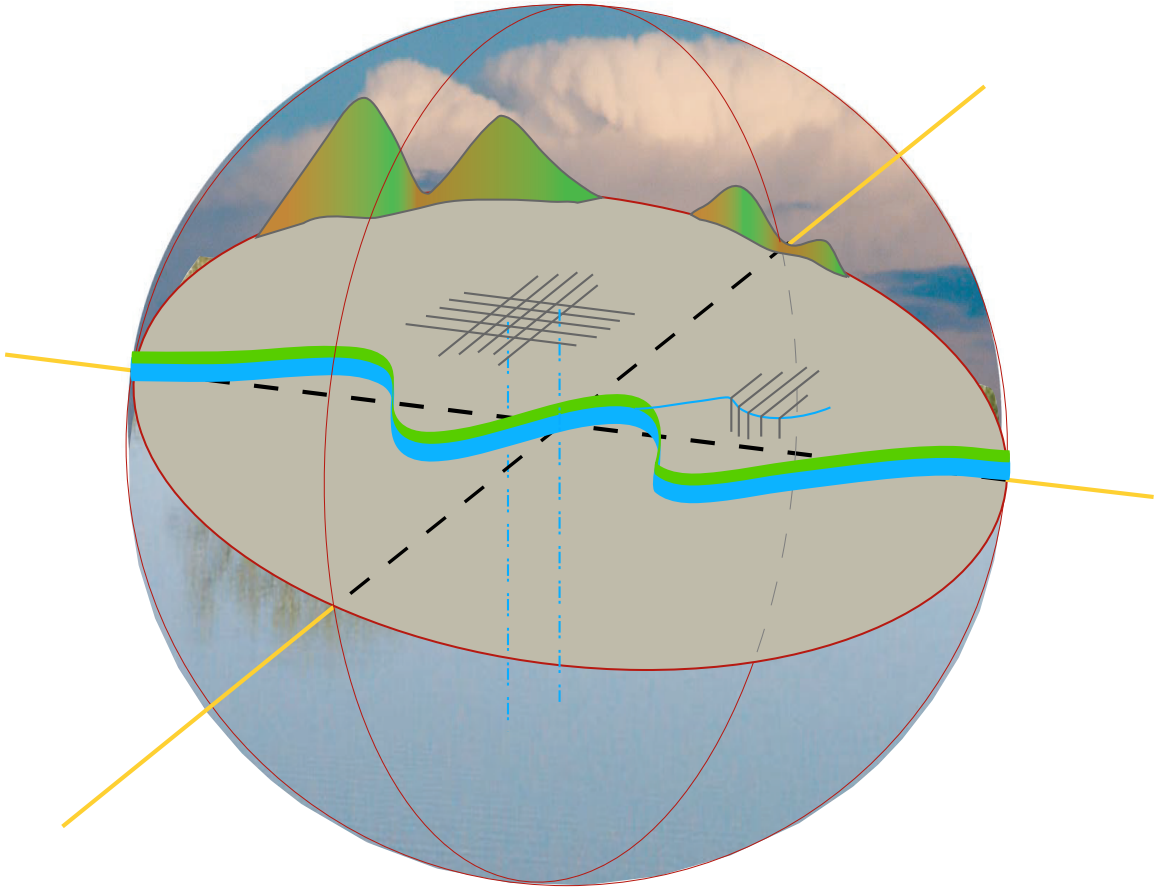


# **Supporting Document H-8**

**Report from Ted Jojola**



The globe represents a worldview. Its depiction is informed by both an indigenous and scientific paradigms. From the indigenous paradigm, the patterns of human settlement occupy only the intermediate and thinnest layer of the earth's surface. The relationship between this layer and the environments that sustain it (both above and below ground) serves to depict the unique culture that has evolved as a result of successive generations of human habitation (going back at least 11,000 years). The concept of "mother earth" as pertaining to sustainability and the concept of boundaries is depicted by the 7-directions (4 cardinal, center, zenith and nadir). These directions have shaped the region's sense of time and place.

From the scientific paradigm, the riparian environment is a complex hydrological system that is renewed through the water cycle. The Rio Grande River is the dominant physical feature that carries surface water and serves to replenish the aquifer. Because this river flows through a high-desert steppe, it meanders through the landscape like a "ribbon." The course of the river is thin and narrow. The top-half of this narrow ribbon is represented by the bosque. It consists of the verdant foliage that is sustained along the banks of the river. The bottom-half of the ribbon depicts the river and the invisible moisture that seeps into the aquifer.

Over the eons, human beings have actively intervened in shaping this landscape. The interactions of human activities over time have developed human settlements that actively utilize surface and groundwater for their subsistence. These interactions have evolved into two distinct patterns of land use. These two patterns are the core of the region's cultural human landscape.

One major land-use pattern is the grid. It is characterized by rectangular properties and urban patterns of behavior that are highly dependant on groundwater. The communities that evolve from this land-use do not necessarily build along the river. They can exist adjacent to it. The mining of groundwater for domestic usage is possible because of pumping technologies.

The second major pattern is the long lot. It is characterized by "traditional" communities that are built alongside swaths of land that front upon ditch systems. Due to the practice of irrigation, they are dependant on diverting surface water. Unlike many other regions of the nation, the Middle Rio Grande River is a multicultural population that has a long and sustained history of land-tenure based communities. Land-tenure results in the evolution of distinct worldview concepts as represented by historic communities where families continue to sustain themselves on the same land, over successive generations.

Today, the struggles over water can be discerned by relating the problems encountered when society at large attempts to sustain one practice over the other. As such, choices that arise in the allocation of water toward the preservation of the region's unique cultural identity are necessarily value-based judgments.

A final consideration is the result of lifestyles that are shaped by culture. Lifestyles represent patterns of human behavior that serve to sustain a community. Lifestyles can engender both good and bad water habits. Changing the bad habits will require a concerted educational campaign.

Although this aforesaid approach cannot include the full compliment of measures used in a McHargian landscape analysis, the water regimen becomes comprehensible by deciphering the hydrological pattern of the river and aquifer and how human communities have appropriated surface and subsurface water for various uses. This human-ecological approach distinguishes between the surface water users and the groundwater water-users. The impact upon the riparian ecology by each group is significantly different.