

Taos Canyon Neighborhood Land Use Code (2/28/09 draft)

Appendix ___ to the Land Use Regulations of the County of Taos
Taos Canyon Neighborhood Land Use Regulations

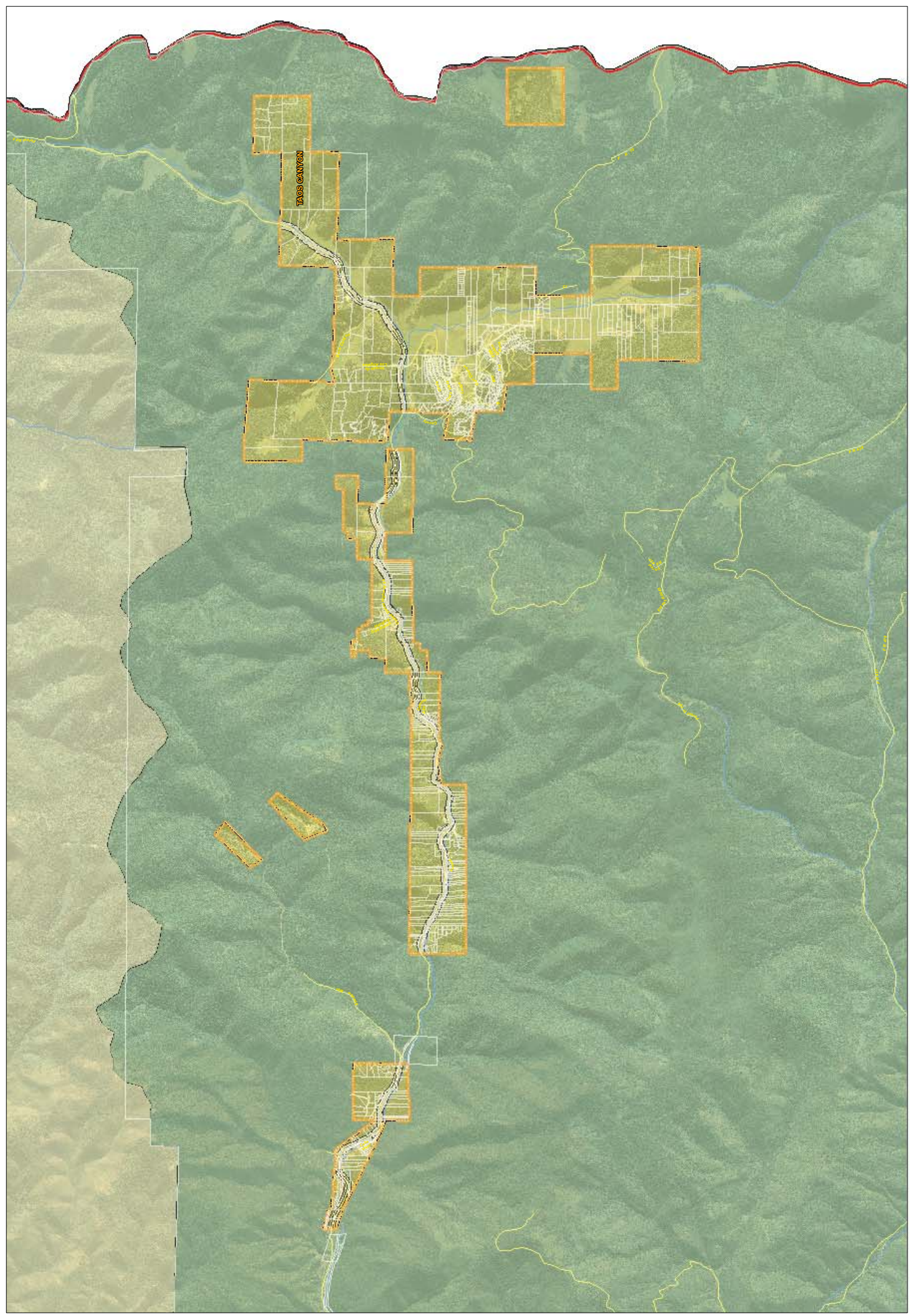
Section I. Purpose and Intent

- A. **Official Regulation.** This appendix is incorporated into the Land Use Regulations of the County of Taos.
- B. **Establishment.** This appendix establishes the Land Use Regulations for the neighborhood of Taos Canyon. The boundaries of this area and the boundaries of zoning districts established herein are described and shown on the Taos Canyon Neighborhood Land Use Map in the Taos County Planning Department.
- C. **General Intent.** The intent of this appendix is to assist the Taos Canyon Neighborhood in achieving the following objectives:
- Preserve Taos Canyon as a quiet, clean, safe and beautiful scenic byway in which residents enjoy a high quality of life.
 - Maintain the natural beauty of the canyon as a Scenic Byway Corridor.
 - Establish and support the safety of the Canyon's residents through adequate fire protection and traffic control.
 - Enhance the Canyon's quietness and serenity through protecting dark skies and implementing noise level limitations.
 - Provide adequate public safety through police presence and emergency services.
 - Maintain the rural, diverse and eclectic character of the Canyon and the sense of community.
 - Promote the arts, historical and cultural traditions in the Canyon.
 - Protect the water quality of the Rio Fernando watershed through cooperation and partnerships with private landowners, state and federal jurisdictions.
 - Promote outdoor recreation opportunities and accessibility to the Carson National Forest.
 - Promote specific guidelines with Taos County, NM Department of Transportation and the Federal Highway Administration to ensure safety on US Highway 64 and local county roads.

Section II. District Designations

RR: Rural Residential: 1 residence/1 acre (or up to 2 residences/acre when clustered within buildable area): generally an existing low density residential development with limited services.

