

Theobald/RPI Study Group

Scenarios and indicators for Ouray County build-out analysis (revised 9/08) David M. Theobald, Ph.D., NREL, Colorado State University

Summary and Analysis

The “Executive Summary” prepared by Dr. David Theobald of his report *Scenarios and indicators for Ouray County build-out analysis , Revised September 2008* provides an overview of the goal, process, and major findings of his study.

The summary and analysis presented below summarizes basic data and illustrates current and future conditions with selected examples from the maps provided by Dr. Theobald. In addition, the increase in the number of housing units that the County may have to absorb, based on two different projections of growth, 3% and 4.7%, is used as a way of understanding the challenges the County will be facing by 2015 (RPI study endpoint) and 2025 (a prominent endpoint in the Theobald study).

The information in this build-out study provides the basis for several kinds of analysis and should be extremely valuable as the County moves forward. The map layers in the final report allow users to study land use alternatives in considerable detail.

Current status of Ouray County land use:

The 50% of private land in Ouray County is divided into 2,662 parcels on 162,457 acres. There are 1,269 housing units on parcels in the unincorporated County and, if the towns are included, there are 2,047 total housing units in the County. There are 896 platted parcels that do not currently contain housing units. There are an estimated 9,300 acres of mining claims, not including those protected by the Red Mountain Project.

According to the Ouray County Master Plan, land use planning should seek to preserve agricultural land, especially irrigated agricultural land; important wildlife habitat; riparian areas; and scenic vistas. The following maps show the current status of housing units and Master Plan values in Ouray County.

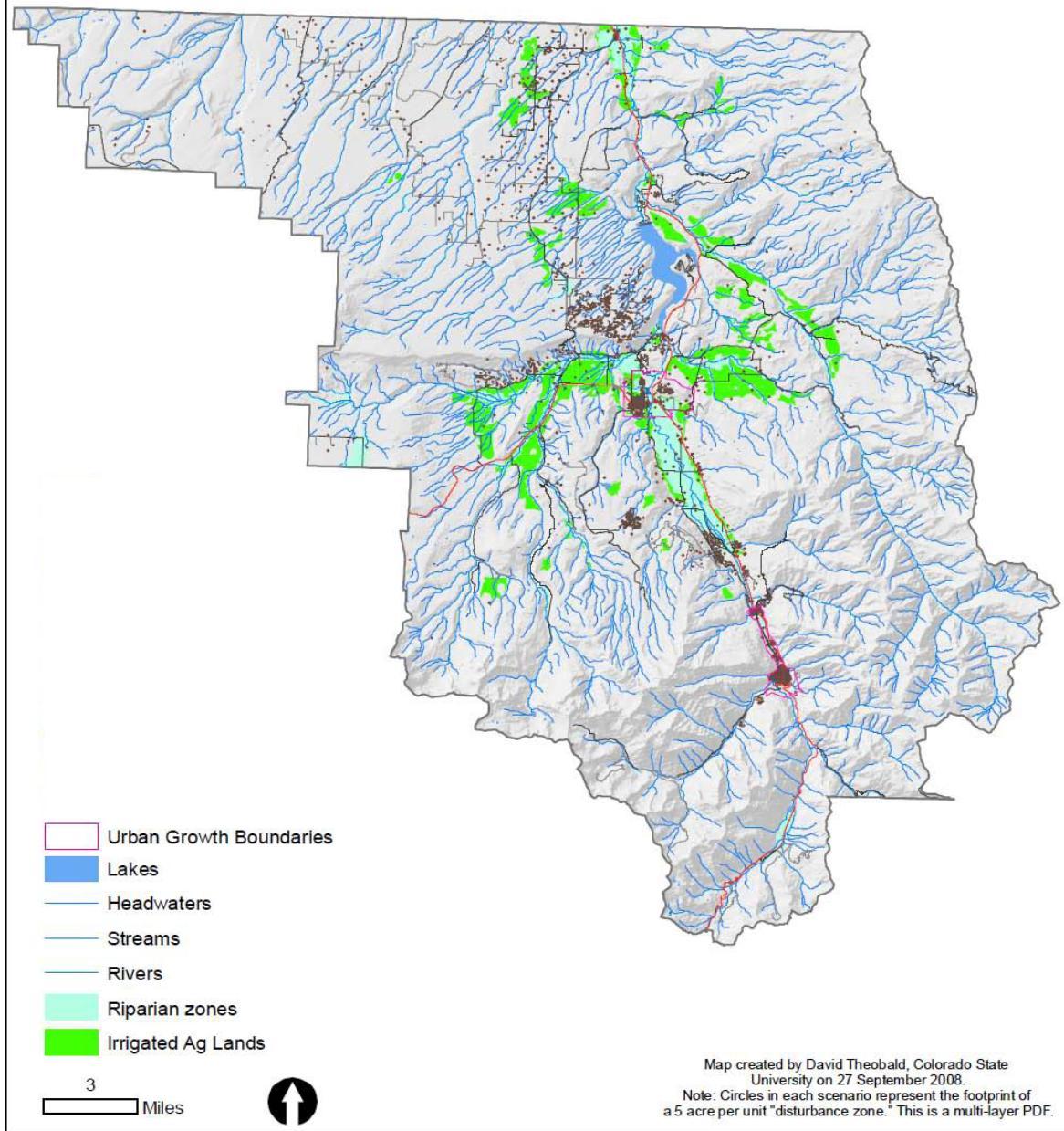
Map 1: The first map contains three layers: irrigated agricultural land (green), riparian areas (turquoise), and housing units (brown dots). Urban growth boundaries are outlined in red. Parcels and cluster preference areas are not shown.

