's needs?



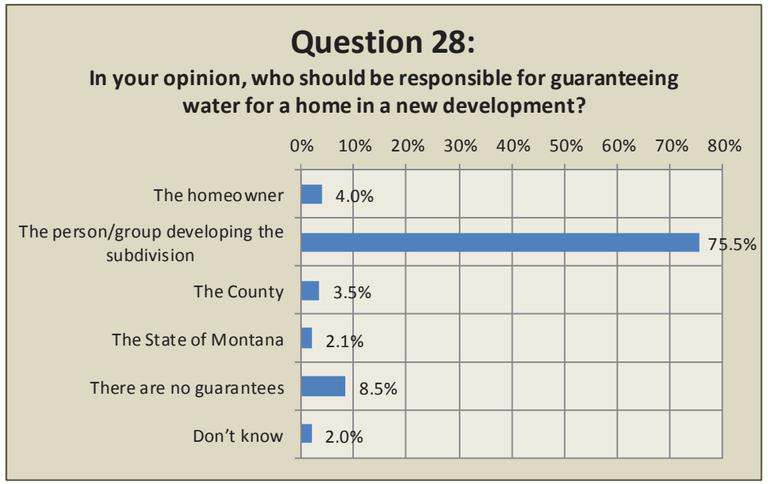
More than a third of survey respondents (34.7%) think the County should do more to protect water quality and quantity, while the largest response rate (41.7%) was for the County to keep on doing what is has been doing. A little over 10 percent thought the County is too involved in water issues or shouldn't be involved at all (Q27).

Question 27:

In terms of protecting water quantity and quality, do you thin Lewis and Clark County should be…



Another strongly supported (75.5%) concept in the survey is that those developing housing projects should be primarily responsible for guaranteeing water for the homes in them. No other option, including the homeowner, State, or County drew more than 5 percent support. Less than 10 percent (8.5%) of respondents felt that there is no guarantee of water availability (Q28).



PUBLIC INPUT

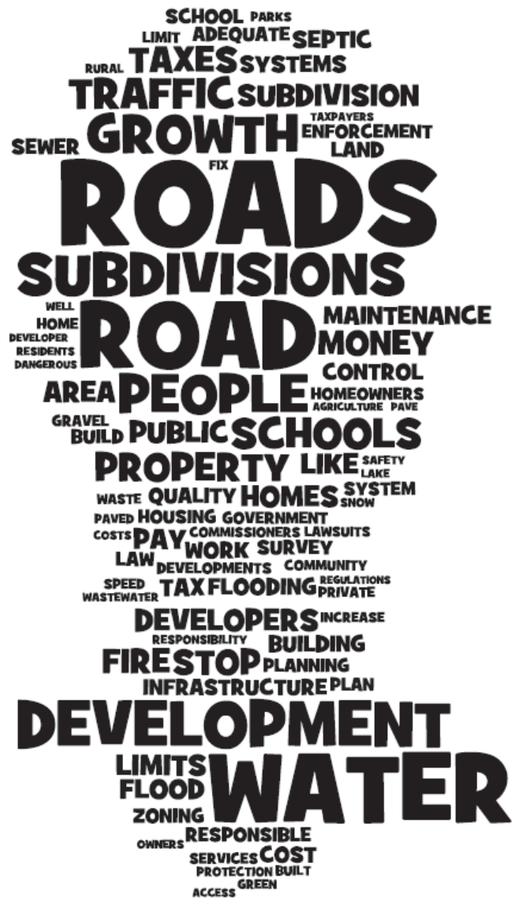
KEY POINT #7 — Even though a majority are concerned about drinking water quality and many are unsure of whether there will be future shortages, there is not strong support for more County involvement in water management. A strong majority do think developers should guarantee water supplies.

WRITTEN SURVEY COMMENTS

In addition to the tabulated survey questions just reported, about 1200 of the survey respondents submitted written comments on other issues or more in-depth answers related to the key issues in the informational pamphlet. All of the written comments were typed and processed to evaluate them both qualitatively and quantitatively. They are also posted online at the Community Development & Planning website for public review along with the complete tabulation of the survey questions.

A qualitative assessment was made of how important issues are using a "Word Cloud" analysis. This web-based tool measures how often a word is used in the complete text of written comments that included 25,000 words. Common words were eliminated to produce a visual graph of words related to land use policies, and the relative size of the words in the graphic indicate how often people mentioned those words in their written comments.

The Word Cloud assessment provided a visual clue as to what additional issues might be considered important. To get a more definitive indication of the relative importance of issues to survey respondents, all of the words appearing in the Word Cloud graphic were then counted in the actual text of the written comments to produce the following ranking of issues:



CH 7 FIGURE 1— Word Cloud analysis of written comments showing the frequency of words in the written comments as a visual indication of importance.

	QUANTITATIVE RESULTS OF WRITTEN COMMENTS (1200 Responses)			
	Number of Times a Word Was Mentioned			
1	Road/Roads	728		
2	Subdivision/Subdivisions	278		
3	Water/Wells	255		
4	Tax/Taxes	249		
5	Sewer/Septic/Wastewater/Systems	221		
6	Home/Housing	219		
7	Schools	210		
8	Development	172		
10	Flood/Flooding	142		
11	Limits	140		
12	Build/builds/building/built	136		
13	Developer/Developers	135		
14	Land/Property	135		
15	Plan/Planning	125		
16	Pay/Money/Cost	122		
17	Law/lawsuits	120		
18	Growth	107		
19	Traffic	83		
20	Fire	76		
21	Stop	74		
22	Work	66		
23	Protection/Safety/Dangerous	65		
24	Owners	59		
25	Control	57		
26	Government/Commissioners	56		
27	Waste	55		
28	Responsible/Responsibility	55		
29	Increase	52		
30	Public	51		
31	Parks/Green	50		
32	Residents/Community	46		
33	Citizen Survey	44		
34	Maintenance	42		
35	Quality	39		
36	Infrastructure	39		
37	Zoning	39		
38	Fix	37		
39	Adequate	36		
40	Enforcement	34		
41	Speed	34		
42	Homeowners	30		
43	Services	30		
44	Private	29		
45	Snow	28		
46	Access	26		

CH 7 FIGURE 2— Numerical analysis of written comments to provide an actual ranking of importance based on frequency of words.

PUBLIC OPEN HOUSES

The third opportunity for public input into the formulation of this report were a series of four open house meetings conducted in four locations throughout Helena Valley.

