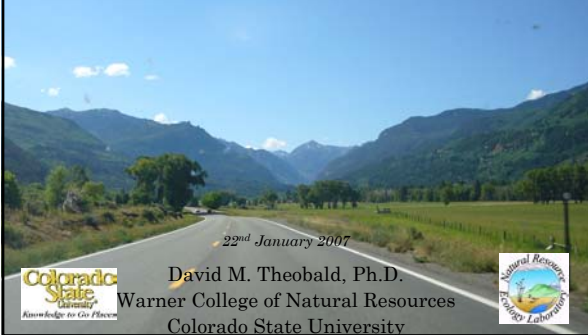


## Final results and report on build-out analysis of Ouray County



22<sup>nd</sup> January 2007  
 David M. Theobald, Ph.D.  
 Warner College of Natural Resources  
 Colorado State University

## Stakeholder team

- John Clark
- Ted Collin
- Sara Coulter
- Tom Harrington
- Brian Kolowich
- Ken Lipton
- Susie Mayfield
- John Peters
- Karen Risch
- Greg Moberg

## Agenda

1. Briefly review goals & process
2. Present & review maps of scenarios and indicators
3. Discuss results



## Master plan goal

*"The overall development goal of Ouray County is to allow gradual, long-term population and economic growth in Ouray County in a manner that does not harm the County's irreplaceable scenic beauty, wildlife, air and water resources, and other environmental qualities and that does not unduly burden the County's residents or its government."*  
 -- Ouray County Master Plan



## Why a build-out analysis?

A tool to examine:

- a) How land use policies would likely shape future development patterns
- b) What are the likely effects of development patterns on community values

Build-out means the pattern if development is allowed to proceed until no more parcels are left to build on ("in the fullness of time")

A build out analysis is not a policy document but rather a planning tool intended to inform the planning process and assist decision makers in Ouray County.

It is *not*:

- a crystal ball
- a prescription from the outside

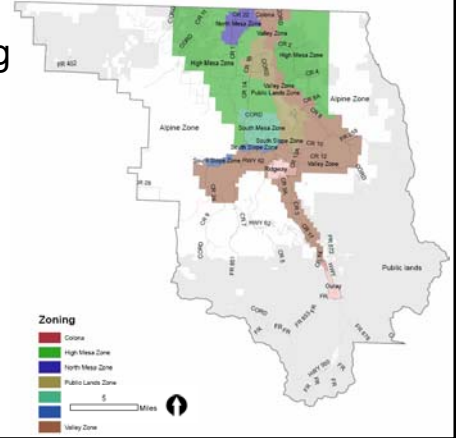
## Process

<i>Activity</i>	<i>Date</i>
Public presentation describing build-out analysis	January 30 <sup>th</sup> , 2006
First stakeholder meeting and defining scenarios & indicators	March 22 <sup>nd</sup> , 2006
Preliminary indicators maps and scenarios	July 10 <sup>th</sup> , 2006
Meeting with BOCC for input on scenarios	August 9 <sup>th</sup> , 2006
Draft report for quick review to BOCC and stakeholders	September 5 <sup>th</sup> , 2006
Revisions and final report to BOCC	mid-October 2006
Public presentation of results	January 22 <sup>nd</sup> , 2007

## Assumptions

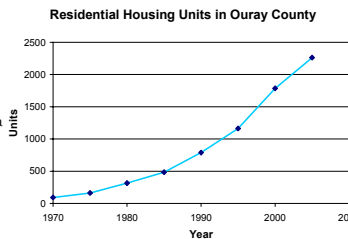
- Alternative scenarios address only the *Alpine*, *High Mesa*, and *Valley* zones (95% of private land) – other zones based on existing zoning
- Excluded mining claims in southern part of county
- Each housing unit has roughly a 5 acre “footprint”
- Based on parcel data current as of April 5, 2006 – roughly ~2% of parcels did not have attributes