Map 2: The second map shows winter range for economically important wildlife species—deer, elk, sheep.

Map 3: The third map shows locations for rare and imperiled species—bald eagle, lynx, miscellaneous species.

Map 4: The fourth map shows locations of scenic corridors as defined by the stakeholders group at the beginning of the study.

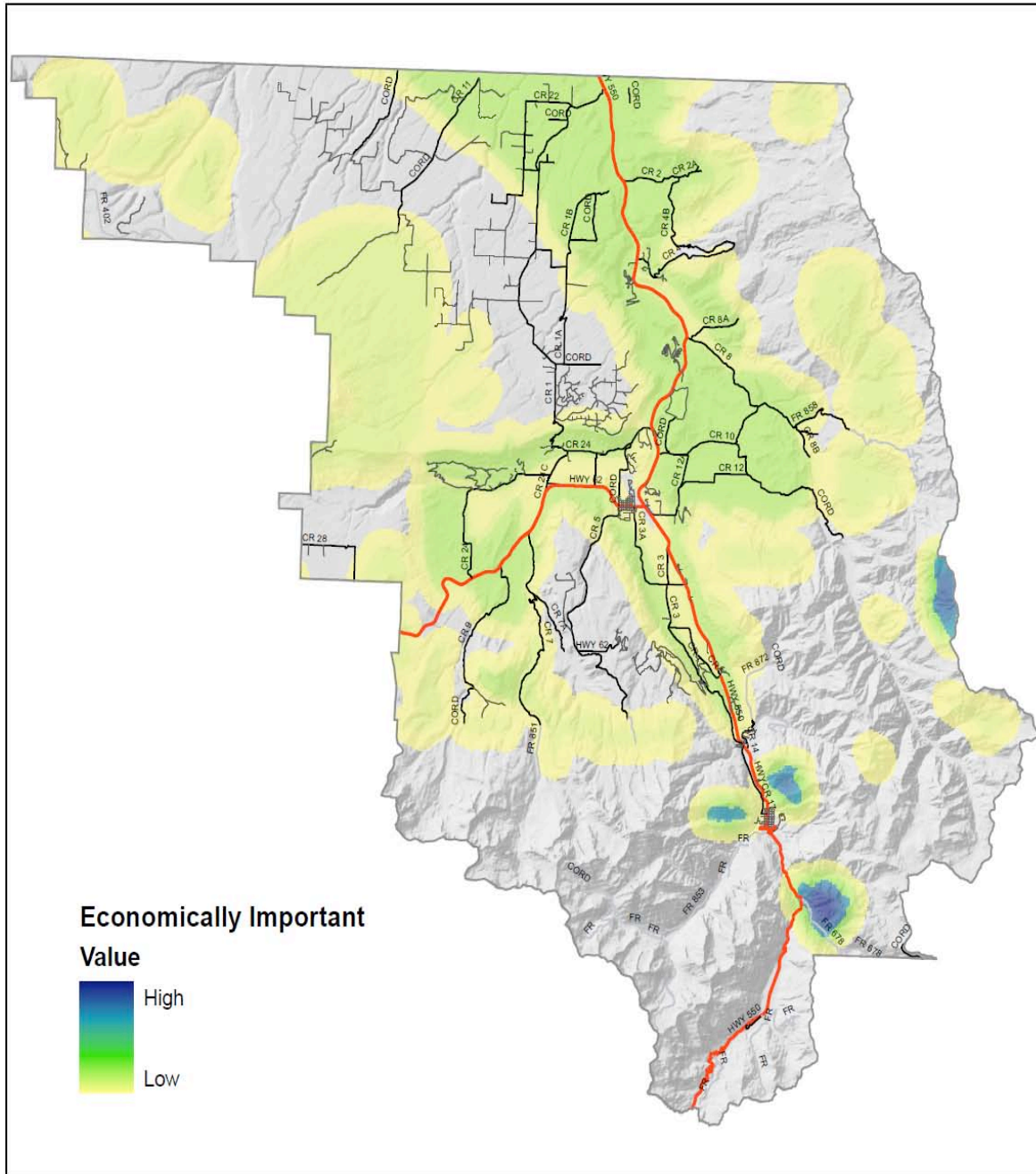
Ouray County Build-out Analysis Layers



Map 1: Irrigated Agriculture, Riparian, and Current Housing Units

Economically-important Wildlife Species