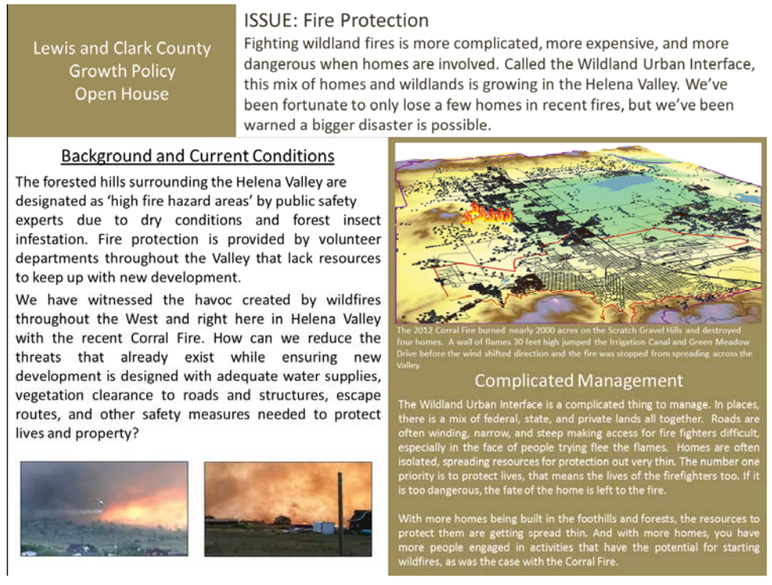
The first open house was held on May 13, 2014 at the Warren School off York Road in the Southeast Valley.

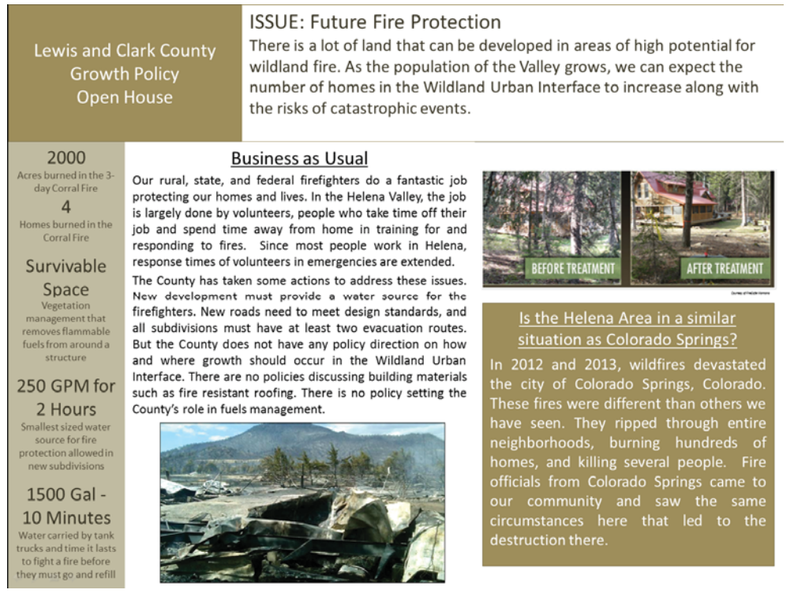
The second open house was held on May 15, 2014 at the Baxendale Fire Hall off Highway 12 in the West Side.

The third open house was held on May 20, 2014 at the West Valley Fire Station #2 on North Montana Avenue in the North Valley.

The fourth and final open house was held on May 22, 2014 at the West Valley Fire Station #1 on Forestvale Road in the West Central Valley.

These meetings were very sparsely attended with about 30 people showing up, but they provided an opportunity for the public to come and discuss the key issues and other issues with staff and Planning Board members. Members of the public who attended were also asked to write comments on the issues and options for addressing them, and those written comments were added to those submitted with the mailed survey responses and tabulated.





CH 7 FIGURE 3 A, & B — Graphic displays presented at Open House Meetings to provide background information on the key issues, implications for Helena Valley if current trends continue, and requests for ideas on possible policy responses.

URBAN STANDARDS BOUNDARY WORKSHOP

In the first week of February, 2015 a team of planning professionals from around the West came to Helena representing the American Planning Association's (APA) Community Planning Assistance Team. The team members volunteered a week of their time to help area residents look at the challenges and opportunities of accommodating future growth in higher density neighborhoods on public utilities with city services close to Helena.

On February 3 more than 40 representatives from multiple stakeholder groups participated in a day-long planning workshop exploring challenges and opportunities for accommodating future growth within the Helena Urban Standards Boundary (USB), the areas around Helena where the City has indicated it will extend water and sewer lines to serve neighborhoods and new development.

The workshop participants broke into small discussion groups to respond to the following questions posed by the volunteer planners who facilitated the group discussions:

Session 1: Issues

- What is one important issue about the USB that should be discussed?
- Other challenges and opportunities?
- What is or is not working well?

Session 2: Goals

- How do we improve what is working?
- How do we fix what is not working?
- What would you most like to see happen in the USB?
- What parts of the USB are well suited or not well suited for higher development densities?

Session 3: Priorities/Recommendations

- What should be done to accomplish [each table's] goals for the USB?
- Are there clear priorities among the things that are needed?

Answers to these questions were formulated by processing individual responses to look for common themes that emerged rather quickly. The planners identified the following views shared by the stakeholders:

Stakeholder Issues

- No holistic vision or plan for developing within the Urban Standards Boundary (USB)
- Lack of incentives for development within the USB
- Lack of disincentives for development outside of the USB in County
- Lack of communication and partnerships between City/County/Public
- Compatibility with existing development and future urban density considerations within the USB
- Affordability and funding mechanisms of infrastructure improvements
- No comprehensive zoning within the USB and lack of concurrent development and design standards
- Potential impacts to Fort Harrison

Stakeholder Goals

- Ground water protection
- Incentives for development
- Similar or compatible development standards in the City and County; consistent rules, procedures and interpretations of the rules
- Promote partnerships between the City, County, and private parties
- Affordable extensions of City services for homeowners and developers
- Equitable distribution and allocation of costs
- Predictability of zoning options
- Guide development with the principles of "smart growth"

- Conform developers' vision and the regulations into viable projects
- Streamline development review process; establish effective, clear and balanced development regulations
- Educate community on the real costs of development, the uses of taxes, and other costs
- Revise State Statutes to better enable good planning and annexation initiatives

The Community Planning Assistance Team processed the issues and goals of the stakeholders and reviewed research compiled by City and County staff. After processing the information as a group, the Team came up with the following recommendations:

1. The City and County need Joint Planning Efforts to establish a common vision and plan for the area;
2. In planning for the area we need to avoid letting Perfection be the Enemy of the Good;
3. The City and County need to create a System of Incentives and Disincentives that causes a majority of future growth to occur in the USB;
4. The City and County need Seamless Infrastructure Standards for all development occurring in that area;
5. Infrastructure Funding is needed and the City and County will need to take some financial risks for a plan to succeed;
6. Affordable Housing needs should be anticipated with the increased infrastructure costs;
7. Public Education and Outreach can help build support for an ambitious plan to steer growth to the USB; and,
8. It is critically important we Act Now to change the pattern of unmanaged growth.