## Zoning



## Current conditions

- 49% of Ouray County privately-owned
- 75-90% of productive, species-rich areas are privately-owned
- 2,622 parcels and 1,269 units built (excluding towns) on 162,457 acres;
- 1,269 units built:
  - 769 on <10 acres
  - 136 on 10-35 acres
  - 295 on 35-160 acres
  - 58 on >160 acres
- 4,792 acres of private land held in conservation easements or exempt
- Housing units growing at a rate of 4.7% between 2000-2005 (doubles in 15 yrs)



## Scenarios

- Existing zoning (baseline)**
  - 1 unit per 35 acres (Alpine, High Mesa, Valley)
- 35 acres at 17.5 acres per unit**
  - doubling - parcels of at least 35 acres can develop at 17.5 ac per unit
- 105 acres at 26 acres per unit**
  - Parcels at least 105 acres, provided 1 additional unit unit
- Urban Growth Boundaries**
  - allow 7 units per acre UGB areas around Ridgway & Ouray
- Scenic viewshed**
  - minimize development in the valley floor in corridors along Highways 550 and 62 and other roads; constrain location within parcel but not number of housing units
- Scenic viewshed w/transfer to Urban Growth Boundaries**
  - Similar to E but transfer units to UGB of Ridgway & Ouray
- Cluster development**
  - Constrain location of units on parcel to avoid exclusion areas identified in master plan (riparian/drainage, irrigated ag, and ridgelines) and assumes doubling housing units as incentive
- Low-density**
  - Parcels at least 70 acres would have only 1 unit per 70 acres, rather than 1 per 35 acres

## Indicators

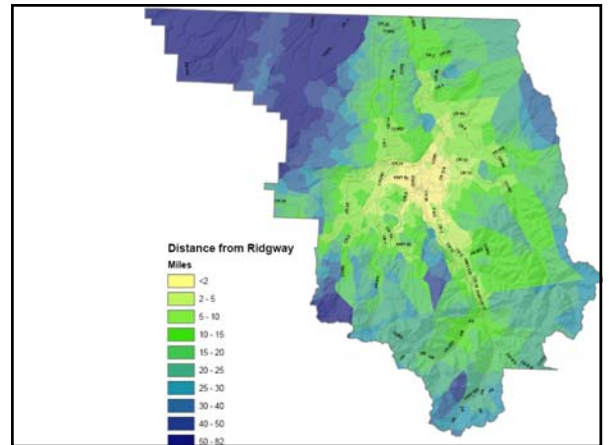
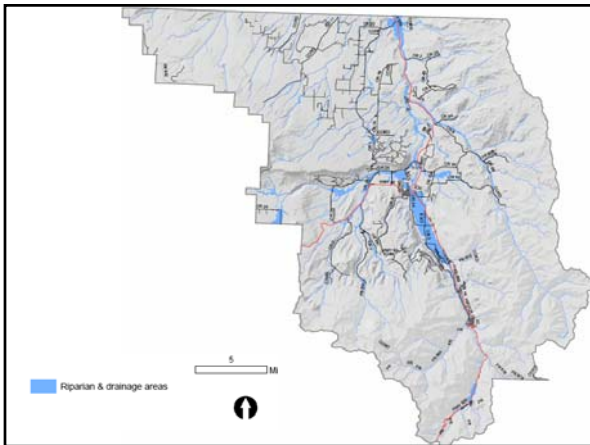
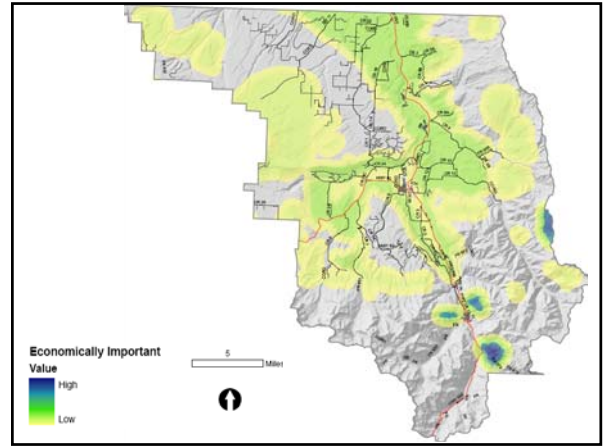
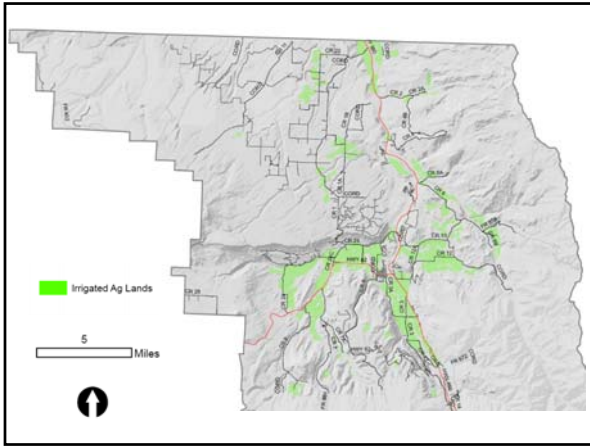
Indicator	Goals										
	Agriculture	Conservation	Economic dev.	Housing	Natural resources	Rural character	Tourism	Transportation	Utilities	Visual/significant	Historic
<b>No. housing units</b>		+	+	++							
<b>No. accessory dwelling units</b>		++	+	++							
<b>Acres irrigated fields</b>	++					+	+			+	
<b>Acres agricultural land</b>	++		++			+				+	
<b>Ac. wildlife habitat</b>			+			+	+				++
<b>Acres of riparian &amp; drainage</b>			+		+				+	++	++
Mi. additional subdiv. roads			+						++		+
<b>Vehicle miles traveled</b>			+			+			++		+
Ac. in wildfire hazard					+					+	
Road effects on H20 quality									++		+
Trailheads							+				