Ouray County Build-out Analysis

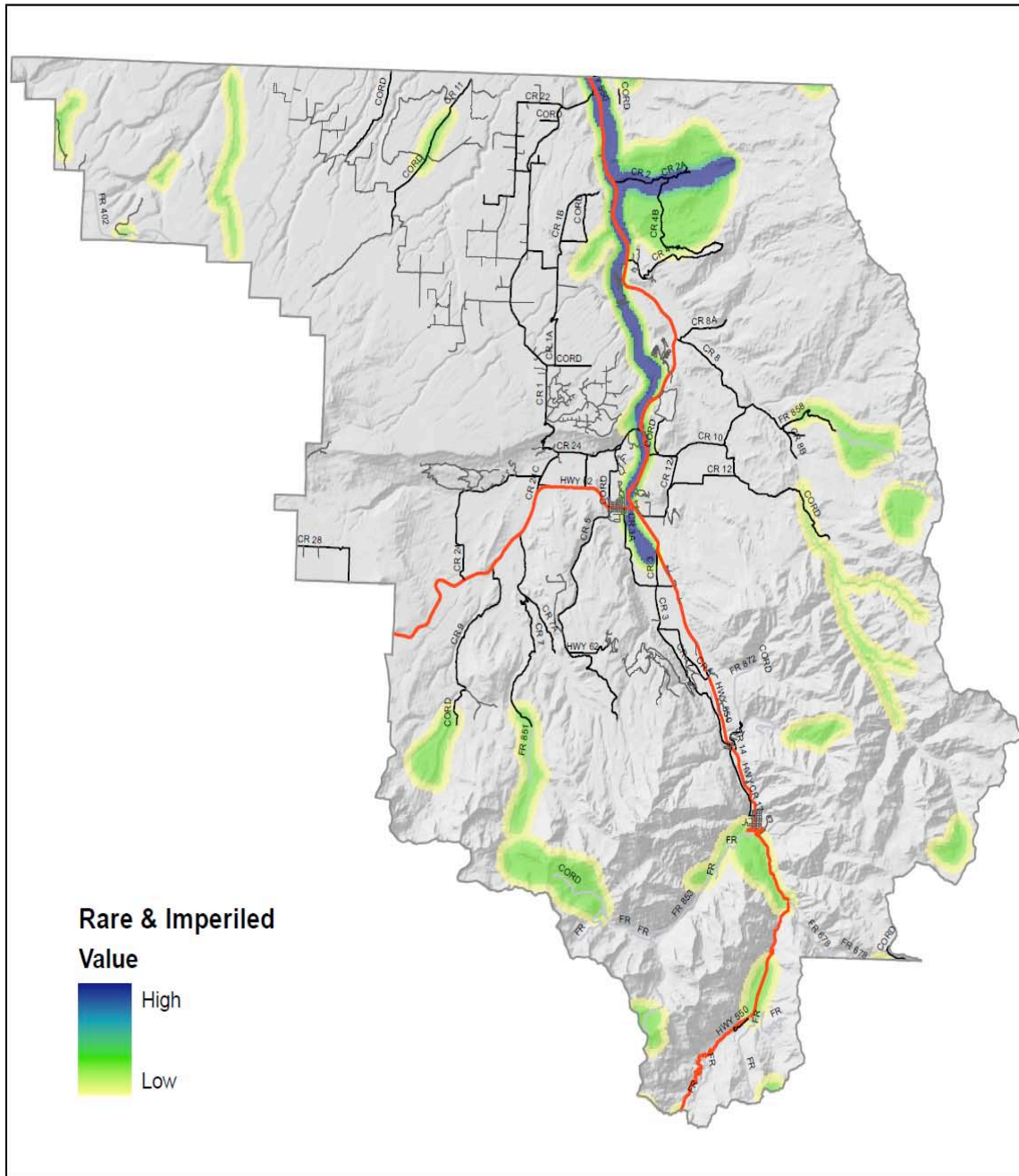


Data source: Colorado Division of Wildlife's NDIS/WRIS database. Mule deer and elk winter concentration areas and bighorn sheep winter concentration areas. Map created by David Theobald, Natural Resource Ecology Lab, Colorado State University on 1 September 2006.

Map 2: Economically important wildlife species

Rare and Imperiled Species

Ouray County Build-out Analysis



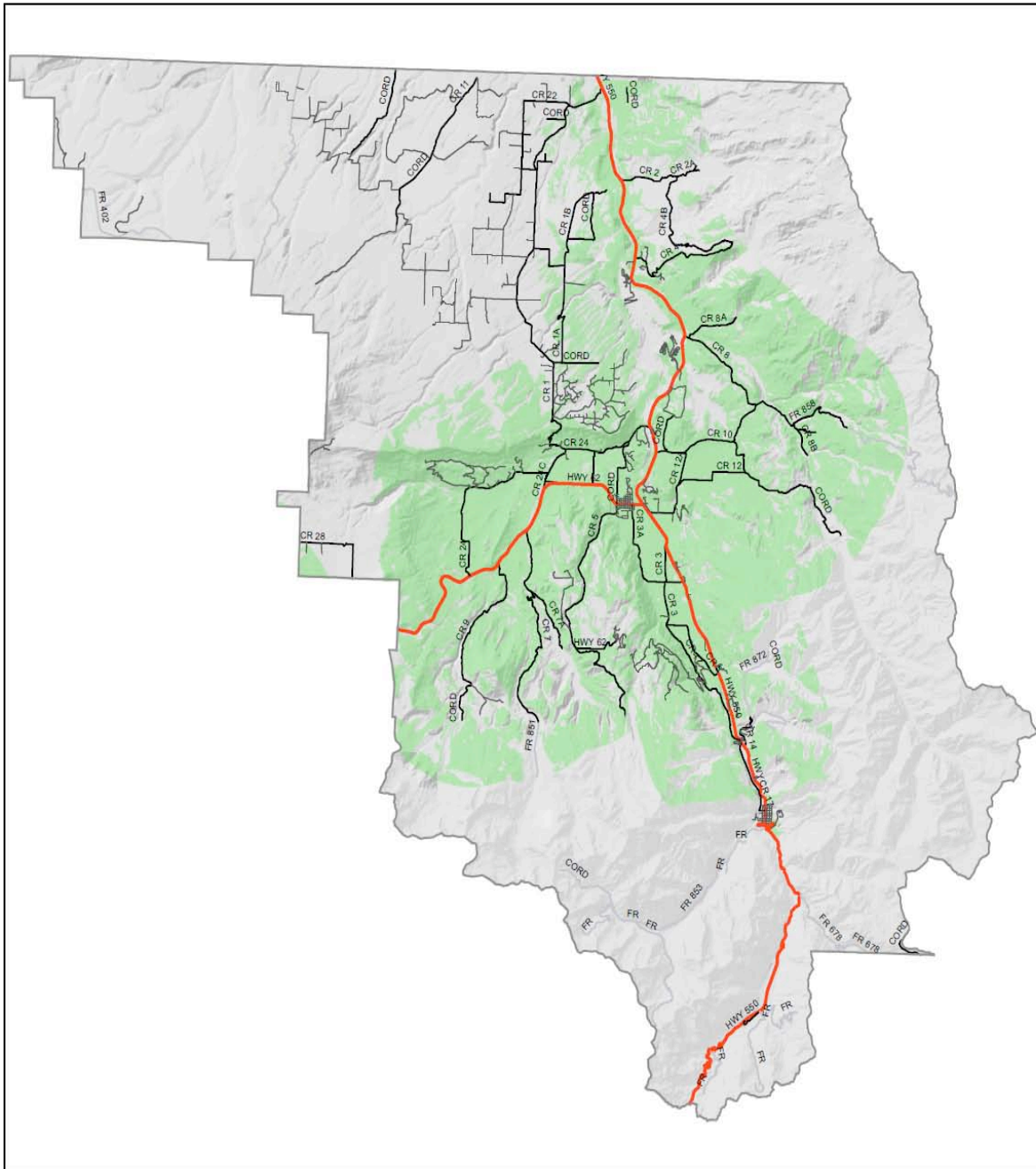
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Miles