URBAN STANDARDS BOUNDARY WORKSHOP

KEY POINT #8 — A workshop of stakeholders and regional planning experts identified the pressing need for cooperation between the City and County on facilitating growth in the areas around Helena where public utilities are available.

HELENA VALLEY AREA PLAN WORKSHOP

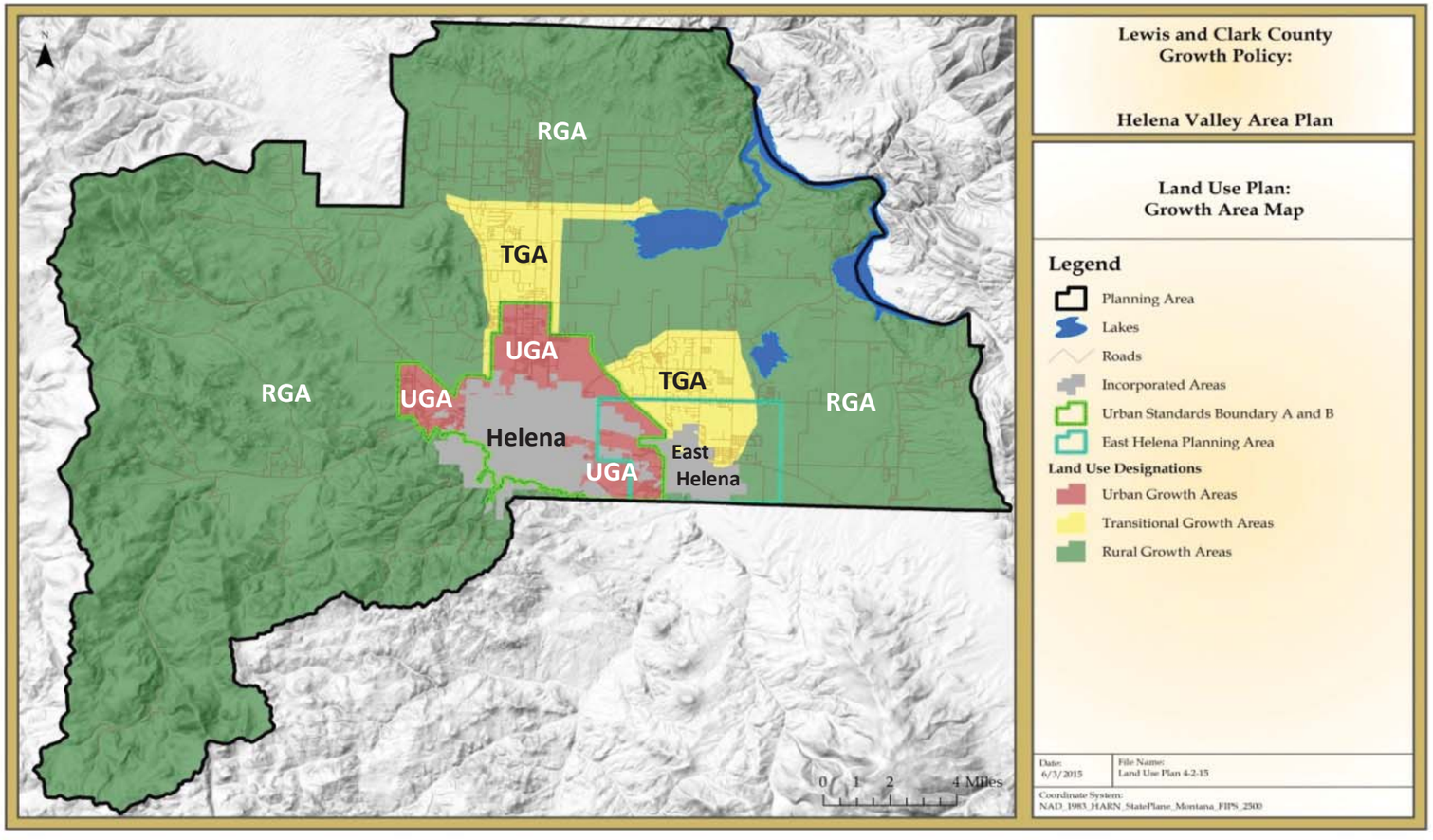
In September of 2015 the 13 stakeholder groups and other participants were again contacted to participate in a planning workshop to review and comment on a proposed framework for a new growth management program for Helena Valley.

Participants reviewed a map showing three designated growth management areas (Fig. 4 below):

Urban Growth Areas (UGAs) — The area within the Helena Urban Standards Boundary where public utilities are available to support high density development and where development constraints are the most limited.

Rural Growth Areas (RGAs) — Areas outside the Helena Valley Aquifer where the development constraints of water availability, road conditions, and rural fire protection systems warrant low density development.

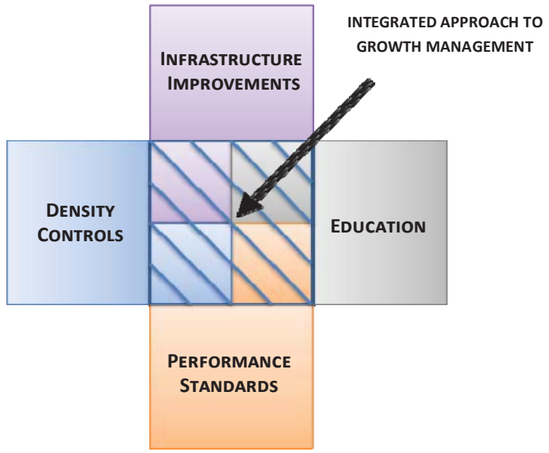
Transitional Growth Areas (TGAs) — Areas within the Valley Aquifer that have adequate water and better roads to support suburban densities but lack public utilities to support urban densities.