\*bolded indicators selected for study, ++ primary, + secondary

## Indicators

Used to measure various aspects or characteristics that provide insight into the overall effect of land use patterns that result from a scenario

- Number of housing units**
  - each unit has 5 acres of affected zone that includes the building footprint, modification of adjacent vegetation and outbuildings, and driveways, etc.
- Acres of irrigated agricultural fields affected**
  - mapped from 2000 aerial photography (in 2000)
- Acres of agricultural land use affected**
  - reflects the value of a variety of land types for the agricultural enterprise (grazing, meadow hay, irrigated, etc.), computed using the land use designation for each parcel from the assessor's database.
- Acres of economically important wildlife habitat affected**
  - focus on critically limiting habitat
  - mule deer, elk, & bighorn sheep winter concentration areas
  - data from CDOW/NRDS
- Acres of rare & imperiled species habitat affected**
  - bald eagle winter concentration areas, potential conservation areas
  - data from CDOW and Colorado Natural Heritage Program
- Acres of riparian & drainage areas affected**
  - mapped the floodplain/valley bottom adjacent to streams of 2nd order or larger (1:24k scale)
- Vehicle miles traveled per day**
  - indicator of overall air & water quality, fragmentation effects on wildlife habitat, and cost of services for county, estimated at 286,700 VMT currently
  - based on county estimate of 7 trips per day per household to the Town of Ridgway, include driving to work, school, errands, emergency service, UPS/FedEx/USPS, etc.
  - RPT's Fiscal Impact Analysis study (July 2006) used a country-wide value of 9.57; they estimate 54,500 trips per day; which would mean an average of ~5 miles per trip