Data source: Colorado Division of Wildlife's NDIS/WRIS database and the Colorado Natural Heritage Program's Potential Conservation Areas. Map created by David Theobald, Natural Resource Ecology Lab, Colorado State University on 1 September 2006.

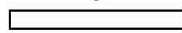
Map 3: Rare and Imperiled Wildlife Species

Scenic corridors

Ouray County Build-out Analysis



 Viewshed w/in 1.5 miles

5
 Miles

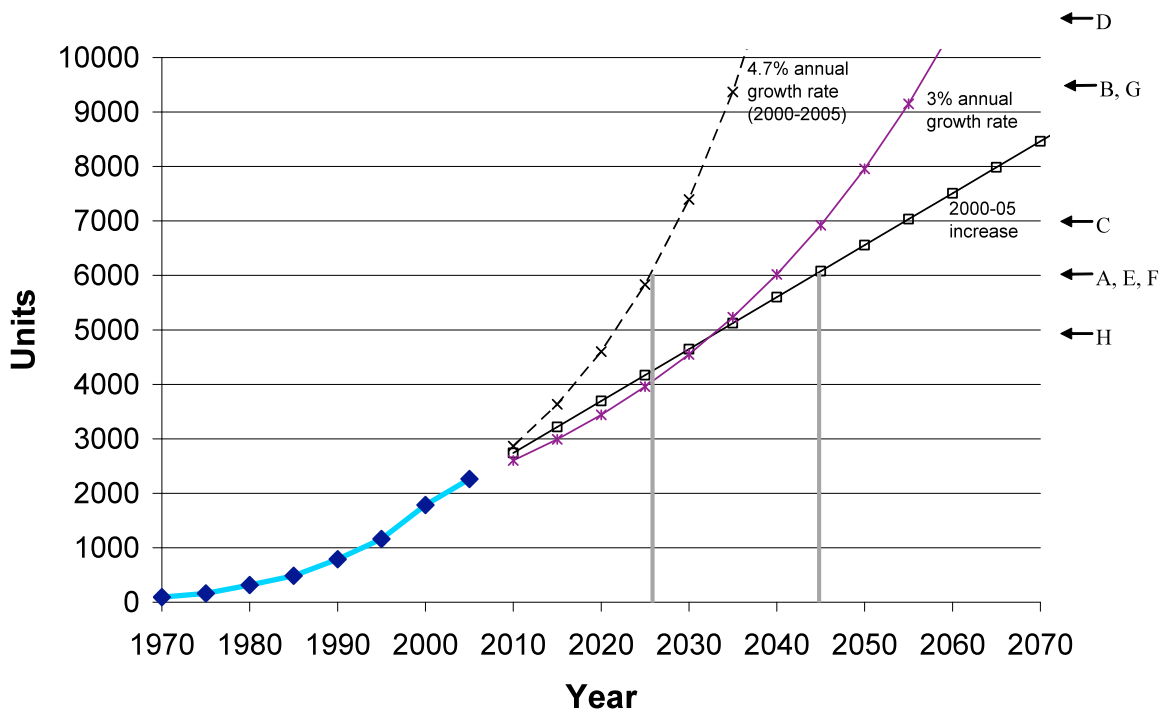
[Data source: Created from roads and 30 m Digital Elevation Model.
Map created by David Theobald, Natural Resource Ecology Lab,
Colorado State University on 1 September 2006.

Map 4: Scenic Corridors

It is apparent from a comparison of these maps that there is a great deal of overlap in the location of irrigated agricultural, riparian, wildlife, and scenic values. Both people and animals like to occupy valleys along rivers or streams, especially in the winter. Likewise, irrigated agriculture is likely to be located in such areas. The scenic corridors overlap also but cover a somewhat broader swath. The current approximately 2,000 housing units are concentrated in the towns and subdivisions with the remainder widely scattered (see Theobald, Table 2, page 3, for exact zone locations). This is the current status of housing units and Master Plan values in Ouray County.

Future land use issues:

Residential Housing Units in Ouray County



Using the graph “Residential Housing Units in Ouray County” on page 17 of the Theobald report as the basis for the rate of growth in relation to the increase in the number of housing units required, the following figures can be determined.