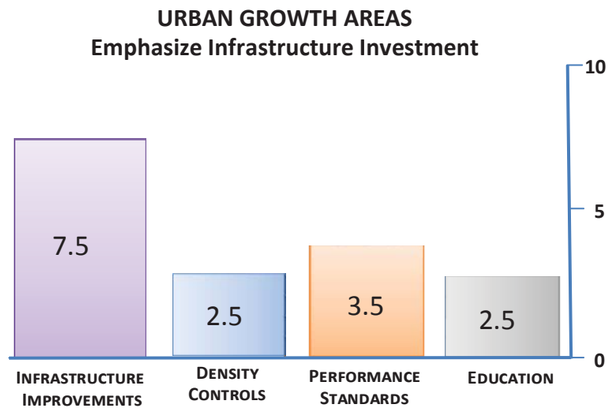
CH 7 FIGURE 4— Draft Future Land Use Plan showing Urban Growth Areas (UGA) where public utilities are available for high density growth, Rural Growth Areas (RGA) where densities should be limited based on development constraints, and Transitional Growth Areas (TGA) where a mix of densities can be accommodated.

Participants also reviewed and responded to a proposed mix of growth management policies in the draft Helena Valley Area Plan for the three designated growth management areas. In order to effectively manage future growth in Helena Valley, the draft Future Land Use Plan proposes that a combination of infrastructure investment, density controls, improved performance standards, and education measures be developed and applied to each of the proposed growth management areas.

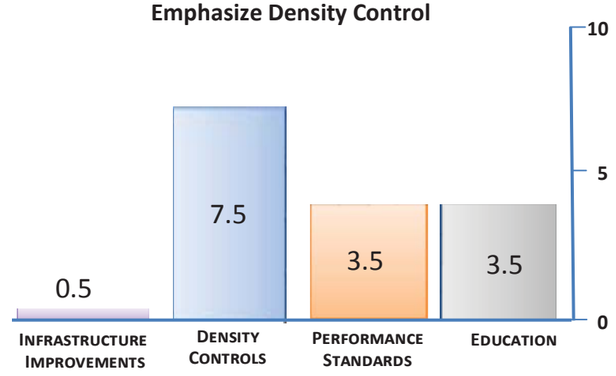
Rather than relying almost exclusively on performance standards in the Subdivision Regulations as has been the case in the past, the proposed new growth management program for Helena Valley will contain a balanced, integrated mix of all four policy options as illustrated below.



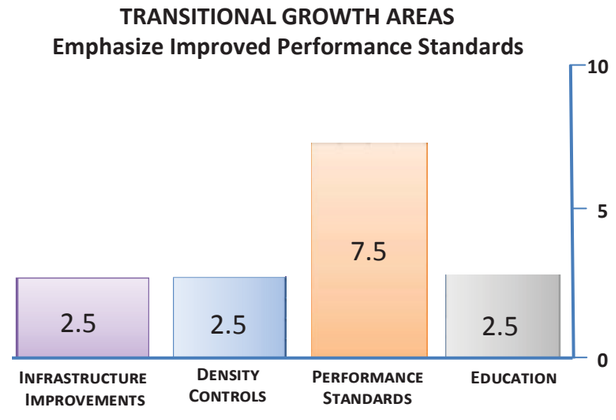
Urban Growth Area Priorities — The proposed policy emphasis within the UGAs is for infrastructure improvements to support high density development and the majority of future growth that will happen in Helena Valley, with the numbers below indicating the relative priority of each policy option measured on a scale of 1 to 10.



Rural Growth Area Priorities — The proposed policy emphasis within RGAs is density control in some form of zoning that limits high density development per the constraints of water, roads, and rural fire protection, with the numbers below indicating the relative priority of each policy option measured on a scale of 1 to 10.



Transitional Growth Areas — The proposed policy emphasis in TGAs is on improving performance standards to address the development constraints and densities with the numbers below indicating the relative priority of each policy option measured on a scale of 1 to 10.



Stakeholder Input on the Proposed Policy Mix

Three discussion groups were facilitated by members of the City-County Planning Board and were assisted by staff members of the City and County Community Development Departments. Stakeholder groups represented in the discussion groups included members of the Helena Building Industry Association, Helena Association of Realtors, the Valley Flood Committee, the Helena Valley Irrigation District, Helena School District, West Valley Fire District, Conservation District, Regional Airport Authority, along with individual developers.

This diverse group of stakeholders generally supported the draft Future Land Use Map designations of Urban, Rural, and Transitional Growth Areas as a new framework for growth management in Helena Valley. For the plan to succeed, however, they saw the need to increase the emphasis on infrastructure investment in all three growth management areas.

As a result of the stakeholder input, County staff revised the draft priorities to increase the relative importance of infrastructure investment in the Urban Growth Areas slightly from 7.5 to 8.5 (a strong majority of two of three discussion groups favored increasing it there).

The proposed priority of infrastructure investment in the Rural Growth Areas was also increased from 0.5 to 2.5 based on the input of stakeholders (a strong majority of all three discussion groups favored increasing it there). Although stakeholders recognized the greater importance of infrastructure in urban growth areas, they saw the need for safety improvements on roads in rural areas as also being important.

Similarly, a strong majority of stakeholders in three independent discussion groups came to the conclusion that infrastructure investment in the Transitional Growth Areas should also be increased. As a result, staff doubled the relative priority of infrastructure from 2.5 to 5.0 on a scale of 1 to 10.

PUBLIC INPUT

KEY POINT #9 — Stakeholder input in September of 2015 led to increased emphasis on infrastructure investment in all three proposed growth management areas.

Stakeholder Input on Proposed Policy Strategies

In addition to the proposed mix of policy options in the three designated growth management areas, stakeholders also reviewed and responded to a set of specific policy strategies needed to accomplish the growth management goals of the Helena Valley Area Plan. In order to gain measureable input on the draft policy strategies for the four policy options to be applied to the Urban, Rural, and Transitional growth management areas, stakeholders were asked to indicate whether they thought the County should have a green light to go ahead with each proposed policy strategy. A yellow light response indicated approval to move ahead cautiously. A red light response on each policy strategy indicated that stakeholders thought the County should stop consideration of including it in the Helena Valley Area Plan. Stakeholder responses are indicated in the lists of policy strategies that follow below.

Policy Option #1: Investment in infrastructure to overcome the development constraints

The proposed policy strategies for Infrastructure Investment to accommodate future growth were:

Infrastructure Investment Strategy #1: Fund Infrastructure Improvements to overcome development constraints throughout Helena Valley.