SHC: Scenic Highway Corridor Overlay: designated corridors to a depth of 100' from right of way edge: these are corridors with high scenic values and high sensitivity to strip development. These corridors would allow cluster development with limitations on building heights, side or rear parking areas, landscaped buffers along street setbacks, and monument signage.



Taos Canyon Zoning Map

- Land Ownership**
 - State Land
 - Bureau of Land Management
 - Wilderness
 - Forest Service
 - Pueblo Lands
- Misc. Boundaries**
 - Subarea Boundaries
 - Incorporated Town Limits
 - Neighborhood/Association Boundaries
 - Parcels
- Other Layers**
 - SHC Overlay District
 - Rural Residential Zone (RR)
 - Major Arroyos

Section III. Allowed Land Uses

Home Occupations are allowed in all designations.

P = Permitted

S= Special Use

Residential Uses	RR	
Bed and Breakfast	P	
Day Care	P	
Livestock Raising	P	
Multiple Family	S	
Private- Preschool	P	
Residential Care Facilities	P	
Single-Family Attached	S	
Single-Family Detached	P	

Non-Residential Uses

Alcoholic Beverage Sales	S	
Assisted Living	P	
Arts and Cultural Enterprises	P	
Automotive–Service Stations	S	
Business/Professional Services	P	< 10,000 sq. ft./building
Café/Coffeehouse	P	
Churches	S	
Dance & Fitness Studios	S	
Day Care Center	S	
Food & Beverage Sales	P	
Hospitals & Clinics	P	
Lodging	S	
Plant Nursery	P	
Offices	S	
Restaurants–General	P	
Retail Sales–General	S	
Schools–Private/Public	P	

Section IV. Development Standards

A. Lot Characteristics

	RR	
Lot Area – Minimum	1 ac	

B. Building Placement

	RR	
Max/Min Front Setback	25'	
Minimum Side Setback	15'	
Minimum Rear Setback on inhabitable structure	15'	
Minimum Rear Setback on non-inhabitable structure	5'	

C. Building Heights

	RR	SHC	
Principal Building Max	27'	16'	The maximum height of a wind turbine for private non-commercial energy production is 40 feet from finished grade to the blade hub when in accordance with Appendix B. Solar and Wind Generation