By the year 2015

- 3% rate of growth 1,000 additional housing units
- 4.7% rate of growth 1,800 additional housing units

By the year 2025

- 3% rate of growth 2,000 additional housing units
- 4.7% rate of growth 4,000 additional housing units

Working from the knowledge of how many housing units the County will need to absorb and when this need is likely to occur, the information in the scenarios and indicators can suggest alternative land use planning strategies and their impacts.

The nine scenarios calculated and mapped by Dr. Theobald consider four different housing densities: 1 house per 17.5 acres (B), 1 house per 26 acres on lots over 105 acres (C), 1 house per 35 acres (A, Colorado use by right), and 1 house per 70 acres (H). In addition, the impact of clustering and transferring development rights to the urban growth boundary were calculated and mapped for some scenarios (D, E, G1, G2). The impacts of the nine scenarios on the values expressed in the Ouray County Master Plan are presented by Dr. Theobald in the following Table 10. Note that all of the numbers represent total build out of that particular scenario. The black numbers are increases in housing units; the red numbers are losses in acres of land; and the green numbers have been converted from red to green to indicate the lowest numbers among the losses for an individual indicator.

Results

Table 10. Results of indicators for all zones (including mining claims), excluding towns of Ouray & Ridgway.

Indicators	Scenarios								
	A. Existing zoning	B. 35 ac at 17.5 per unit	C. 105 ac at 26 per unit	D. Urban Growth Boundaries	E. Scenic corridor	F. Scenic corridor transfer to UGB	G1. Cluster (1 unit per 35 acres)	G2. Cluster (1 unit per 17.5 acres)	H. Low-density (1 per 70 acres)
No. of units (county only) *1,269 in 2006	6,648	10,102	7,787	10,902	6,648	6,648	6,648	10,102	5,053
No. of units (Alpine, High Mesa & Valley Zones only)	5,611	9,036	6,741	9,840	5,611	5,327	5,611	9,036	4,026
Irrigated Ag	-2,175	-3,824	-2,700	-2,558	-2,175	-1,232	-595	-1,062	-1,472
Ag Land Use	-17,351	-33,756	-22,886	-17,624	-17,351	-15,265	-8,678	-16,881	-9,656
Econ. Important Species Habitat	-17,453	-29,983	-21,572	-17,789	-17,536	-14,941	-16,973	-29,534	-11,787
Rare & Imperiled Species Habitat	-2,347	-3,400	-2,682	-2,495	-2,353	-1,524	-1,597	-2,604	-1,872
Riparian Areas	-1,769	-2,747	-2,064	-2,110	-1,769	-1,307	-1,083	-1,312	-1,374
VMT w/~830 % mining claims ¹									
- 100%	1,234	2,064	1,493	2,137	1,234	1,234	1,234	2,064	873
- 75%	1,161	1,983	1,418	2,038	1,161	1,161	1,161	1,983	804
- 50%	1,089	1,902	1,343	1,940	1,089	1,089	1,089	1,902	734
- 25%	1,016	1,820	1,268	1,842	1,016	1,016	1,016	1,820	665

The figures in Table 10 suggest that any of the scenarios at build-out would provide more than the maximum number of housing units needed to absorb 3-4.7% growth (1,000-1,800 units by 2015 and 2,000-4,000 units by 2025). In reality, it is unlikely that any single

¹ VMT computed assuming 100%, 75%, 50%, and 25% of mining claims built. This compares to 242 (1000s vehicle miles traveled per day) for 2006.

scenario will be selected by property owners and buyers to absorb all the growth. Rather, a combination of scenarios that reflect individual choice and response to incentives and regulations is likely to represent where growth will actually occur. The question is: which scenarios does the County want to encourage through incentives and regulation because they preserve more of the values in the Ouray County Master Plan? And where does the County want to encourage these scenarios?

Based on the figures in Table 10, Scenario G1, 1/35 with clustering, loses the least number of acres of irrigated agricultural land, non-irrigated agricultural land, and riparian areas. G1 results in a low, but not the least, loss of wildlife habitat for economically important wildlife and for rare and imperiled species. G1 shows the power of clustering when compared to Scenario A, 1/35, which is the same density without clustering. Scenario H, 1/70, with its very low density preserves the most wildlife habitat for economically important species. Scenario F, transfer to UGB from the scenic corridor, produces some favorable results in preserving the values of the Master Plan, but note that whenever you transfer to the UGB, irrigated agriculture and riparian areas are being sacrificed; however, since the density is so much higher in the UGB (7 units per acre), many more housing units are absorbed in less land area than in any other alternative.

To illustrate, using a smaller section of the County--the valley between Ridgway and Ouray, map layers have been enlarged to 300% and presented below for comparison.

