Summary Meeting Notes
The Galisteo Basin: Paradox and Promise
Visa Clara Ranch, 28 February 2004

I. Summary of pre-meeting participant interviews (*Complete interview responses are in Appendix A*)

What makes you optimistic about the future of the Basin?	What are your concerns for the future of the Basin?
• Strong community • Wonderful and beautiful place to live • Encouraged by people involved • Opportunity to do something positive • Ecological consciousness • Future thinking • It has changed slowly • Government interest in the basin	• Growth that is unplanned, unmitigated, insensitive • Climate change • Erosion • Watershed degradation • Becoming suburb • Lack of water • Poor forest management • Protecting open space and natural areas • Overdevelopment • Overextending basin carrying capacity • No involvement of public in government decisions • Disrespect for landscape

II. Why are we meeting?

To meet each other and have a dialogue about the future. To learn about the Basin in particular the history and planning in a watershed context. The County's role is address issues identified in County General Plan – growth, sprawl, protect rural areas, protect natural resources (water, open space, etc.), plan for communities, etc. Question we need to answer is how do we make decisions about this place in the future?

III. What are the implications of watershed planning for the Basin?

a. What is a Watershed? *(Summary of What is a Watershed is in Appendix B)*

A watershed is a geographic area defined by the flow or movement of surface water. Contained within it are important ecological cycles. A watershed approach is often associated with terms such as interconnected, integrated, multi-jurisdictional, multi-disciplinary. Recognizes that issues overlap and is concerned with human related activities such as urban run-off and their impact on the ecosystem. Thus watershed management promotes cooperation among various and even competing interest –

government, public interest groups, academic institutions, private landowners, concerned citizens, etc.

b. Watershed Project Examples *(Examples included as Appendix C)*

Lessons from examples: Need collaboration and community involvement. Have demonstration projects, public education and outreach. Create economic incentives. Need regulation and enforcement. Strategic land acquisition and management.

c. The Galisteo Watershed Association (*Strategic plan included as Appendix D*)

IV. What should be included in a timeline of the human and natural history of the Basin? *(Timeline is included as Appendix E)*

Timeline was reviewed. Bill Baxter presented an overview history of the Basin and a history of precipitation in New Mexico. *(Included as Appendix F*)

V. What are the lessons of the timeline for current and future planning in the Basin?

a. Impact of humans – they took – therefore change consciousness. Be sensitive to context of our existence. Co-exist with and live within nature. Conscientiously healing the land.
b. Not living off the land (shift). Decisions made outside the basin that effect basin (governments, non-profits). Does not necessarily result in better decisions.
c. Water. Key influence. Future responsible use of ground water is key. Need laws to control use. (eg. Capture run-off)
d. Basin gets 6-10 inches of precipitation per year. Check how to effectively catch water? Live in balance with surroundings. Repair past excesses. Preserve open space. Work with county on earth friendly future. We are back in the 1300's.
e. Long history of migration. What happens to people already here?
f. Tourist destination strong year round. Increased job market. Outside geo-political events. Juxtaposed to these pressures – curtailment of bldg. permits? Lesson if that had happened?
g. Impact of humans telescoping. More. Faster. Therefore need to be increasingly aware of impact of our presence.
h. How fragile and impermanent. Are we just the latest wave? Using existing resource(s) or importing resources? Change happens…and happens on many scales. Key is adaptiveness and flexibility. Affluence effecting growth and change.
i. Opening of frontier equal opened consciousness. Impact of world?
j. Time is money, water is life.
k. Many do not have flexibility to move. Need to protect that population. Think in terms of seven generations.
l. How to develop?
m. For some people, there is no thought of moving.
n. Paradox in history. Came here due to enchantment (allure). People had dreams bigger than reality could provide. Realize we have to change our dreams. Reality vs. dream.

VI. What is it we treasure about the Basin? *(Participants divided into characteristics)*

ASSERTIVE

Archelogocial Heritage

- Archeological sites
- Feeling and seeing layers of time – geological and cultural
- Rock art sites

Cultural Heritage

- It is the home already of many wonderful communities with historic relevance and values
- Mythic storyline of cultural history, economic history, physical history
- Diversity of people in the watershed

Open Space

- Open vistas
- Openness
- Low population density
- Spaciousness in the landscape
- No city lights – stars visible
- Expansive undeveloped views
- Wildlife habitat preservation
- Unpolluted water, air, views

River

- The river ecosystem with all its plants and creatures
- Freedom being able to walk up the river

Safety

- Feelings of safety

Sense of Spiritual Renewal

- Wilderness of spirit and space
- The basin in its rugged beauty gives me a feeling of strength
- The assertive breath of the landforms that gives me a voice through the creatures, the wind, the morning fog, the frosted snow crusted weathered stonescapes, the intimate paths that a blind person might know beneath the ethereal blue.
- Psychic values of silence and peacefulness, darkness, emptiness

Free Thinkers

- People who are more likely to embrace alternative lifestyles
- Eccentricity of the people

Community Opportunity

- Small communities affording opportunities for involvement and communal participation
- Community engagement of individuals, organizations, institutions

Opportunity for New Paradigms

- The lack of density makes it possible to still plan for sustainable future
- Open future, potential for something good and beautiful
- The opportunity for new paradigms of conservation, development, community engagement

Ecological Diversity

- Preservation of grassland habitats, grass, antelope, hawks, migratory song birds, mammals, reptiles
- Riparian corridors (wildlife viewing, fall colors, hiking areas)
- Diversity and richness of flora and fauna well adapted to this arid environment
- Diversity of ecosystem to explore

DYNAMIC AND ENTREPRENURIAL

Natural Beauty

- Vistas
- Roadways without visual development
- Minimum roadways
- Continuous habitat
- Feel of the small village
- Way of life small town
- Quiet
- Open space
- Night sky
- Visual quality
- Landscape

Diversity of landscape, nature, history, and people

Cultural Resources

- Historic and prehistoric cultural resources
- Timeline including Indian, anglo, and Hispanic
- Popé – Staging area for cultural rebellion, only temporary set back for global colonialism. San Marcos Pueblo.