D. Scenic Highway Corridor (SHC) – 100' from edge of right of way

- A. Setbacks from Highways
 - 1. All buildings shall be set back a minimum of 25 feet from the edge of the right-of-way of a state or county highway. Native vegetation should be retained or replanted in this setback area.
 - 2. Outdoor storage or accessory (uninhabitable) buildings are not allowed within corridor zone. For non-residential buildings, pedestrian walkway and access is on the front and parking is located on the side and/or rear of the building.
- B. Noise Walls. Noise walls higher than 6 feet facing a federal, state, or county highway are prohibited. Additional setbacks or landscaped berms may be used to reduce noise impacts.
- C. Screening
 - 1. Service areas, loading areas, outdoor storage areas, and trash receptacles for other than single-family houses shall be screened with buildings, walls, berms, vegetation, and/or existing terrain. The screening for loading areas and outdoor storage areas shall be a minimum of 6 feet in height and a maximum of 8 feet in height. All screening should provide protection of the enclosed area from animals and wind.
 - 2. Parking areas shall be screened from adjacent residences by walls, berms, or a combination thereof that are a minimum of 3 feet in height and a maximum of 5 feet in height.
- D. Signs
 - 1. Billboards or other signs advertising a product, service, or business not located on the same legal lot as the sign are prohibited.
 - 2. Signs shall not exceed 60 square feet in area, cumulatively.
 - 3. Signs shall be permanently mounted or affixed to the ground or a permanent structure.
 - 4. Letters shall be large enough and have adequate contrast with the background to be readable to the intended viewer.
 - 5. Neon, flashing, and intermittently lit signs are prohibited.

Section V. Provisions Applicable To All Zones

- A. **Off-Street Loading.** Any use requiring loading space for normal operations shall provide adequate loading space at the rear of the building, so that no vehicle being loaded or unloaded in connection with normal operations shall stand in, or project into, any public street, walk, alley, or way.
- B. **Trailers.** Trailers that are unattended and or abandoned and not attached to a vehicle and metal storage units or containers on or off wheels or franchise units shall not be located within 100 feet of the highway easement and must be partially screened with a minimum of a 6-foot fence from view of neighbors and the highway and if located on the property more than 6 months must be painted a earth tone color.
- C. **Waste.** The project must be permitted for Waste Water Treatment by the New Mexico State Environment Department. No open garbage pits shall be maintained or used and no brush, trash or other waste materials shall be burned on the premises without a Taos County or Taos Canyon Fire Department burn permit.
- D. **Landscaping.** Landscaping and xeriscaping are strongly encouraged, and should be designed and maintained with consideration of the neighbor's views.
- E. **Access.** The development or project must be permitted for access road construction by Taos County and New Mexico Department of Transportation when the property access is from a New Mexico State Highway.
- F. **Building Color.** All buildings must have an exterior color which approximates one of the earth tone colors in a current "commercial stucco color chart" except for natural wood exteriors.
- G. **Signage.** Signage shall comply with the following provisions:
 - 1. Signage is restricted to signs up to a maximum of 7% of the face of the building or 100 square feet, whichever is less per business. This figure includes all exterior signs whether attached or free standing.
 - 2. Signage is restricted to that which applies only to the business on the property.

3. All signage must comply with state regulations and the existing Taos County Signage Ordinance.
 4. Neon signs must be installed inside the building and any larger than 8 square feet are prohibited.
 5. Billboard signs are not allowed.
- H. **Dark Skies.** All artificial exterior lighting must be shaded to meet New Mexico State “dark skies” laws and any Taos County Ordinances for “dark skies” conditions at night. Exterior lighting systems shall meet the functional and security requirements of the proposed land use, without producing nuisance glare or light trespass or does not adversely impact adjacent properties or the community.
- I. **Underground Utilities.** All new utilities installed after the date this ordinance becomes effective must be underground and comply with all county, state and federal government regulations.
- J. **Noise.** No improvement or use is permitted which emit noises louder than 60dB (A scale) measured at the perimeter of the property. Short, infrequent exceptions are permitted.
- K. **Outdoor Storage.** No permanent (longer than 6 months) outdoor storage except for that which is integral to the use of the business and which does not present a significant negative visual impact on the surrounding commercial neighborhood. Upon completion of construction of the business, all construction equipment and surplus building materials shall be promptly removed from the premises, stored in an appropriate storage room, or adequately screened from view of neighbors and roadways.
- L. **Views.** The views of the adjacent parcels and existing improvements should be preserved to the maximum extent possible. This can be accomplished by orientation, changing the roof design, clustering, or reduction in the maximum heights of new improvements depending upon the elevation relative to other sites.