## Analysis

Spatially overlay each scenario over each indicator to compute area affected

## Results

1. What are the likely development patterns?
2. What are the likely effects of those patterns?



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	G. Cluster development	H. Low-density (1 per 70)
No. of units (county only)	5,937 2.2x	9,557 3.6x	7,011 2.6x	11,525 4.3x	5,937 2.2x	5,937 2.2x	9,557 3.6x	5,088 1.9x
No. of accessory dwelling units	1,667	2,875	2,025	3,430	1,667	1,667	2,875	1,043
Irrigated Ag	2,315 11.4%	3,913 19.3%	2,755 13.6%	18,262 90%	2,315 9.0%	3,209 15.8%	1,403 6.9%	1,433 7.0%
Ag Land Use (acres affected)	18,601 14.1%	34,736 26.4%	23,871 18.1%	19,171 14.6%	17,962 13.6%	16,218 12.3%	16,660 12.6%	9,352 7.1%
Economically Important Species Habitat (acres affected)	17,970 9.9%	30,879 17.1%	21,959 12.1%	18,700 10.3%	18,040 10.0%	17,002 9.4%	15,607 8.6%	11,195 6.2%
Rare & Imperiled Species Habitat (acres affected)	1,691 3.4%	2,727 5.6%	1,978 4.0%	2,092 4.3%	1,689 3.4%	1,931 3.9%	1,322 2.7%	1,132 2.3%
Riparian Areas (acres affected)	1,208 7.9%	2,159 14.2%	1,467 9.7%	1,618 10.7%	1,207 7.9%	1,444 9.5%	482 3.1%	693 4.5%