(Go Ahead - 4 Proceed w/ Caution - 7 Stop! - 6)

Infrastructure Investment Strategy #2: Fund infrastructure improvements only in areas of the Valley with the least development constraints.

(Go Ahead - 9 Proceed w/ Caution - 7 Stop! - 1)

Infrastructure Investment Strategy #3: Fund infrastructure improvements with a combination of private sources, public sources, and public-private partnerships.

(Go Ahead – 12 Proceed w/ Caution - 3 Stop! - 2)

Infrastructure Investment Strategy #4: Consider the cost-effectiveness and the efficiency at serving the public when planning and building infrastructure improvements.

(Go Ahead - 11 Proceed w/ Caution - 5 Stop! - 1)

Infrastructure Investment Strategy #5: Target public funding of infrastructure in areas where growth is planned, rather than following growth.

(Go Ahead - 12 Proceed w/ Caution - 4 Stop! - 1)

Policy Option #2: Land use controls to establish densities based on development constraints

The proposed policy strategies for Density Controls to accommodate future growth were:

Density Control Strategy #1: Adopt a conventional zoning ordinance that limits densities per the constraints and controls all uses.

(Go Ahead - 1 Proceed w/ Caution - 5 **Stop! - 10**)

Density Control Strategy #2: Adopt a non-conventional zoning ordinance that only limits densities.

(Go Ahead - 2 Proceed w/ Caution - 11 Stop! - 3)

Density Control Strategy #3: Adopt a hybrid zoning ordinance that limits densities and includes some controls of uses and construction.

(Go Ahead - 8 Proceed w/ Caution - 7 Stop! - 1)

Density Control Strategy #4: Adopt overlay zones that are focused on individual development constraints (e.g., limited water availability).

(Go Ahead - 8 Proceed w/ Caution - 8 Stop! - 0)

Density Control Strategy #5: Adopt zoning within the Helena Urban Standards Boundary that is compatible with the City of Helena's zoning.

(Go Ahead - 7 Proceed w/ Caution - 7 Stop! - 2)

Density Control Strategy #6: Adopt "urban reserve areas" for large undeveloped portions of the Urban Standards Boundary to allow limited development in the short term while preserving such areas for future annexations with planned, high density neighborhoods.

(Go Ahead - 8 Proceed w/ Caution - 4 Stop! - 4)

Density Control Strategy #7: Adopt zoning models in the Urban, Transitional, and Rural Growth Areas that best address development constraints and opportunities in each growth area (i.e., use the 3 different models in different areas).

(Go Ahead - 6 Proceed w/ Caution - 6 Stop! - 4)

Option #3: Improved performance standards to address the development constraints

The proposed policy strategies for Improved Performance Standards to accommodate future growth were:

Improved Performance Strategy #1: Revise existing regulations or adopt new ones to better address the constraints to development.

(Go Ahead - 14 Proceed w/ Caution - 2 Stop! - 0)

Improved Performance Strategy #2: Revise existing regulations or adopt new ones to reflect the positive effects of other growth management tools (i.e., lower the performance standards requirements of the Subdivision Regulations if zoning better addresses a development constraint).

(Go Ahead - 10 Proceed w/ Caution - 6 Stop! - 0)

Improved Performance Strategy #3: Overhaul the existing Part 1 zoning districts to make them consistent with the Growth Policy and efficient to administer.

(Go Ahead - 9 Proceed w/ Caution - 6 Stop! - 0)

Improved Performance Strategy #4: Allow Planned Unit Developments (PUDs) that include master planning, rezoning, and subdivision review as a combined process to provide a streamlined process for plans that address the development constraints.

(Go Ahead - 12 Proceed w/ Caution - 2 Stop! - 1)

Improved Performance Strategy #5: Pursue rezoning apart from PUDs if constraints conditions change in an area (i.e., no master plan or subdivision application needed).

(Go Ahead - 6 Proceed w/ Caution - 5 Stop! - 3)

Policy Option #4: Education to alert builders and home buyers to the development constraints

And finally, the proposed policy strategies for Education to accommodate future growth were:

Education Strategy #1: Conduct additional research needed to address the constraints to development.

(Go Ahead - 7 Proceed w/ Caution - 7 Stop! - 1)

Education Strategy #2: Develop education programs that address the constraints to development.

(Go Ahead - 10 Proceed w/ Caution - 5 Stop! - 0)

Education Strategy #3: Focus education programs on individuals and organizations directly involved in the development process and those impacted by the constraints.

(Go Ahead - 10 Proceed w/ Caution - 3 Stop! - 2)

Qualifications on Stakeholder Event Input

Although the number of stakeholders that participated in the workshop was limited, they represented a diverse set of citizen interests and had been involved in the public participation process from its inception. Their input is a strong indicator of positive direction for the draft Helena Valley Area Plan.

PUBLIC INPUT

KEY POINT #10 — Stakeholder input in September of 2015 indicated general support for the proposed policy strategies with the exception of conventional zoning.

Helena Building Industry Association Input

On September 1, 2015, the Government Affairs Committee of the Helena Building Industry Association (HBIA) met to formulate a response to the Key Issues Report that had been sent to them in February for review and comment. On behalf of HBIA, the Government Affairs Committee communicated the following comments and recommendations:

- Extend water services in phases to the areas where development is best suited.
- Build a new sewage treatment plant in the lowest part of the Valley.
- Control/direct development by creating infrastructure in areas best suited for development.
- Make road standards more flexible with different improvement levels for different areas.
- Provide incentives for home owner mitigation of fire hazards and use alternative methods not limited by water supplies.
- Leave flood controls to DNRC and FEMA, but develop a Valley-wide stormwater plan.
- Fund infrastructure improvements with state and federal grants and low interest loans. Lobby the Legislature to increase the gas tax to fund infrastructure.
- Adopt consistent County zoning to avoid using Subdivision Regulations for zoning purposes.
- Work with builders and home buyers to address education on the development constraints.

PUBLIC INPUT

KEY POINT #11 — The Helena Building Industry Association, a key stakeholder group, provided additional comments and recommendations for the Helena Valley Area Plan.

ADDITIONAL OPPORTUNITIES FOR PUBLIC INPUT

Research done by staff and the consultants, input from stakeholders, citizen survey results, and conversations at the open house meetings and planning workshop have generated the content and results of this Growth Policy Update report. The process to date and this product have focused on the key issues facing citizens of the Helena Valley Planning Area in light of past development, current trends, and future growth projections.