Independence

- Lack of military facilities
- Lack of government supervision
- Brain trust of independent thinkers who live in the Basin

RELAXED

Rural Character

- Relaxed lifestyle

- Small communities
- Lack of major traffic
- Low density
- Privacy
- Individual space and privacy
- Peace and quiet
- Rural
- Distance form Santa Fe

Open Space

- Open space and vistas
- Beautiful views

Natural Setting

- Low pollution
- Night sky
- Natural beauty
- The river
- Wildlife
- Natural resource preservation
- Diversity of ecological regimes across basin

Geology

- Geologic context, history, dynamic
- Ecological diversity
- Self sustaining ecologically
- Rock art at San Cristobal
- Geomorphology

People

- Diverse populations
- People

Archeology

- Archeological resources
- History of compact community settlements

PRUDENT AND INVENTIVE

Natural Beauty

- Clear views
- Clean air
- The sky, especially on clear days when there is no smog
- Vistas
- Night sky

- The land form: the feeling I get from the topography and the flora and fauna
- Natural beauty of formations
- Dry air environment

River
- Flowing water

Trails
- Public access
- Trails

Open Space (differentiation made between publicly accessible land and just open areas)
- Visually open space

Spirit
- Peace and quiet
- Wind and quiet
- The solitude
- The sense that I and others were led here

Wildlife
- Wildlife
- Animals

Culture/History
- Cultural heritage (archeology, buildings, history, traditions)
- Historical and cultural importance
- Archeological sites hidden throughout the land
- Multi-cultural history

People
- Residents care
- The people (intelligent, kind, friendly, magnanimous, action oriented)

Community
- Independence (self-reliant, non municipal living)
- A place to raise our children
- Discrete communities

ROOTED

Environment, natural system, aesthetic of nature, nice place
- Long views
- Photography and photographic light experience
- Rivers itself in all its magnificence

- A watershed with multiple life zones that is not beyond stabilization (and even in my lifetime)
- River's ability to give life to the land
- The oasis of green - belt along the creek
- Diverse natural landscape
- Fragile yet resilient
- Beautiful landscapes, accessible in many places
- The river's physical beauty
- Wild open spaces and views
- Poetry and experience of relating to water and wetlands
- Environment (geology, vistas, biota, climate, weather, people)
- Cerro Pelon

Historical and Cultural Landscape

- Prehistoric settlements
- Cultural landscapes
- Cultural heterogeneity (Galisteo)
- Long history of people adapting to environment
- Unique, complex, knowable, its history and prehistory as well as its importance
- Crossroads of diverse people
- Diverse social groups
- A planning environment with flexibility an option (county planners listen and willing to adapt, local communities increasingly willing to engage in formal planning)

Living With Land/Connected to Land

- Salt cedar, tamarisk willow for building
- Grazing my donkey on the land, relatively few people for the given area
- Using wood on land for firewood and building materials
- Peoples relationship to the land
- Sparse populations except in settlements, nodes, subdivisions
- Gardening

Land Use/Ranching/Open Space

- Open space
- Wildlife habitat (patches and corridors possible)
- Farming and ranching
- San Cristobal ranch
- Rodeo de Galisteo
- Eldorado wilderness
- Not stepping on cultural toes, open almost new territory
- Unpaved CR 42

Potential for Education

- What the river can do for children

- Watershed education, consciousness

Landmarks

- Its aura for a lack of a better word, ambiance, speaks to me
- Special places

VII. How do we picture a desirable future for the Basin?

ASSERTIVE

1. Community linked by trails, a minimum of roads and Mexico/Canada wildlife corridor
2. Development and implementation, minimal/zero impact development practices and encourage restoration of the hydrological functioning of the watershed and other ecological functions
3. Regenerative building practices
4. Conservation and preservation of arch sites, ecological values, scenic values to create a context for…
5. Protection of archeological sites
6. Building on the past, basing solutions on the present. Awareness of our present condition. Tell the truth.
7. Community art; singing in community garden
8. Tend the land as a garden and don't do harm. Careful observation. Localization and sustainability within watershed.
9. Produce our own food
10. Water catchments at all future building; ecologically designed. Reuse water.
11. Corridor planning
12. Interconnected open space and villages.

DYNAMIC AND ENTREPRENEURIAL

1. A development pattern that changes from sprawl, accepts that growth is fundamental.
2. Solutions that come out of how we live and realize that everyone else wants to live or lies and makes the distinction between the dream and reality
3. County buy out not an option for creating the solution to protecting our vistas and our landscape
4. Cultural sharing. Creating human-nature interface.
5. Not wanting government intervention yet needing new methods and ideas to tackle the issues of sprawl
6. people responsible for determining their future
7. Include government, business, and individual
8. we all cant free lance anymore, need a multi stakeholder solution
9. There was a first wave, we second wave of settlers. Land values, identifying that community
10. Sprawl type development is meeting its threshold. We are the spawlmaniacs.
11. A fitness to maximize our capacity. A notion that we are at or past our carrying capacity.
12. Climatic, water availability for economic health and vitality.
13. How do we create intergenerational equity?

RELAXED

1. Synergistic approach to human impact. If businesses, they should be clean. Sustainable building using natural resources.
2. Protection of open space. Increase public access to pen space and conservation.
3. Smart growth, think how and where people live, limiting impacts of growth, model for sustainable ecologically sensitive growth.
4. Still have water in the future. Recycling water.
5. Ecological balance; smart grazing; riparian restoration.
6. Cultural diversity.
7. Limit growth, keep it the same
8. Preserve things residents' treasure.
9. More education for awareness and respect.
10. Property values stay reasonable; prevent gentrification.
11. Healthy, local economic environment – jobs, local business thrive.
12. Public transportation

PRUDENT AND INVENTIVE

1. Conservation/sustainability (cluster development, high tech waster water systems, incentives for sustainable housing, living, building)
2. create as much open space, parkland as preserves, reserves, as possible (strategic acquisition and trail system)
3. Research and educational field stations
4. reduce and restrict water use
5. Larger space requirements, large lots
6. integrated regional solutions
7. good ordinance enforcement
8. Better education/understanding of limitations for living
9. More open space access – use wisely
10. Keep basin a secret, don't glorify
11. overall community of conscious people who care for the land living in small hidden earth friendly homes
12. servers restrictions on commercial development encouraging small ecologically friendly and discouraging large franchise style developments
13. studies of demographics – how/where people go to work, etc. Information to help plan like transportation studies, etc.
14. progressive government policies/programs
15. respect for native culture and inhabitants
16. private / public cooperation
17. utilize technology an science
18. individual community responsibility
19. The Big Picture of the ecosystem
20. Implement good plans
21. community input taken seriously
22. incentives to private landowners to protect treasures
23. state/national preservation protection program for Galisteo Basin
24. Cluster development and mixed use

25. cultural/community events
26. get people out of cars – reduce investment on roads
27. predictability/stability – long range planning that works with frequent review
28. facilities limited growth
29. increase consciousness of living in watershed
30. much like it is today

ROOTED

1. Preservation of vistas and resources
2. water and wastewater
3. clustered development/appropriately sited housing
4. public accessible open space
5. natural and cultural preserves
6. Different approach to preserving vistas and resources = finding new ways to live in the basin without dense housing. Correct ways to deal with environment (world park)
7. Maintain cultural heterogeneity
8. partial return to old ways of living with the land. Spiritual connection to the land. Physical strength from the land.
9. People will have an integrated understanding of how to live appropriately in the basin in regard to resources, especially water. Educated understanding of where they live.
10. Growth linked to carrying capacity – water.
11. Fostering and nurturing a sense of place. Meaningful exchange among diverse groups.