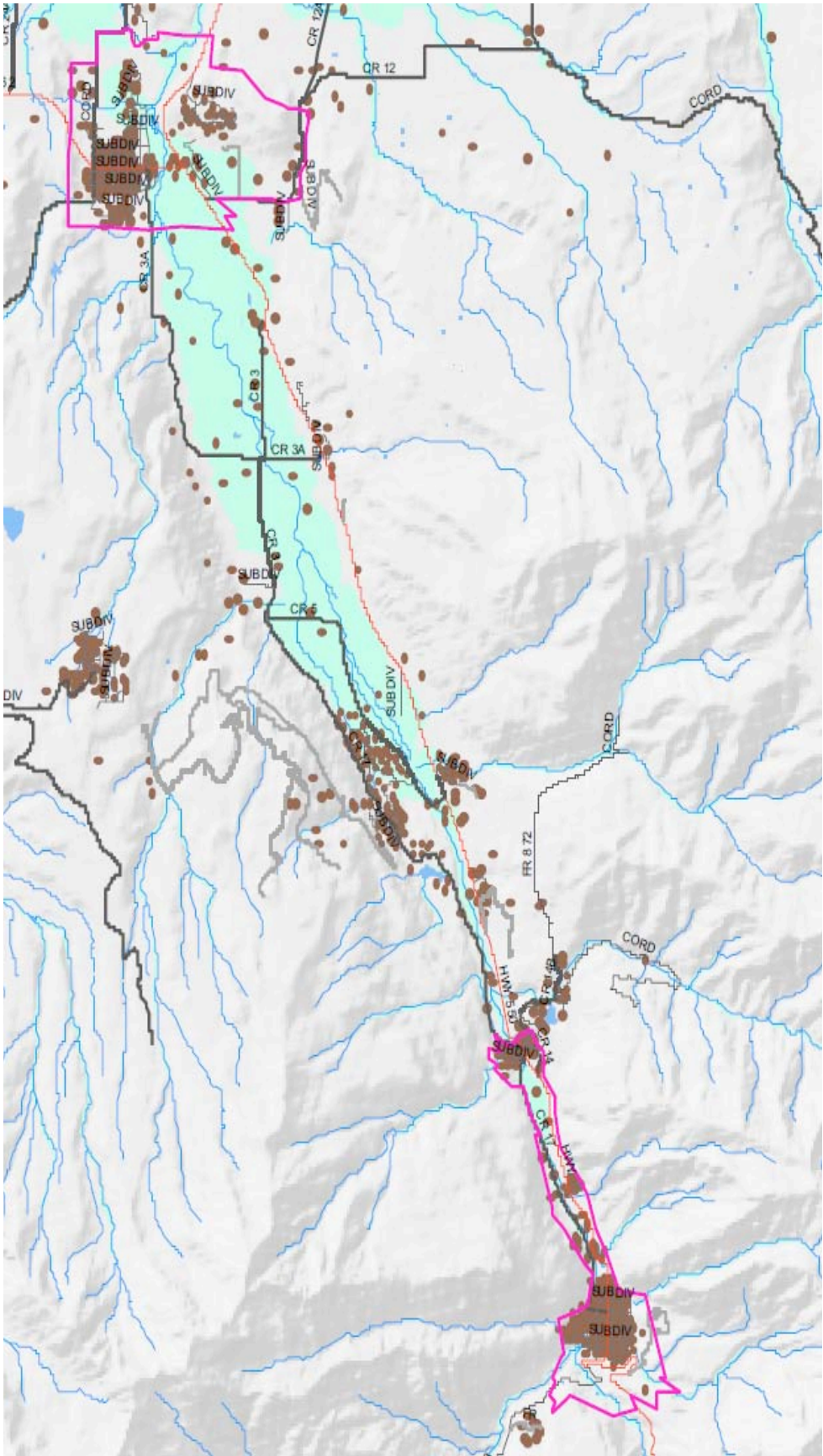
Map 1: The first map is a section of the County along 550 between Ridgway and Ouray as it currently exists.

Map 2: The second map is the same area built out at the current 1/35 zoning (Scenario A).

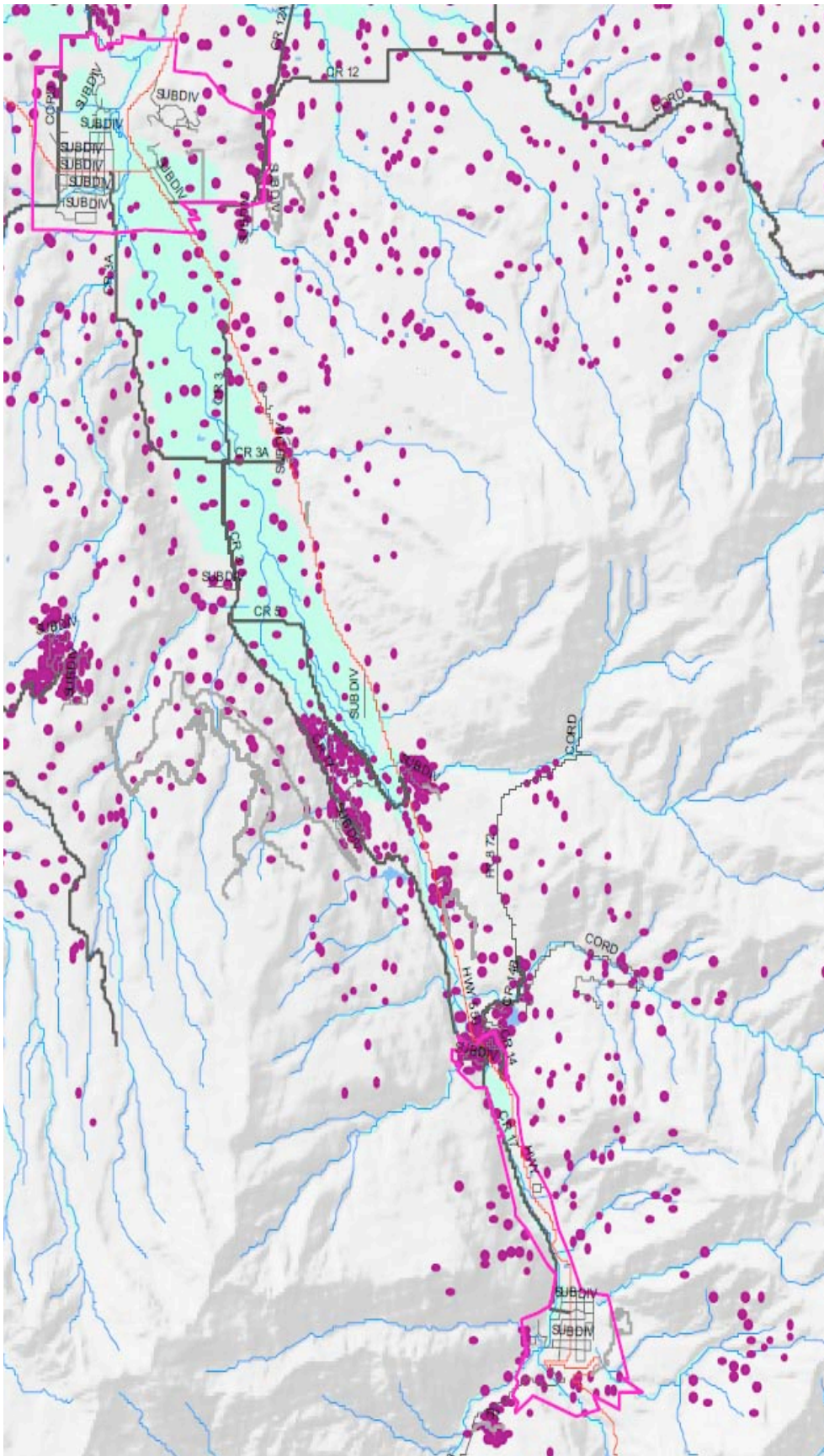
Map 3: The third map is the same area developed with clustering (Scenario G1) to preserve the values of irrigated agricultural lands, riparian areas, and ridgelines.