This report is intended to serve as a platform for determining a course forward to revise the Lewis & Clark County Growth Policy for the Helena Valley Planning Area to address the key issues with effective policies and programs. Chapter 8 of the report outlines five options that are available for consideration.

From the beginning of this project, every attempt has been made to solicit broad public participation and to incorporate the results of that input along with the research on the key issues. If people are not concerned about water availability or think that the State of Montana has the issue under control, there is little point in expending time, effort, and money developing plans and programs to ensure that subdivisions have reliable water supplies and don't affect neighboring wells.

For each of the key issues discussed in this report, there needs to be public buy-in to the concerns and proposed solutions. Without that support, the policies won't be enacted or programs implemented and the County will continue with "business as usual."

At the point that the Planning Board and County Commissioners are convinced that a set of policy options to address the key issues should be pursued, actual amendments to the 2004 Growth Policy will be reviewed and processed. Volume II of this Growth Policy update contains the proposed amendments in the form of a proposed Helena Valley Area Plan.

Under Montana law, the Planning Board must hold a public hearing with advance notice and then adopt a resolution of recommendations on the adoption or update of a growth policy. Once that public hearing is conducted and the Planning Board adopts a resolution, the draft update of the Growth Policy goes to the County Commissioners for their review and decision. At both of these stages, public comment on the draft plan and proposed policy direction will be considered.

Upon adoption of an amended Growth Policy, the planning process will move to the implementation stage, and there will be additional opportunities for public input as each of the policy strategies contained in the Helena Valley Area Plan is worked into a specific program of infrastructure investment, density controls, improved performance standards, and education.

The goal from the beginning has been to develop a growth management plan that meets the needs and goals of the citizens of Helena Valley, and the public input received during this process is critical to the success of that plan.

SUMMARY OF GROWTH POLICY ISSUES

The Helena Valley has been growing at double digit rates per decade since the 1970s. With surprising accuracy, the 2004 Lewis and Clark County Growth Policy projected the County's population would grow to 63,316 people by 2010. According to the US Census Bureau, that projection was just 79 people off the actual population growth that happened in that time frame. The majority of growth was projected to occur in the Helena Valley outside of the cities, which has also proven to be accurate.

The growth that occurred in the past was largely unplanned. To better manage projected growth, the 2004 Growth Policy identified three future land use types largely based off existing land use patterns. These land use designations, Urban Areas, Transitional Areas, and Rural Areas were intended to guide a range of types and intensities of new growth into specific locations. High density development would happen in areas close to public utilities and with adequate roads to service that dense housing. Low density would occur in rural parts of the Valley that lacked such facilities and services. A mix of densities would play out in transitional areas, and public utilities and services would be extended to those transitional areas over time.

Unfortunately, mechanisms to guide growth based on the Future Land Use Map in the 2004 Growth Policy were never implemented. Growth did not occur according to the plan. It continued the trend established over the previous 30 years, spreading throughout the Helena Valley in densities and locations contradictory to the plan.

POLICY OPTIONS

KEY POINT #1 — The recommendations of the 2004 Growth Policy for Helena Valley have had little if any effect on the development that occurred here over the past decade.

In 2010, the population of the Helena Valley Planning Area outside of the cities of Helena and East Helena was 29,238 people, an increase of 4,600 people since 2000. In 20 years, the population of the planning area is projected to be 39,000 or an additional 10,000 people. Under the current planning paradigm, the majority of growth will likely occur in the five Census Designated Places of the Helena Valley, outside of the Cities of Helena and East Helena as happened in the prior two decades.

In 2014, 10 years after adopting the 2004 Growth Policy, it is clear the current planning paradigm is failing. The following five issues represent the greatest constraints we face to safely accommodate the projected growth.

POLICY OPTIONS

KEY POINT #2 — There are five major constraints to new development that must be addressed in the Growth Policy to ensure that growth can continue in an orderly and safe manner.

DEVELOPMENT CONSTRAINT #1 - WATER AVAILABILITY

Since the 2004 Growth Policy, substantial research has been completed on groundwater quantity and quality in the Helena Valley. We now know there are three aquifer systems with the ability to support varying levels of growth. Development in the bedrock and tertiary aquifers is constrained by water availability. Water is spotty, and the aquifers do not recharge well.

Too much development over these aquifers can drop the water table, causing wells to go dry. Many dense subdivisions over an aquifer with limited recharge can cause the water table to drop over time, as has happened in portions of the North Hills. If even a single subdivision is located over an aquifer with very limited recharge, like the Emerald Ridge Subdivision in the eastern portion of Helena Valley, the water table may start to drop as soon as the wells go in. These issues were hardly discussed in the 2004 Growth Policy. Today they are one of the planning area's most pressing development constraints.

DEVELOPMENT CONSTRAINT #2 - WASTEWATER

The 2004 Growth Policy identified the need for rehabilitation of several large malfunctioning non-municipal lagoon systems and called for future expansion of those systems to serve high-density development around them. It also set a policy direction of low density development in other parts of Helena Valley on individual septic systems.

Most of those large non-municipal lagoon systems have been upgraded or eliminated. Instead of expanding those systems to serve additional high-density development in the Valley, however, there has been a proliferation of scattered new non-municipal wastewater systems serving high-density subdivisions. The current growth policy allows their use in any land use designation, from urban to rural regardless of constraints. The allowance for large non-municipal wastewater systems in areas with high groundwater should be reconsidered, as well as in rural areas that lack other public facilities and services. Where they are allowed, there should be effective oversight to ensure that all wastewater disposal systems are properly installed, operated, and maintained.

DEVELOPMENT CONSTRAINT #3 - ROADS

The majority of the roads in the Helena Valley Planning Area outside the cities are gravel, and have very limited capacity to accommodate additional growth. There are also some paved roads that are falling apart and need full reconstruction.

When a subdivision is built, the subdivider is on the hook to pay for a portion of the upgrades to such roads, but there is no plan for where the remaining funds will come from. Upgrading a particular road where a subdivision is proposed may or may not be a priority for the County when compared with other road improvement needs. As a result, the development goes in, but the needed road improvements must wait until other funding becomes available, which could be years or even decades later.

At the end of the day, new taxes generated by far flung developments do not pay the costs associated with quality road improvements and maintenance. As a result, we have roads all over the planning area with too much traffic that are built below standards and not receiving adequate maintenance.