VIII. What do all five groups have in common?

- Open space
- Carrying capacity
- Wildlife
- Independent thinkers
- Sustaining rural quality of life
- Cultural/historic
- Small local scale
- Connectedness/respectfulness
- Spiritual
- Water conservation
- Environment (natural beauty)
- Sustainable building
- Think independently, act collectively (people set direction)
- Galisteo Creek
- Difference between how to bridge dreaming and reality\
- Youth only mentioned once
- Teach the children

IX. What, if anything, can you not accept?

- Sense open space is in peril. Thus need to plan – cannot accept losing open space
- Not single view on how to preserve open space

- Can growth be more of same but smarter or do we need new template? Growth problem might resolve self through Darwinianism.
- Carrying capacity – constrict scary – can be abused as terminology
- Something missing – class issue – solutions not affordable to everyone
- Innovation does it mean expanding carrying capacity thus increase people in basin?
- Carrying capacity wrong – if want maintenance of treasures need "optimal capacity" that won't degrade treasures.
- Affordable housing not mentioned at all
- Think of carrying capacity holistically
- Hardly a mention of transportation. There is potential for ALB-SF commuter rail also Lamy-SF commuter rail.

X. Where do we go from here?

a. Check summary draft against group attending meeting
b. Umbrella organization takes vision and can take to groups such as San Marcos, Galisteo, etc. to use as overall regional guide
c. Don't overlook Santa Fe Institute
d. Have reality, vision, need strategies to figure out how to achieve – is new – need continuation that is strategic
e. This was good forum, could be used to work strategically
f. No one right now can run with this alone – model off of Camino Real group
g. Galisteo Watershed Association – potential for technical advocacy and political advocacy – important to follow up to meeting
h. Have consistent vision – like to get to specifics. What actions can be taken, but don't have everyone involved at moment.
i. Idea of council or assembly? Representation best we could make it. Value, goals, objectives. A lot of people came up with so when work independently are reminded of larger region. There are internal and external influences. Internal is what do on own property. External eg is state laws. What can we do in each arena? What are our strengths and weaknesses.

Decision was made that core group that organized meeting would take summary and craft a draft vision statement. This would then be sent back out to the participants to make sure it is correct. Once correct, participants help to take it to the larger community and to those not yet involved but should be. Following approval of the vision statement, hold a strategic planning meeting.

WATERSHEDS: WHAT ARE THEY?

WATER is on the move. IT IS DYNAMIC.
IN much the way living organisms have a life cycle; so does water have a cycle.
In brief: It circulates.

The **hydrological cycle** as it is often defined as...

Water falls to the earth as rain or snow, some on land, some at sea, much of what reaches the land will drain off the land to the sea by surface routes or below ground. The rest evaporates back to the atmosphere either directly or through vegetation. All plants on the ground absorb water from the ground & exhale most of that into the air, as a vapor, a process called transpiration. The vapor from the land mixes with the vapor from the sea and together they condense into rain giving clouds again. This is an indefinite cycle...

But how does this relate to the land, to where we live in the Galisteo Watershed?

WATERSHED: Simply defined, is geographic area defined by the flow or movement of rain or snow; surface water.

When you trace on a map the course of any major river from its tiny beginnings seaward, it is obvious that its flow becomes larger and larger. Every tributary or stream that enters it, brings a sudden increase--- IN this way watersheds of big rivers expand to enormous size: the area of land being drained by the time the Mississippi river flows into the Gulf of Mexico at New Orleans is almost 32 million sq. km. The drainage area covers roughly 730 sq. miles from Thompson Peak, SFNF, to Santo Domingo Pueblo lands. The Rio Grande draining 1000's of sq. miles by the time it reaches Mexico and the Gulf.

Hence WATERSHED's exist at different scales or levels depending on a particular point of reference.

WATERSHEDS differ from one another greatly in many ways and features than just drainage area. Much depends on climate, topography, geology, and human ecology. Taking our region as an example, in a relatively sparse vegetated region compared to the likes of a tropical environment, IN a tropical environment drainage density is small, heavy vegetation coverage. Whereas our land surface is easily erodible---soils often characterized by weakly consolidated clays, our drainage density (channels or streams per sq. unit area) might be 50 or 100 times that the drainage of an environment where bedrock is not as easily eroded by streams, where rainfall is being taken up and transpired by lush trees and vegetation.

Our drainage density is the average length of the stream channels per unit area of land within the watershed.

This can tell us a lot about our conditions and brings rise to a whole host of others factors that help us to determine the nature and characteristics of our watershed.

WHAT IS WATERSHED MANAGEMENT?

Succinctly defining "a watershed approach" or watershed based-planning, is not an easy task. It is not as easy task because the planning approach/management strategy really has to reflect the uniqueness of the people of that particular watershed (as well as all the environmental variables). From a planning and management perspective, these variables or variations have everything to do with the human population living there.

IT IS AN APPROACH that can be creatively applied to serve different needs.

John Muir was once quoted as saying,

"When we try to pick out anything by itself, we find it hitched to everything else in the universe."
I believe a contemporary understanding of watershed management reflects this sentiment.

New Mexico Environment Department Secretary Ron Curry gave a speech in November at the NMSU Water Resources Research Institute's 48th annual conference. He started his speech with one word: HOLISTIC. He was stating this as his new management approach, following others States' lead with improving state resource management.

"Watershed Management" is often associated with terms such as,

"Interconnected"
"Integrated"
"Multi-jurisdictional"
"Multi-displinary"

This strategy of "Watershed Management" or watershed based planning, acknowledges an *understanding that many land managers and scientists have held for a longtime* **that issues overlap,** (for example); streams need to be studied alongside playas/wetlands, land uses and community activities are tied to water quality; that groundwater is connected to surface water, that wildlife habitats depend on the conditions of the water and the land, that upstream is interconnected to downstream..

Human affairs are not conducted in isolation, nor do they play out as separate and independent acts; often having implications that go beyond the immediate situation that may be in hand.

Watershed management is concerned with human related activities such as urban runoff, private property interests, sustained economic vitality, beneficial uses of water, net environmental benefit and water quality concerns like pollution and contamination issues.