VMT / day (all roads)	803,856 2.8x 135/mi/19 mi/trip	1,396,183 4.9x 146/mi/21 mi/trip	975,000 3.4x 130/mi/20 mi/trip	893,460 3.1x 77/mi/20 mi/trip	803,856 2.8x 135/mi/19 mi/trip	747,044 2.6x 125/mi/20 mi/trip	1,396,182 4.9x 146/mi/21 mi/trip	514,879 1.8x 101/mi/14 mi/trip
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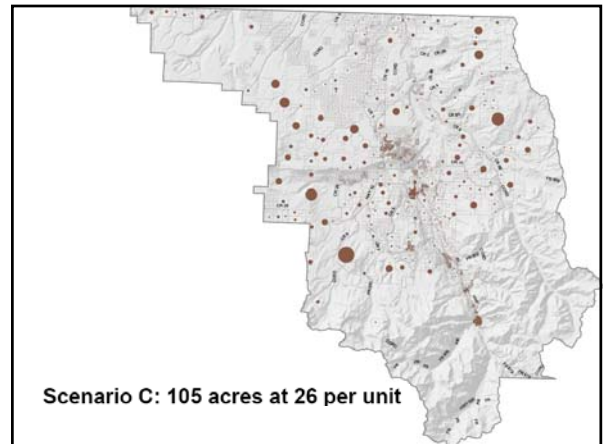
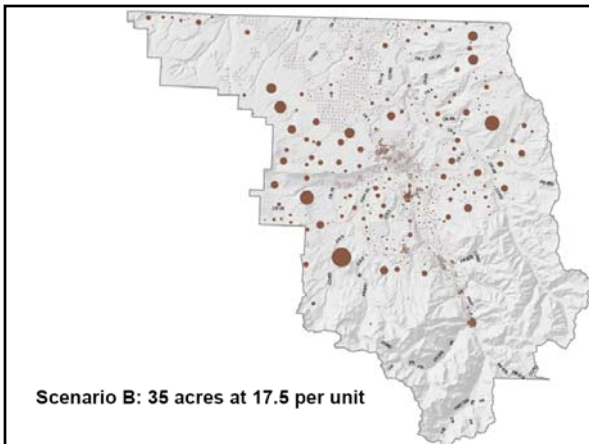
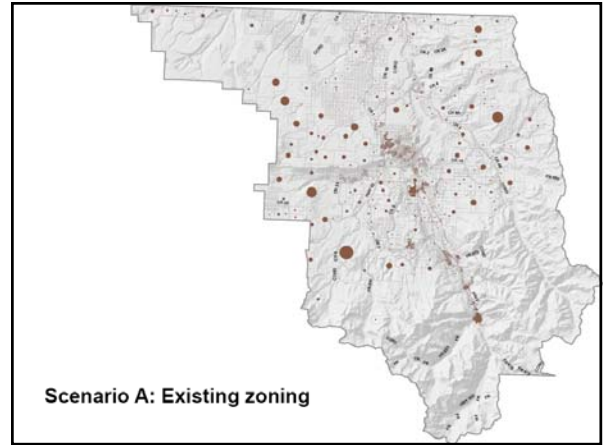
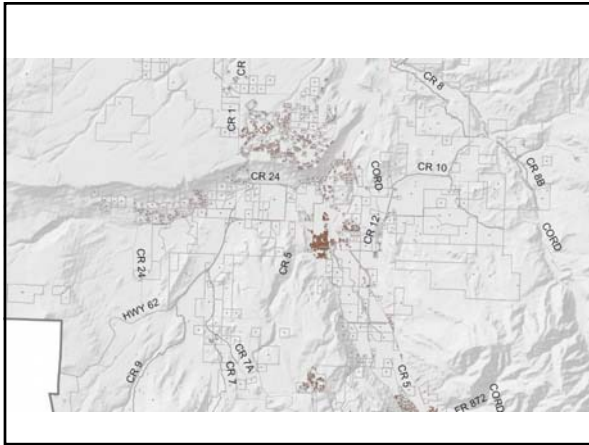
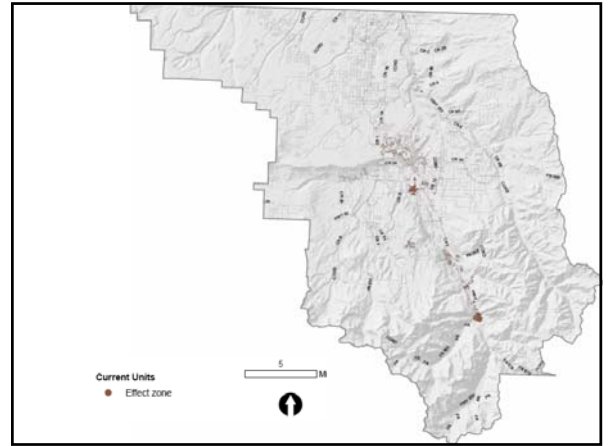
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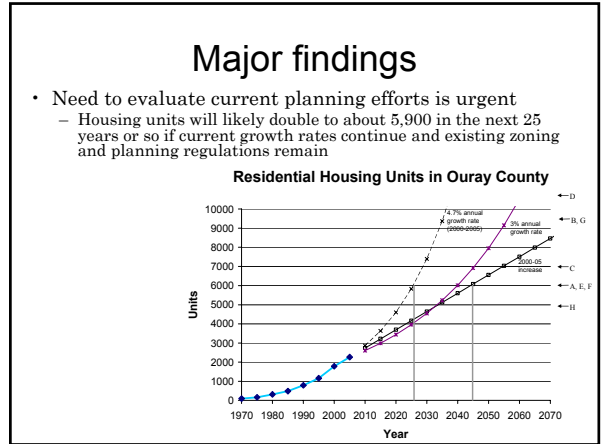
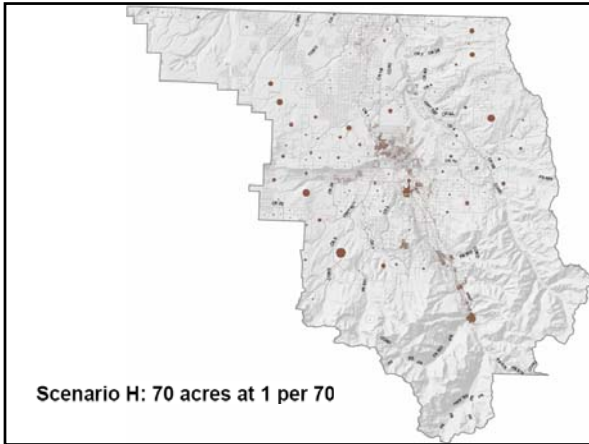
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Rare & Imperiled Species Habitat (acres affected)	1,691 3.4%	2,727 5.6%	1,978 4.0%	2,092 4.3%	1,689 3.4%	1,931 3.9%	1,322 2.7%	1,132 2.3%
Riparian Areas (acres affected)	1,208 7.9%	2,159 14.2%	1,467 9.7%	1,618 10.7%	1,207 7.9%	1,444 9.0%	482 3.1%	693 4.5%
VMT / day (all roads)	803,856 2.8x 135/u 19 mi/t	1,396,183 4.9x 146/u 21 mi/t	975,000 3.4x 3.1x 77/unit 20 mi/t	893,460 3.1x 77/unit 11 mi/t	803,856 2.8x 135/u 19 mi/t	747,044 2.6x 125/u 18 mi/t	1,396,182 4.9x 146/unit 20 mi/trip	514,879 1.8x 101/u 14 mi/t
VMT / day (not state highways)	169,703	287,546	201,044	175,009	169,703	161,479	287,546	111,735