Map 4: The fourth map applies the scenic corridor preservation of Scenario F.

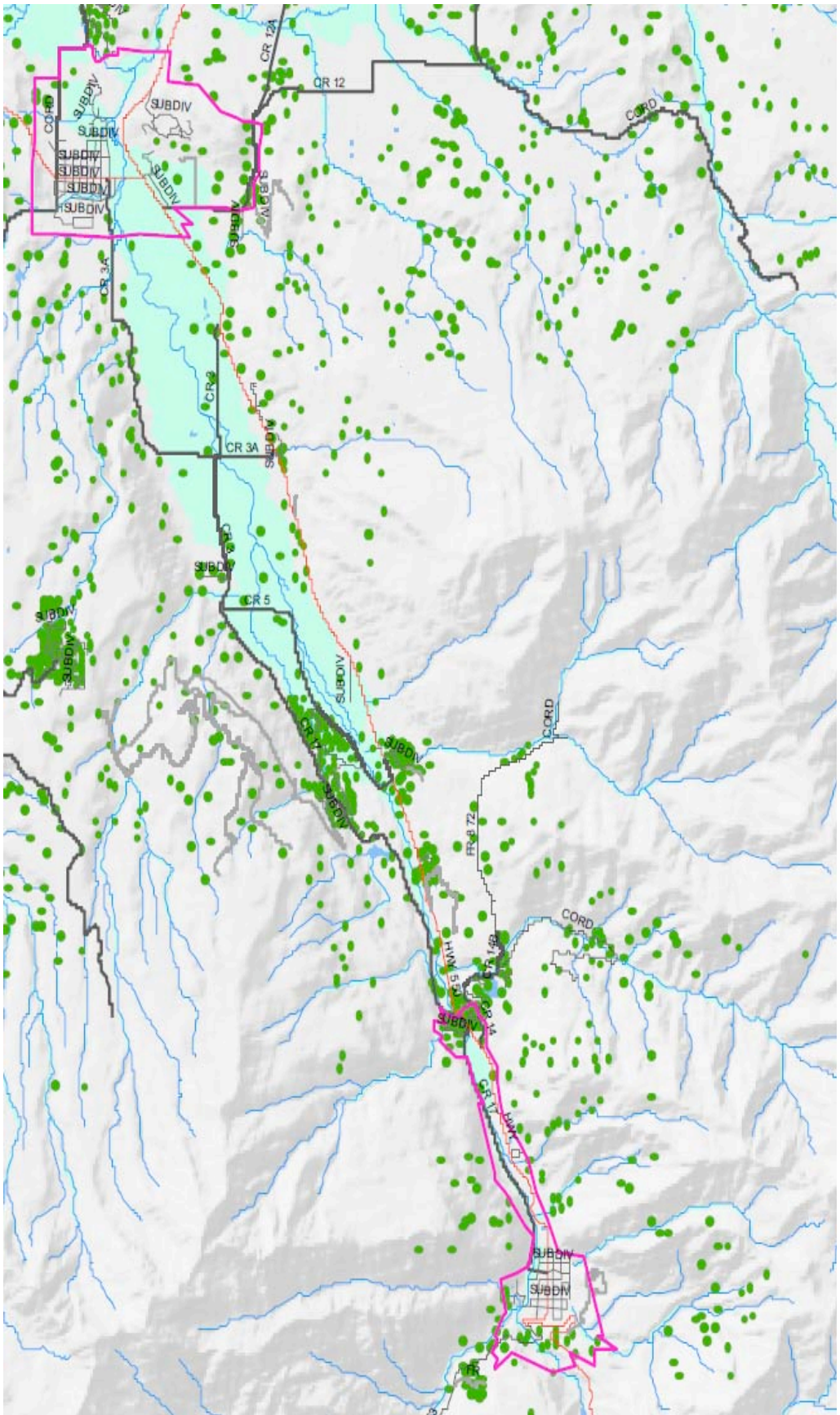
Reminder: each dot represents a structure and its 5-acre area of impact or influence (radius of 80 meters), including driveways, access roads, outbuildings, and adjacent vegetation that is modified. This area of influence will have a wildlife impact that could be greater or smaller depending on the species involved. Each dot has to be located within a parcel and in the area of least impact on the values being studied. Parcel lines are not represented on these maps for clarity, but there is a layer available for that element. Also, the dots do not represent current actual locations of buildings within a parcel.