Watershed management is promoting cooperation among the various and even at times competing interests, while protecting the watershed natural health; public health.

Despite it being an ambitious goal for any size community large or small, practicing watershed management ideas should not be viewed as a daunting.
By acknowledging a need to work together, problems **will be addressed more directly**.

So what we are basically talking about is **PEOPLE Co-operating**.

Arizona defines those who participate in this co-operation as *stakeholders*, and defines stakeholders as "individuals, organizations, and agencies that are involved or affected by water resource management decisions for a watershed management zone."

Assembling watershed management teams to address these varied interests can often involve all levels of government, public interest groups, industry, academic institutions, private landowners, and concerned citizens.

There are various implications for this cooperation in action and new types of government may be established or in order to facilitate this **information sharing and coordination of efforts**. Hoping that through this approach, regions can avoid overlapping/ conflicted or insufficient efforts. Rather than looking at this approach as a bottom up approach (purely community level) or a top down strategy (from the federal government) Instead, its best to look at this where stakeholders are partners who together adopt water management goals that they have identified and created through mutually agreed upon principles and priorities and shared responsibilities.

JW will now give us some examples of where this cooperation in action in various areas of the country has succeeded.

Watershed Project Examples:

- One of the oldest and on of the newest: Similar in size as Galisteo watershed
- Examples of why watershed-wide planning was essential: to protect essential values of the area for the community at a landscape scale and to prevent piecemealing of planning efforts.
- What it takes: vision, initiative, sharing, establishing a management structure, setting up a legal system, implementation, public education, monitoring.

Catskill/Delaware Watersheds and Croton Watershed in SE New York State

Problem: NY needed clean water supply for city's drinking water for the future.

Goal/Solution: Watershed protection and planning to secure New York City's Water Supply System: 1.3 billion gallons of safe drinking water daily to the 8 million residents of NY and to visitors, commuters, and 1 million people in 4 counties north of NYC.

Systems:

1. Surface water sources: 90% provided by 19 reservoirs and 3 controlled lakes in the Catskill/Delaware watersheds (1,969 square miles); 10% from 12 reservoirs in Croton Watershed.
2. Wells in Eastern Queens (less than 2% of city's use in 1999).

Management Agency: NYC Department of Environmental Protection (DEP)

Water management largely depends on watershed-based resource conservation programs that affect every aspect of land use:
1842: Croton aquaduct constructed for NYC water
1885: Croton aquaduct and pipes enlarged: NYC grows, consumes a lot of water
1898: Annexations increase water demand
1900s: NYC buys watershed land in the Catskill Mountains: dams, reservoirs.
1927: Catskill water supply systems completed
1965: Delaware waters supply systems completed
Last 25 years: working landscape systems for management of the watersheds:

- Land Acquisition, Conservation Easements
- Watershed Regulations for water quality protection; includes inspection, water quality monitoring, waste water treatment inspections, enforcement of regulations, legal action against polluters. Septic system management and improvement, stormwater pollution prevention plans (now also NPDES).
- Partnership Programs administered through the Catskill Watershed Corporation: stormwater management; best management practices; economic development that is consistent with water quality objectives. Example: Watershed Agricultural Council, Watershed Forestry Task Force: created the Watershed Forestry Program: Tax incentives, Logger training, Model forests, Education, Economic Development. Similar programs for farming, urban areas.
- Wastewater treatment plant upgrades.
- Upstate Capital Improvements (for water storage and distribution facilities).

Cienega Creek Watershed Project

Location: 50 miles SE of Tucson, from Saguaro National Park and Coronado National Forest Rincon Wilderness (in the north) via Cienega Corridor (north of I-10) to Las Cienegas National Conservation Area and Sonoita Valley in the south, near Sonoita and Elgin.

Problem: Threat of destruction of a valuable landscape (wildlife corridor, visual quality, and archaeological sites) by scattered residential development (ranchettes and small subdivisions) and mining and mineral lease claims.

Goal/Solution: Protect, steward and enhance the natural and cultural resources (values) of the Cienega Creek watershed (Cienega Corridor). Community-based conservation and planning organizations and legal land use protection measures.

Systems: (1) enactment of the Las Cienegas National Conservation Area, (2) establishment of Sonoita Acquisition Planning District, (3) establishment of the Cienega Corridor.

Management Agency: BLM (Tucson Field Office), in collaboration with, Sonoita Valley Planning Partnership, and Cienega Corridor Conservation Council.

1995: BLM (Tucson) decided to take a collaborative approach to completing a long-term land use plan to guide BLM-administered lands within the Empire-Cienega (Ranches) Resource Conservation Area (center part of the Cienega Watershed).
1995: Establishment of SVPP and monthly meetings about recreation, livestock grazing, mining, wildlife, vegetation, water quality and quantity, and cultural resources. Development of a shared vision and goals for the Sonoita Valley (tributary to Cienega Valley).
1996: Sonoran Institute facilitated a 2-day public visioning session with 200 people about the entire watershed with a focus on the Cienega Corridor (native grasslands, endangered wildlife, scenic views, cultural history). Attempt to generate community-based, local solutions.
2000: Las Cienegas National Conservation Area (42,000 acres) established. Establishment of Sonoita Acquisition Planning District (100,800 acres): gives protection against mining claims and mineral leases and regulates off-highway vehicle use. Includes BLM, State and some private lands.
2002: Community-based conservation organization established for “Missing Link” area (north of I-10): “Cienega Corridor” (was left out of the LCNCA bill because of land dispute issues). Serves as an important wildlife corridor, joining the LCNCA and SAPD (total 142,800 acres) with the Catalina and Rincon Mountains.
2003: Las Cienegas Resource Management Plan Record of Decision signed (BLM).
2004: Collaboration between Sonoran Institute, SVPP and CCCC(?) to coordinate funding and activities for public education, monitoring, and plan implementation. SVPP works with BLM to set priorities for implementation. Issues: recreation sites, transportation, education, vegetation management, and monitoring.

How does this relate to our watershed?

Identifying watershed values and qualities that are important for the region in the future.

E.g. Water source areas (for wells, riparian area health), visual quality, wildlife corridors, rural character, and historical/archaeological values (for residential and tourist markets).

What do we learn from these examples as option to protect these values?

- Collaboration between communities and government agencies is essential,
- Community organizing and involvement (visioning, committees, meetings),
- Demo projects (on-the ground implementation),
- Public education & outreach (video, brochures, monitoring, meetings),
- Economic incentives (taxation, easements, economic development, local jobs, cost savings information, incentives for septic system and storm water management improvements, wildfire prevention incentives, road management incentives: insurance, tax, subsidized innovations, TA, public recognition),
- Regulation and enforcement (enactment of protected areas, local regulations),
- Land acquisition and management (open space areas, conservation easements).