### Major findings (cont.)

- Lot of choice regarding number of units
  - Of the 7 alternative growth scenarios, 4 would result in an increase of about 20% to 100% in the number of housing units, 2 would result in no net change, and 1 would result in a 15% reduction as compared to the baseline scenario. The build-out scenarios forecast between 5,088 and 11,525 units.
- Low to very high effect on irrigated ag land
  - The acres of irrigated agricultural land lost to development would range from about 1,400 acres (7% of existing) in the cluster and low-density scenarios, to 2,300 (12%) acres for existing zoning and scenic corridor scenarios, to as much as 18,000 acres (90%) in the urban growth boundaries (note that with careful site planning this could be reduced significantly).

### Major findings (cont.)

- Loss of economically important habitat depends on *pattern* of development
  - Effects on habitat for economically-important wildlife species is dependent mostly on the dispersal pattern of housing—doubling housing density results in 2 to 3 times the loss of acres as scenario A.
- Relatively minor loss of *known* rare & imperiled species habitat
  - The loss of rare & imperiled species habitat is relatively minor (<6% of existing habitat) and changes very little between scenarios.
- Major effects on habitat & movement due to fragmentation
  - Possible limitations on wildlife movement and fragmentation of habitat are likely due to increased automobile traffic. VMTs are projected to increase from 80% (low-density scenario) to 280% (existing zoning, urban growth boundary) to 480% (35 ac at 17.5 per unit and clustered scenarios).

### Major findings (cont.)

- No change to current regulations means moderate effects
  - Maintaining the existing zoning would result in 5,900 total housing units (for the county), a moderate reduction (~10%) of current irrigated agricultural land and wildlife habitat, and 2.8 times the vehicle miles traveled (VMT).
- Doubling housing units (Scenario B) means major effects
  - Doubling housing units allowed on Alpine, High Mesa, and Valley zoning types would result in 9,500 units; a 15-20% reduction of irrigated ag land, wildlife habitat and riparian areas; and result in an estimated 4.8 times the current VMT.
- Compact growth by UGB means minor effects
  - Steering growth towards urban growth boundaries would allow an estimated 11,500 housing units, have a large reduction (~90%) of irrigated ag land, moderate effects on wildlife habitat, and about 2.8 times the existing VMT.

### Major findings (cont.)

- Cluster development reduces some effects w/in parcel but increases effects broader
  - Clustering within a parcel (fine-scale) but increased units still dispersed throughout county
- Reducing density minimizes effects
  - The low-density scenario would result in about 5,000 housing units, minimize the irrigated land and wildlife habitat lost, and limit the VMT to about 1.8 times current levels.

## Wrap up

- Other study addressed economic concerns
- Thanks!