DEVELOPMENT CONSTRAINT #4 - FIRE PROTECTION

In the core of the Helena Valley, 24,000 people are served by 142 emergency water sources of varying capacity and reliability. In the City of Helena, 29,000 people are served by 1,630 high-capacity fire hydrants. With an additional 10,000 people projected in the planning area, the transition from rural to suburban and urban densities will continue. The densities in the County will increasingly become more like a city, but will be served by fire-fighting systems designed for rural densities.

Wildland fire is also a major concern within the planning area. Fuel hazards in specific areas are considered high to severe. Managing the fuels on private lands is largely left to the individual landowner, but the cost of fighting fires is a burden that must be supported financially by the public. As more development occurs in these areas of high fuel hazards, the cost of fighting fires, the likelihood of fires, and the risks to life and property will increase.

DEVELOPMENT CONSTRAINT #5 - FLOODING

Floods happen. Creeks and rivers periodically spill their banks, inundating the surrounding lands with water. Ten Mile Creek, Silver Creek, and Prickly Pear Creek are the primary flood hazards in the Helena Valley Planning Area. Development north of Ten Mile Creek was built in the floodplain, and significant damages to property have occurred in this area in the past. Millions of dollars need to be invested in this area just to reduce damage caused by flooding, but that investment will not prevent it from happening. It would be much cheaper to avoid or at least minimize development in the floodplain in the first place. The higher the density in such areas, the worse the costs and consequences.

POLICY OPTIONS

KEY POINT #3 — We need a new way of doing the business of managing growth that addresses future costs and consequences of ignoring the development constraints.

THE NEED FOR A NEW PLANNING PARADIGM

If we continue with the business-as-usual planning paradigm, we can expect more of the same. Ignoring development constraints will cause some water supplies to dwindle or dry up. Wastewater facilities will continue to be a source of pollution and trouble for users. More traffic will be forced onto substandard roads, causing public health and safety risks, and increasing maintenance costs. The capacity of rural fire districts to respond to emergencies will be stretched to the limit, and wildland fires will threaten more homes. Flooding will continue to be an issue, particularly in the Ten Mile Creek drainage.

The business-as-usual planning paradigm does not adequately acknowledge the constraints to development in the Helena Valley Planning Area. In fact, it perpetuates these problems. If we are going to successfully accommodate an additional 10,000 people and another 4000 homes in hundreds of subdivisions in the planning area, we cannot continue to ignore the development constraints.

What will the future costs be to build public water systems to deliver water to homes and neighborhoods with depleted aquifers? What will the costs be to continually upgrade failing wastewater treatment facilities that aren't properly managed or maintained? What will the costs be to pay to upgrade gravel and poorly built paved roads to county standards and to protect more lives and homes from wildfires?

We need to adopt a planning paradigm and develop programs that recognize the constraints to development in the Helena Valley Planning Area. That new way of doing business can actually encourage development and even facilitate growth in areas without such constraints.

There are at least five options for accomplishing these goals available to the County.

POLICY OPTIONS FOR THE NEW PLANNING PARADIGM

Option #1 : Public investment in infrastructure to overcome the development constraints

Using targeted investment in public infrastructure could be one way to overcome development constraints. Extending existing public water lines or developing new public water source wells in the Valley floor could support high density development in areas limited by water supply at higher elevations. Public sewers likewise could be used to support development in areas with failing wastewater systems or shallow groundwater. Publicly supported Special Improvement Districts could be used as a mechanism to fund operation, maintenance, and long-term replacements of existing community wastewater treatment facilities.

Areas constrained by gravel or substandard roads could also be targeted for road improvements through Special Improvement Districts. In areas of higher density, water districts could be formed or existing ones expanded to provide adequate water supplies for firefighting. Grants could also be used to help landowners thin and treat fuels in areas with high and high-to-severe fuel hazards.

Public improvements to infrastructure are usually paid for in one or more of the following ways:

- General obligation bonds or revenue bonds paid by general taxpayers
- Special Improvement Districts assessments paid by users in those districts
- Impact fees paid by builders of new subdivisions and housing
- State and federal grants
- State and federal low-interest loans
- Federal transportation funding

Developing Capital Improvement Plans for infrastructure are often critical steps in receiving any state or federal aid. They are helpful in prioritizing projects and budgeting for improvements over time. Finally, they show where funds needed to supplement impact fees for public improvements will come from (e.g., proportional shares paid by developers for off-site road improvements).

Public investment in infrastructure could be applied in two scenarios. Scenario one is targeting infrastructure improvements to solve existing problems. This scenario often comes about due to a lack of community planning resulting in widespread failures of water and/or wastewater systems.

A good example of the first scenario is funding upgrades to community wastewater systems that are functioning below health standards, polluting ground and surface water as was the case with the Ten Mile Creek/Pleasant Valley Estates lagoon system. Public investment could upgrade such facilities to meet current standards, eliminating the sources of pollution and benefiting not only the users of the systems but the general public through improved water quality. A downside of scenario one is the costs to fix problems once they are present can be beyond the abilities of the users to fund. Also, shifting the burden of the costs from the users to the general public is not always politically possible.

The second scenario is where the community plans ahead and invests in infrastructure for areas where growth is expected and desired. A good example of scenario two is the 2005 North Helena Valley Infrastructure Study. This study identified infrastructure needed to bring the existing infrastructure up to current standards to accommodate growth in the area. The 2005 study specifically addressed the roads, water, and sewer facilities that could support future, high-density growth. The public investment necessary to implement this plan was estimated to be in the tens of millions of dollars.

The downsides of scenario two are that public investments in infrastructure to accommodate future growth is very expensive and carries some level of risk. There is the risk that the projected growth won't happen and needed taxes from new development won't be available to pay for infrastructure bonds. There is also the risk that growth doesn't happen where the public investments are made. Given the past and projected growth rates of the Helena Valley, we can assume that growth will happen. However, since there are no land use controls in place to effectively guide growth, we cannot be assured growth will happen in specific areas where the County might invest in infrastructure to accommodate growth in a more coordinated fashion. Public support for such investment can also be lacking politically.

POLICY OPTIONS

KEY POINT #4 — Public investment in water and wastewater systems, road improvements, and fire services could address the development constraints, but it is expensive and there are risks to the public investors.

Option #2 : Land use controls to establish densities based on development constraints

Density is a root problem for every one of the development constraints. Too many homes in too small an area over the bedrock or tertiary aquifers can result in wells going dry. Areas with shallow groundwater are susceptible to contamination from too many wastewater treatment systems or from improperly functioning community systems. Typical gravel roads can only accommodate about 40 homes before the traffic exceeds design standards and maintenance becomes a problem.