What do we do in the GWRP:

History: How did it come about?

1997: EWI identified a need for community involvement and community organization to halt erosion in the Galisteo Creek and retain water in the soil for restoration of springs, wetlands, vegetation, and wildlife, and grazing.
1998: Community meetings in Eldorado and Apache Canyon-Canoncito.
1998: Tours with USFS, NMDOT, NMED. Discussion of monitoring of water quality to identify problems. Community needed more information, identification that there was a problem. Agencies did not take initiative.
1999: McCune Charitable Foundation provided a 2-year grant to begin collecting information, educating residents, setting up school programs, and organizing more community meetings.
2000: NMED (EPA) offered a grant to begin with demonstration sites for stream and land rehabilitation to reduce sediment loads in the creek from erosion.
2001/02: These funding sources triggered additional support from FWS, NACO, Rio Grande Rio Bravo Coalition, McCune F., USFS, private donors, and a follow up grant from NMED/EPA.

- In addition, much public support and volunteer activity.
- Network with many collaborators and partners: Local Schools, UNM, EcoVersity, landowners, Fire Stations, Co Planning, Quivira Coalition, SF Botanical Gardens, SFCT, NM Game & Fish, NM State Forestry, NM Mines & Minerals, US FWS, US FS, ACOE, NRCS, Valle Grande Grassbank, local businesses and consultants.
- Implementation of stream restoration work, managed grazing, wildfire and forest management planning and education, wood land management, monitoring.

2003: Recent attempts to form a watershed association, based on monthly meetings, WRAS update, UNM student work, collaboration with SFCT, and dialogue with SF County Planning department, leading to this seminar.

Time Frame

PREHISTORY

1125 Drought

1276-1299
Great Drought

Events

700-900 AD
Turquoise
exploration begins

Human Settlements

12000 BC
First Indians reach
basin

10500 BC
First confirmable
people in Galisteo
Basin

Native Americans drawn to mine
turquoise from Cerrillos Hills—
Mt. Chalchihuitl.

Basin alternative hunting and
gathering area and trade route for
iron and turquoise.

1285
First evidence of
using more long
term small pit house
villages near Lamy.

1300
Chaco and Mesa Verde
empty. Major influx of
people into Basin.

Ecological Impacts

Near current Galisteo Village, land is an alluvial fan that was created from sediments that spilled over the opening in the volcanic ridge north of Galisteo. The water built up behind the volcanic ridge provided the fan with a permanent trickle. Alluvial fans are typically well drained allowing for deeper ground water.

Time Frame

1300-1500'S
GREAT PUEBLOS

Events

Circa 1400-1450
Dine invasion
Apache and Navajo Athabascan speakers arrive and disrupt existing populations with raids.

Human Settlements

1350's
Conflict with small villages. Burnt Corn burned to ground. Lots of transition. Early settlements disappear replaced by San Cristobal, Pueblo Colorado, Pueblo Largo, Pueblo Shè, Colina Verde, 1 unnamed, Galisteo, San Lazaro, San Marcos. All but San Cristobal will be extinct by Spanish era.

1525-1535
Pueblo abandonment and consolidation caused by either invaders or drought.

Ecological Impacts

Most of the large game species (bison, elk, bighorn sheep) may have been exterminated from the basin plains.

Time Frame

1540-1598
SPANISH COLONIAL

1660's-1670's Drought

1696 Drought

Events

1581
Spanish begin mining silver in Cerrillos Hills

1598
First Longhorn cattle brought from Mexico

1610
Santa Fe established as capital of New

1626
Missions built at Galisteo, San Cristobal, San Marcos, San Lazaro

1680
Pueblo Revolt

1692
Spanish re-conquest.
End of turquoise and galena mining.

Human Settlements

1540-1542
Coronado explores NM for El Dorado

1598
Don Juan de Onate settled at San Gabriel, Spanish come to stay. Profound changes to goods available.

1600's
Payments demanded by Spanish of Pueblos may have pushed already marginal environment beyond capacity to support pueblos and Spanish.

Many Pueblos abandoned due to drought, Plains Indian raids, and severe religious crackdown by friars.

Late 1700's
Tewas leave basin for Hano and Santa Domingo. Drought. Small Pox. Raids.

1790's—1814
Hispanic troops move to Galisteo.

1799
First Hispano settler, Juan Aragon receives grazing permit for Galisteo.

1816
Village of Galisteo born.
19 Hispano families settle.

Ecological Impacts

The Village has always been a cross roads because of the water, the grassland fed by the water spilling over the volcanic ridge and the absorbed by the alluvial fan. The Village had made small dams and acequias near the volcanic ridge to divert the water to terraced fields on the hills west of current Galisteo (the location of old village). This probably controlled the flow even more so that they could grow hay without having to deal with the creek jumping left and right in big floods. The dams buffered the flows.

Time Frame

1821-1846
MEXICAN INDEPENDENCE

Events

1821
Restrictions lifted on foreign visitors to NM. Visitors bring goods for trade.

1821-1822
Ortiz Gold Rush. Gold discovered 1822.
Santa Fe Trail.
Quest for mineral wealth begins in order to conduct trade with the Americans.

1827
San Cristobal Grant established by Spanish Mexican Treaty

1835
Coal found in Ortiz Mountains.

Human Settlements

1830's
10% of NM's winter population resides in Ortiz Mountains seeking gold.

1892
Madrid founded.

Ecological Impacts

1820's-1830's
Beaver trapped out of all streams in the Sangre de Cristos.

Major changes in the hydrology and soils of the upper watershed as more water rushed down. Forest began drying up from lack of infiltration and dropping water table as stream beds and gullies began to deepen.

Time Frame

1846-1912
TERRITORIAL

Events

1848
Treaty of Guadalupe Hildago. Stealing and manipulation of the land grants for Anglo

1852
The Army under Capt. Marcy set up a camp for horses at old Mexican/Spanish fort in Galisteo.

1860's-1880's
Cattle Boom

1862
Battle of Glorieta Pass.

1877
Major flood—Galisteo

1879
Cerrillos Hills Silver Rush

1880
Arrival of the Railroad. Full-scale migration and trade.

Cattle ranching industry.

1906
Forest Service enforces forest reserves. Cattle removed.

1911-1912
Barbed wire fencing begins. End of free range.

Human Settlements

1880
Lamy village founded.

Small villages along Galisteo Creek.

Irrigated agriculture and bean farming.

Cerrillos and Madrid are boom towns.