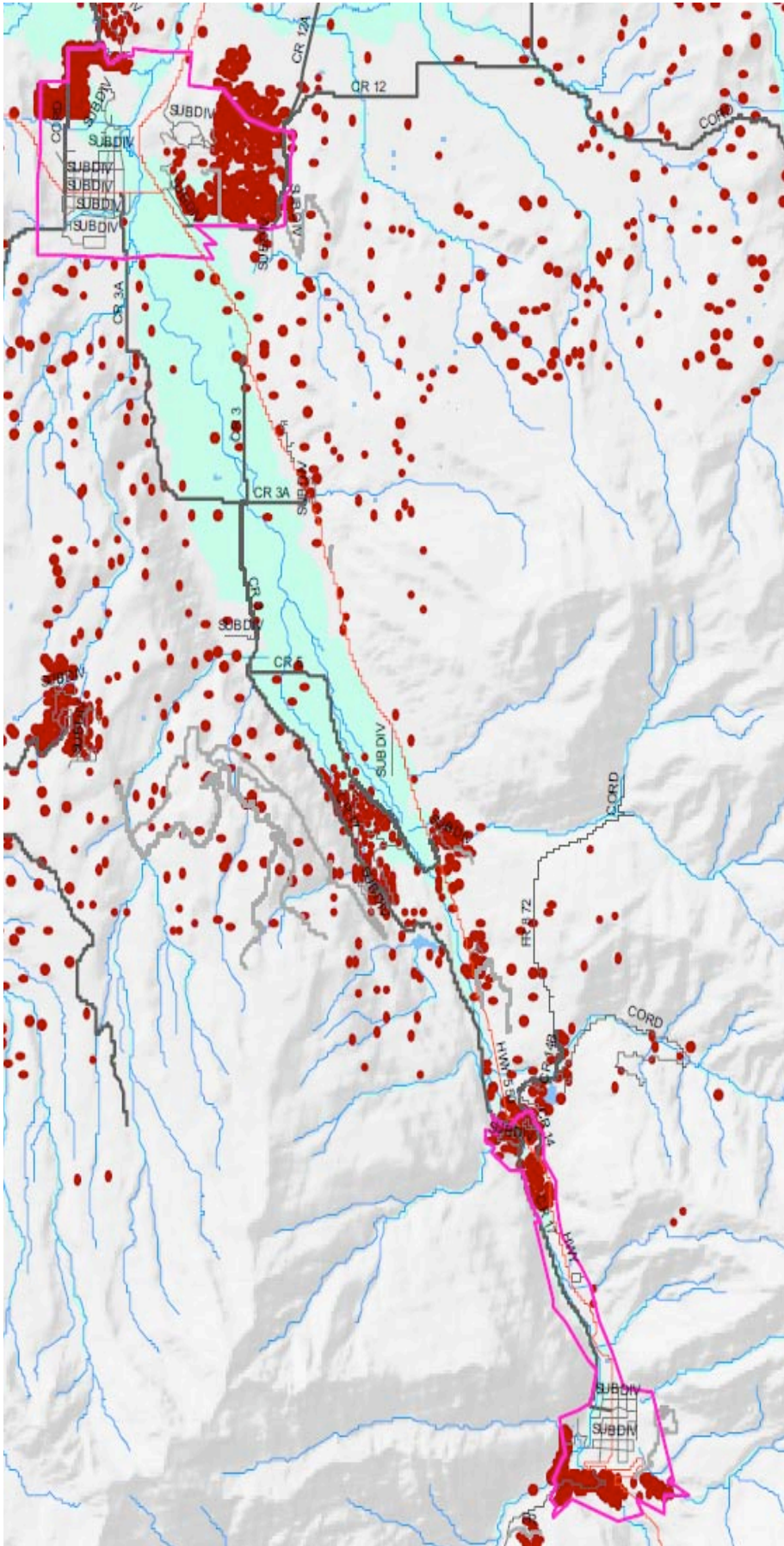
Map 1: Current Development



Map 2: Scenario A, 1/35 current zoning at build-out.



Map 3: Scenario G1, 1/35 with clustering at build-out.



Map 4: Scenario F, Scenic Corridor with transfer to UGB at build out.

The scenic corridor scenario appears to preserve a slightly greater area than clustering, but either is much better than a straightforward 1/35 in preserving the values of the Master Plan. Since this is a valuable riparian area and scenic corridor, the County may wish to at least encourage clustering for any development in this strip, or, better yet, facilitate putting as much as possible into conservation easements. Riparian areas are also often protected by zoning overlays or setbacks. This illustrates how different options may be selected for different locations, depending on the values involved and the current condition of the area.

It would be instructive to use the maps provided in the Theobald study to do a similar comparison for other areas of the County identified as of special interest, such as Log Hill Mesa or scenic corridors.

Recommendations:

In order to preserve the values in the Ouray County Master Plan, future growth should:

- Be directed toward already platted developments (there are currently 896 un-built platted lots) and adjacent to already established infrastructure, such as towns and existing subdivisions;
- Create incentives for effective clustering in any new developments, such as density bonuses;
- Encourage siting of structures to minimize impact on the total open space and scenic corridors;
- Encourage the continued use of conservation easements as an additional preservation tool;
- Evaluate TDR's (transfer of development rights) and PDR's (purchase of development rights) as means of preserving areas of high importance;
- Initiate a study of how to preserve water rights in the County.