Areas with urban densities served by rural fire districts have a limited supply of water, few supply locations, and limited manpower. As more homes are built in areas with high and high-to-severe fuels hazards, the cost of fighting fires increases as well as the risk to lives and property. Higher densities in areas prone to flooding are expensive to mitigate and also put more lives and property at risk.

Many of the constraints we face in the Helena Valley Planning Area can be overcome by simply guiding growth to areas without such constraints. This can be done through zoning. For example, the Scratchgravel Hills area has a density of roughly 1 dwelling unit per 10 acres, while parts of the North Hills have hundreds of lots as small as 7,000 to 20,000 square feet. Even though both aquifers have limited recharge, there is no sign of groundwater depletion in the Scratchgravel Hills due to the low density of housing built there in recent decades. But if growth continues at such high density in portions of the North Hills, as many as 50 percent of the wells are expected to go dry. Zoning according to the constraint of limited water availability in an area can prevent such problems.

Another example of using zoning to overcome constraints is on roads. The number of homes that can be built on a gravel road is limited before traffic on the road surpasses design standards. Limiting density in areas with gravel roads to levels the roads can accommodate without improvements can address the constraint, without significant capital improvements and high costs to either the public or the private sector.

POLICY OPTIONS

KEY POINT #5 — Zoning can control development density according to the constraints, but it can increase housing costs and reduce construction flexibility.

A downside to zoning is it can lead to higher home prices. A significant contribution to housing costs is the price of land. A house on five acres will likely cost more than the same house on a 20,000 square foot lot. Therefore, zoning must be done comprehensively and carefully. As areas with constraints are zoned in order to address those constraints, areas without constraints need to be zoned to provide for a range of intensities including suburban and urban densities. Clearly there is a market for all development densities in the Helena Valley. But there should be careful analysis of the suitability of land to support the type of development that is proposed. That type of analysis has been consistently absent in terms of the issues documented in this report.

Another issue with zoning is it potentially being too rigid. Builders need flexibility to fit subdivisions to the land and make projects work in the market. Zoning can be adopted that allows such flexibility. Neighborhood planning can also be used to evaluate constraints on a site-specific basis and come up with a plan to overcome those constraints. This would provide builders with the ability to change the zoning in a way that can make the project financially successful while addressing the development constraints. If higher density is needed to support private investment in roads and water systems, the zoning can be changed based on the plan for that investment. Right now, we build first and plan for needed infrastructure later, if at all.

A third issue with zoning is it adds another layer of regulatory complexity. With zoning in place, however, other regulations could be loosened or eliminated. Currently, the County uses the subdivision regulations as the primary tool to mitigate impacts of development. As a result, the subdivision regulations cover many issues normally addressed by zoning and are not an efficient means to deal with many of them.

POLICY OPTIONS

KEY POINT #6 — Subdivision regulations also affect housing costs, and zoning may be a more effective way to address constraints than project by project reviews.

Zoning can also be used as a tool to mitigate impacts and is often more effective than using subdivision regulations. For example, without zoning the County has little ability to limit growth on gravel roads. As a result, the subdivision regulations require all developers to do expensive traffic studies to determine road improvement costs and proportional shares in order to mitigate the impacts of their developments. If zoning were used to mitigate the impacts on gravel roads by limiting densities according to the capacity of the roadway, then the traffic studies and proportional shares may no longer be necessary, making the process of subdividing property simpler and less expensive, especially for small projects.

Option #3 : Improved performance standards to address the development constraints

Tailoring the development review process to better address development constraints is another potential mechanism, one that has been frequently used in the past. Regulations currently in place, such the County's regulations governing wastewater treatment systems or subdivisions, can be amended to better address development constraints. New mechanisms, such as site plan review, could also be developed. These mechanisms could work to manage the individual impacts of specific proposals in order to address constraints, continuing the practice of only dealing with constraints when specific development projects are proposed.

For example, the rules governing community wastewater systems could be amended to create mechanisms that require performance monitoring, funding for ongoing operation and maintenance, and for long-term rejuvenation or replacement. Subdivision regulations could be amended to allow lower road standards in rural areas and higher road standards in more urban areas. They could also be amended to require additional analysis of water supplies or additional mitigation measures in the Wildland Urban Interface.

Subdivision Regulations have been required by the State of Montana since 1973. In Lewis and Clark County, they have been amended five times since the 2004 Growth Policy was adopted. A weakness of site-specific regulations, including subdivision regulations, is their limited ability to address cumulative impacts of multiple development projects. Water availability is a perfect example, so are impacts to roads. Using site-specific regulations as the only mechanism to address development constraints will have limited effectiveness. The subdivision regulations have been around for a long time. If they were effective as the primary method to address constraints, we wouldn't be having many of the problems we are facing today.

Option #4 : Education to alert builders and home buyers to development constraints

Educating people of the development constraints, and how they relate to the overall development of the planning area as well as their daily lives, may have some positive effect. The Lewis and Clark Water Quality District has invested in a combination of regulatory and educational tools to reach out to the public about wastewater system maintenance. A similar system could be used, for example, for water quantity issues in areas like the North Hills. A big part of the problem of water use in areas experiencing drawdowns is irrigation of lawns and gardens. Reducing such water uses through education may prolong or prevent wells in such areas from going dry.

A problem with education is the fact that it isn't always effective, and it can't overcome certain physical constraints. A lack of funding for upgrades to roads or malfunctioning community wastewater systems can't be fixed through education. And educating people doesn't always compel them to do the right thing.

Option #5 : A combination of Options 1 through 4

These options do not need to be considered in isolation. A combination of the options may play off the strengths of some options while addressing their weaknesses. For example, investing in public infrastructure to accommodate future growth is less risky if appropriate zoning is in place. If public investment makes utilities available, then higher density zoning is workable. Through planning where urban, suburban, and rural zoning is applied, prudent and targeted infrastructure investments can be made that will pay off over time for the public and private sectors.

If zoning is used to address development constraints, subdivision regulations can be amended to lessen requirements in rural areas and make it easier and cheaper to do low-density subdivisions. Combining public education, improved regulations, and public funding to address water supply and fire protection can help the County respond to these concerns. In the end, it may be that a combination of targeted public investments, zoning, better performance standards, and public education are all necessary to address growth pressures within the Helena Valley Planning Area.

POLICY OPTIONS

KEY POINT #7 — A combination of investment, zoning, amended regulations, and education may be needed to effectively manage growth in the Helena Valley Planning Area.