Ecological Impacts

Galisteo closest area to Santa Fe with good drinking water and grass cover for grazing.

1879
L. Leopold notes Galisteo Creek not yet incised in Village. (It ran at location of HWY 41)

Flood in 1877 dumped sediment in Galisteo Creek. Creek moves! Ruins acequia system.

RR cattle loading stations on Galisteo Creek create areas of major overgrazing and erosion.

Overgrazing and deforestation cause major erosion.

RR tracks cut flood plain in half. Accelerates run-off, erosion, and down cutting.

Time Frame

1920's—1950's STATEHOOD

1920's
3-year Drought

1950's
Drought

Events

1920's
NM tourism begins.

1920's—1930's
New Deal

Rural electrification

Local markets disappear

1926-1934
Major railroad restoration works using concrete including dams and levess in Galisteo River.

40 foot dam built in the Galisteo Creek at McKee Ranch

Outdoor infrastructure created by CCC

Human Settlements

1920's –1930's
In the Depression, people move out of Galisteo to find work.

1940's-1950's
Galisteo Village nearly deserted

Small ranchitos consolidated in Galisteo by Ortiz y Pino family.

Larger ranch transformation/ turnover—McKee to Cook to Ford to Thornton.

Ecological Impacts

Dust Bowl

Russian Olives and Salt Cedar planted to stabilize stream banks.

More stream erosion of banks opposite hardened banks.

US Army scopes out water-shed to build Army training facility east of Cerrillos. Not enough water to support Army camp or base (Theiss Report 1942)

Time Frame

1960's—1980's

1960's
25 year wet cycle begins

Events

1960's-1970's
Paving of HWY 14 and HWY 41

1965
Flood Control Act passed.

1970-1975
Galisteo Dam built to retain sediment and flood water (ACOE) in Canada de los Alamos.

1950's-1960's
Floods.
More enforcement work on the railroad, concrete slabs, etc.

1974-1975
I-25 turned into a four land freeway

1980-1986
Ortiz Gold Mine reopened for production.

Human Settlements

1970's
Galisteo, Madrid, Cerrillos redevelop with new migrants.

1975
Simpson Ranch out of business. Plans for Eldorado de Santa Fe.

1980
Construction on Eldorado begins.

1981
First development in Galisteo—Ranchitos.

Ecological Impacts

Increased run-off and erosion.

1970's
Fingerlakes and other lakes and springs still have water, but dry up in this period.

Invasion of Salt Cedar and Russian Olive begins.

Major thinning and logging in the upper watershed.

1980's
Ortiz Mine rehab. Swales built to manage storm water runoff. Goes into Cunningham and Dolores Creek. Contaminated with cyanide and sulfates.

Canada de los Alamos dam dug out. Fills quickly.

Time Frame

1990's

1996
End of wet period.
Drought.

Events

1995-1996
Rehabilitation of Ortiz Mine nearly complete.

1998
I-25 median paved.

ACOE increases height of Galisteo Dam—adds large spillway.

Forest Service recognized erosion from roads and trails—redesigns roads and trails.

1999
Beneficial Farm builds dam in Arroyo Salado.

Human Settlements

1990
Eldorado area population 2,600.

1990's
Rowe Mesa being slowly developed.

1996
Singletons bought San Cristobal for cattle ranch (800 head of cattle in good years, 400 in bad.)

1997
Thornton Ranch taken out of production—slated for development and open space.

1990-2000
The City of Santa Fe grew by 6,344 while the County (not including the City) grew by 24,030. 1 of the 6 fastest growing areas of Santa Fe County was in the Basin—Eldorado and the surrounding area. The County foresees growth increasing in other portions of the Basin as Eldorado reaches build out.

Ecological Impacts

Enormous erosion on Rowe Mesa.

I-25 storm water evacuated with large concrete drop structure and box culverts. Creates 20 ft. deep gullies on south side of HWY in 1 year.

Erosion of the sediment in the Galisteo reservoir begins. Salt Cedars die and fall in the creek. Costs increase.

Bad grazing practices and mine impact on Cunnigham Creek and Arroyo Chorro drainage basin. Dumps large loads of sediment into Galisteo Creek causing it to go underground.

Bad grazing practices on Thornton Ranch cause major erosion along Arroyo de los Angeles drainage—dumps largest amount of sediment into Galisteo Creek.

Upper part of Arroyo Salado completely owned by gated community.

Many homes and roads built cause erosion and heavy runoff.

Time Frame

2000's

Events

2000-2004
EWI starts watershed restoration, erosion control, grazing treatments, wildfire management.

2000-2002
HWY 285 doubled between I-25 and Lamy.

2001-2002
State mine and minerals completes mine tailings project in Madrid.

Cerrillos Hills Park developed. Mining halted except for gravel.

2003
ACOE proposed to spray Salt Cedars in Galisteo Creek. Large public outcry.

Santo Domingo sprays hundreds of acres with Arsenal.

Human Settlements

Increased migration due to information revolution. People can live/work anywhere.

Growth of Albuquerque having impacts on Santa Fe region.

2000-2002
Eldorado Southside built up.

Rancho Viejo development begins.

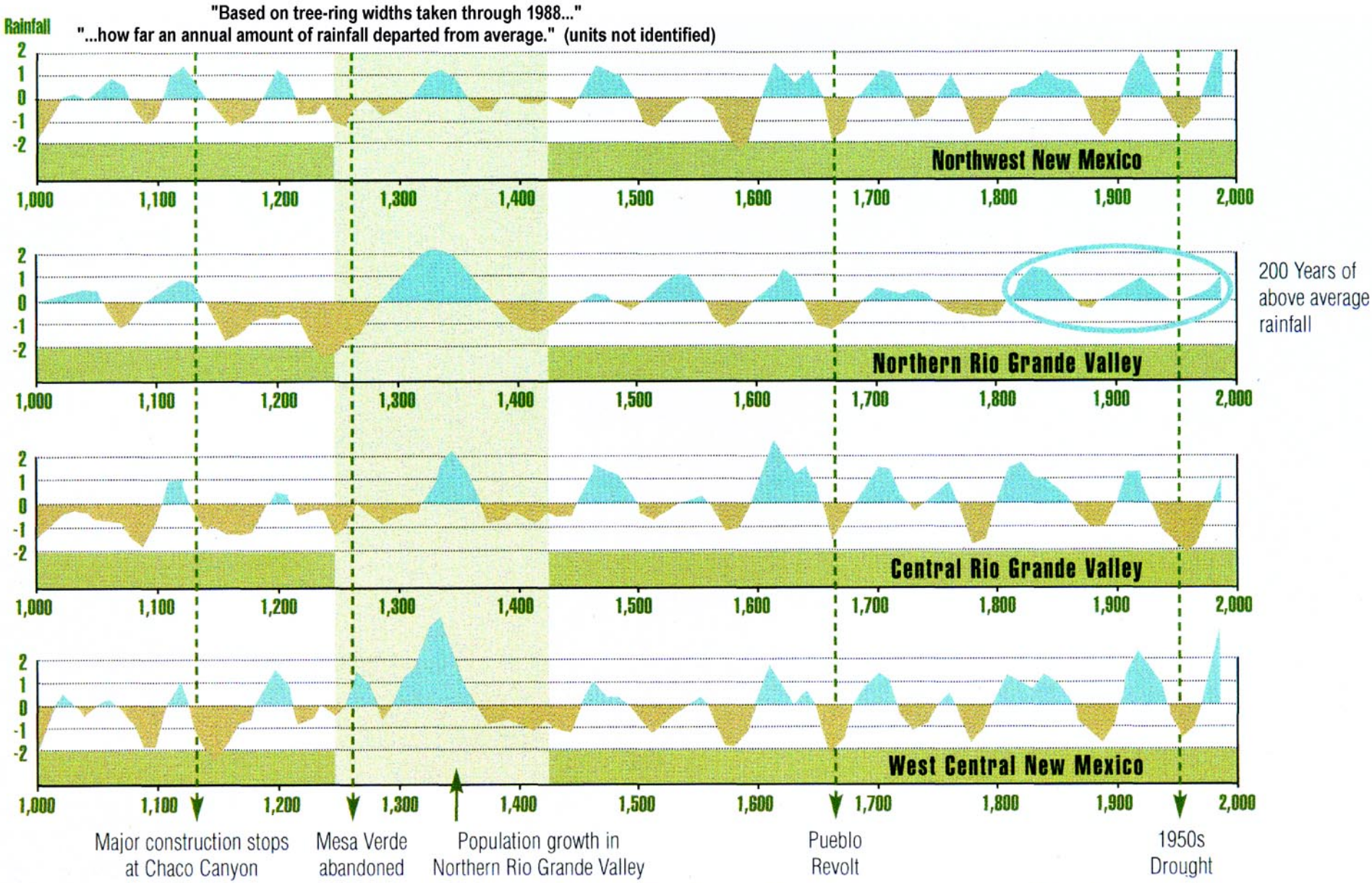
HWY 14 area development increases.

Ecological Impacts

Past 120 years
Water table down.
Cryoturbation.
Defluoculation.
Creek down-cutting.

Global warming.

Availability of water, natural gas, propane.



This graph by Timothy D. Maxwell incorporates tree-ring data compiled by F. Ni, T. Cavazos, M. K. Hughes, A. C. Comrie, and G. Funkhouser (2002).

Participant Interviews – Galisteo Basin Workshop

1. **What makes you optimistic about the Basin?**
    - Wonderful place to live.
    - Has changed slowly. There is a good community of environmentally conscious organizations and people.
    - Open space/conservation movements impressive. New administration from State Parks/David Simon. BLM designated 1000 acres from disposal to hold forever. BLM/State Parks looking at possible State Park with Petroglyph and Cerrillos Hills. Wells bill – would have allowed state engineer to designate management area – take some water needs seriously. Killed by Ms. King own rep.
    - Wealth of opportunity for improvement in basin. Encouraged by people becoming more aware and willing to come together with common goals.
    - GREAT OPPORTUNITIES AND STRONG COMMUNITY INTEREST/PARTICIPATION
    - Because of people in the community who participate and are willing to understand and monitor, to altering attitudes about water, development, and growth.
    - Basin a good basin. Hopeful it will continue to be a beautiful river. Won't go way. Also real caring people involved. The activity, interest, dedication, and knowledge of the people.
    - No expectations.
    - I think we can resolve our problems because people have to. If ever lived without something – like wwII with rationing – will understand. Have become so affluent that affluency gives us the right to use and consume without any concern for future use. In learning to live without understand what is to have to do without. Kids today don't have to do that.
    - Beautiful place to live, people are nice, definable and manageable unit to examine. A lot of what happened in basin before was extractive industries. That has been minimized to some extent.
    - People are talking about it at this scale. Only way we can do it. Many small groups out there to get things going. Has to be this scale.
    - Not optimistic or hopeful. The basin just is.
    - Surrounded by SFNF which is not untouched but neither highly developed nor likely to be in that zone. Makes optimistic that there is capacity to preserve more pristine areas of it. Cannot say that for the area around the Santa Fe River.
    - Not very hopeful these days – concerned watching it change.
    - Basin is a special place. Very old and spiritual place. Adding on to business because it is special. Feel it is magical.
    - That is isn't degraded beyond realistic recall, that there are so many groups and individuals motivated to a regional view of its viability.
    - No water. No one else should move out here. Eldo overextended and oversold its water. Supposed to be a moratorium but it is the busiest moratorium I have ever seen. Galisteo is on a natural spring that is consistent. Even the old guys say never goes down.

- Consciousness raising that he has witnessed supporting open space, habitat, and land. Double edged sword since 25 years ago it was not an issue. More growth results in more people interested in maintaining open space. Encouraged by their participation.
- Eternal optimist. Believe restoring land is huge task but doable. As natural world deteriorates, believe each person will realize they can do something through their choices. Techniques are simple. EWI wants to show people. Starting with upstream because that effects the downstream. To own amazement, have begun to build a constituency for watershed health.
- Doing things like what we are doing Saturday. Watershed association is bring people together from all over the watershed. So, the people who live here.
- Having a say in how growth is going to happen. Want to leave as much undisturbed as possible. Planning gives us a say.
- My neighbors commitment to the health and well being of the area.
- Quality of human resources, pleased by what EWI doing, blessed with water in Galisteo.

2. What is your biggest concern for the future of the Basin?

- Growth not bad thing, but we need to do it with sensitivity. Trails and open spaces are the key to maintaining the wonderful characteristic of the Basin. No matter what else is built, as long as trails and open space, it mitigates problems of growth. Maintain quality of life.
- Climate change is affecting southwest (planetary and southwest).
- Unplanned growth. Significant influence that developers have and general political impression that jobs, economy, liquidity that development generates sustains local economy.
- Locally, erosion. Biggest issue. Responsible for lack of vegetation, condition of roads contributes to it, impacts the viability of the stream for a healthy riparian area. Erosion is a function of human disturbance. It is the way the environment expresses itself. Basin wide, development aggravates erosion and riparian areas. County has not yet enable itself to provide for watershed protection. The county needs to be brought into the discussion because they are the one's with the resources and regulations capable of dealing with the impacts.
- NEED FOR SENSITIVE DEVELOPMENT TO PRoTECT EXISTING RESOURCES
- Become a suburb.
- Forest management and thinning. Complete lack of proper attitude. Government and community at odds with concepts. No involvement of the public by the government in decisions. Privatizing work vs. community.
- None.
- We don't build it up. Lived in Denver 7-10 miles out, and enclosed. Ugly, crushing. Too much on land. They had more water and infrastructure. Water does not come free and easy for keeping lawns green. Preserve and enhance what we have. Reach equilibrium. How are we going to get our water source if we don't. We can all do with a lot less. Learn to use what we have available to us. What happens if we all collect our water? Small by comparison. Capture and

keep. Retention. Ban lawns. Use less. Require larger land masses per one family. Less density. Don't believe in villages. Need to space people out on big parcels of land. That way develop the way they want within the restrictions of the county. People want view, not to see others homes.

- Water. And whether the environment is improving or degrading. Open question.
- Land use and water. Land conservation and open space. The river itself. Protecting natural elements and from the interest of development.
- That existing residents will try to make other people's property their own permanent open space.
- Overdevelopment. Lack of coherent study by authorities on limits to growth and limits to water. Not being addressed as a critical issue. The Pinon Bark Beetle is not the problem, it is the undertaker. Most people here don't understand that. Most people here have not experienced anything but moist, generous period. Permaculturist look for patterns. There are two types of zones that have significant die off. Trees on the ridges and trees in semi-rural areas with wells.
- Continuing life, natural and human, being able to live in the area. If not careful, the basin won't support us. More than water. It is more connected. We are dependent upon survival of the area. Also concerned with poisons.
- Limited resources – water. We recycle every drop. Have to be careful. Spent 6 years planning to do expansion of business. Need time to do it carefully and to not destroy the place. Development can occur, but needs to occur in a good way – careful and sensitive. Can be done right. Afraid development will bulldoze area without sensitivity. Destroy the land.
- Overdevelopment.
- Disrespect for landscape. Manifested by looting of archeological sites, invasion of habitat and wild landscapes by people using ATV/ORV, mountain bikes, even horsemen and hikers. Speaks to a bigger issue of conscious raising and education. How do we impact land? Needs to be respected in a different way than it is now.
- Growth. Some people claim that there is more water than there is. Water is the issue. Growing locally first. Manage growth patterns. People need to demand from Commission, but need to know what to do first.
- Growth and water. Outgrowing our water supply.
- Overlooked as really important ecological piece of land. Growth. South is the only way Santa Fe can grow. Keep in natural state as much as possible. How do we manage it? Maintain it? Who? What will it look like? How do we reach consensus about it?
- Unmitigated growth and its negative impacts on the watershed. The salt cedar spraying – impacts seems huge. Impact of the drought. Beetle having large impact area. Interested in health and well being of community and watershed.
- Water quantity and too much growth.

3. For you, what will be a desirable outcome from the meeting on the 28th?

- No. Just that everyone looks at everything in a different way/different perspective. Good always comes from getting people together to talk about thing. New ideas and ways of looking at things that would not have otherwise.

- See watershed brought together with systems thinking - in that all things are connected. That there will be something that we can share with all of our neighbors about what was discussed.
- Anything. Mutual education. Cross fertilization. Cooperation. All the –tions.
- Understanding and identifying what the problem is. Cannot solve it if we don't know what it is. Fundamental problem – need to characterize it in a way that people can understand.
- BETTER UNDERSTANDING OF OPPORTUNITIES AND NEEDS FOR OPEN SPACE, PARK AND TRAIL DEVELOPMENT IN THE AREA.
- More knowledge and information for self. Meeting people with similar feelings. To gain some sort of focus and specificity. Seems a little bit going on here and there with different organizations – running in place.
- All these fairly fascinating people who interested in the basin are able to meet, make contacts and do some networking.
- No expectations. Gain information.
- Find that we (as a groups within the area - county, galisteo, watershed) work together, come up with an overall idea that would suit all of us, and a grand plan we want to work towards. Like a 5 year plan that gets revisted. Limitation of what will happen – benchmarks. Monitoring. Are we on schedule? Project ahead what needs to happen. People would like to know, we are 2 years in, are we doing what we said we would? Should we make revisions or changes?
- Work at UNM and go to a lot of meetings. Would like a sense of a shared agenda, what is doable, and a plan to move forward with them. Community building is good, but need more concise and active outcome.
- Establish a permanent group that meets on regular basis and has funding to operate.
- That we all agree to go on about our own business. No more protests or complaining. Agree that my land is mine, yours is yours, and not try to control each other.
- To see potentially becoming more connected with people in the basin doing and involved with basin. Citizen concern will be coherent and heard by government. That an action plan will develop. I am in action personally, but don't know what it takes to get others involved.
- Don't really know. Not going with any preconceived notions. Agreement would be helpful. Learning more in the first half of the day.
- No expectations. Wanted to give something back to EWI who have been working on creek. Want to help EWI expand what they are doing.
- No more people can build houses here because already pressing limit. Move out trailers.
- Not sure what agenda is – preface by saying stopped going to meetings because not productive since could do more on own. Structurally, direct focus on some 2-3 issues to cut down on deviation, detours, details. One or two results that people can agree upon or consensus on a result. Not more issues on the table. In looking at invitees. There are different viewpoints in the Basin. Feeling is there is a lot of people working separately on a lot of issues. Coalesce into stronger unified voice

could be effective. What I want – get rid of ORV's, get County to take a stand and make a plan and implement it with follow through, stop taking and take action.

- Begin to gather momentum; build a constituency for the County to support them creating a master plan that supports environmental guidelines. What density ought to be and where it ought to be located. What we need is to create a model of what sustainable homes are so that it can be studied and demonstrate to the county what is possible. People won't be able to deny it, but need to be able to show results.
- Having gotten together and having a next step. Vision and direction. More participation in community in Galisteo. Especially from people who have lived here a long time.
- Greater understanding – clearly understand what is basin is, know more about what resources there are, how important the watershed is? Clear picture of what people are trying to do now – short and long term. Hear people's opinion on how what they see. Go and learn.
- Going to hear what is going on with watershed association and galisteo planning. Learn about history and ecology. Beyond that connecting with larger community. Begin to see some sensible plan unfold. Hope not too heavily facilitated. Can be reductive.
- Not clear on point of day. Supportive of watershed association and watershed concept. Further that effort. With politicos, Mike Anaya, greater sense of controlled growth is needed. Already problems with wells at Saddleback Ranch and Eldo as well as around HWY 14. How can you ignore evidence that water is an issue?