Definitions of Allowed Uses

This section defines the types of uses allowed (permitted or special use) in this neighborhood land use code. The definitions are broad in order to avoid long lists of specific uses that soon become outdated or are incomplete. Any use that is Permitted under this Land Use code is not required to obtain a Special Use Permit under the Taos County regulations. All permitted Non-residential land uses will need to submit an Infrastructure and Traffic Assessment report in compliance with Section IV #2-10 of the Taos County Land Use Regulations. Other land uses not allowed within these designations can be requested for approval as a rezoning to the most restrictive and appropriate district designation for the proposed use as defined in the adopted Taos County Growth Management Plan. The rezoning procedure will follow the procedure as outlined for a Special Use process in the Land Use Regulations, with the approval resulting in the parcel(s) of the rezoning request being changed to the approved district designation on the neighborhood zoning map.

In case of a regulation that is not addressed in this code, the regulation or standard in the Taos County Land Use Development Regulations will prevail, such as on Terrain Management, parking requirements, flood zones, wireless facilities, etc. For a proposed use that does not specifically fit the definitions for an allowed use, the Planning Director, in consultation with the Neighborhood Association and Acequia Association, shall make an interpretation whether a proposed use fits within an allowed use for that designation, or if the proposed use will require a rezoning. If it does not fit, the use is not allowed unless an amendment to this ordinance, or a rezoning to another district, is approved. The Planning Director’s decision will be made in writing and is appealable as outlined in Section ___ of the Taos County Land Use Regulations.

Residential Uses

1. **Bed & Breakfast.** The Bed & Breakfast use type consists of an owner occupied dwelling providing six (6) or fewer guest rooms on a commercial basis for stays of seven (7) or fewer consecutive nights, with no cooking facilities in the guest rooms, and providing breakfast and snacks to the guests only.
2. **Day Care–Residential.** The Day Care–Residential use type consists of providing care and supervision in a single-family residence where an occupant of the residence cares for eight (8) or fewer children less than 18 years of age for periods of fewer than 24 hours per day. Children less than the age of 10 years who reside in the home count as children served by the facility.
3. **Duplex.** The Duplex use type consists of two dwelling units on a single parcel within the same structure, each with its own kitchen and bathroom facilities.

4. Home Occupation (Cottage Industry). A business, profession, occupation or trade conducted from a single family residential property and located entirely within the primary dwelling or an accessory structure such as a detached garage. It is clearly incidental and secondary to the use of the residential dwelling, and does not change the essential residential character or appearance of the dwelling. Agriculture and/or agricultural industry are not applicable. Home occupations will:
 - a. No more than two full time/part time employees other than members of a family residing on the premises, and regularly engaged in work at the site of the home occupation.
 - b. The use of the dwelling for the home occupation shall be clearly incidental and subordinate to its use for residential purposes by its occupants and not more than 50% of the floor area of the dwelling, including accessory buildings, shall be used in the conduct of the home occupation on the designated parcel.
 - c. There shall be no change in the outside appearance of the building or premises, nor other visible evidence of the conduct of the home occupation except for one non-illuminated name plate sign not more than 6 square feet in area.
 - d. Parking for employees, customers and clients of the home occupation shall be provided off the street.
 - e. No equipment or process shall be used in the home occupation which significantly impacts the existing use of property in the adjacent area.
5. Livestock Raising. The Livestock Raising use type consists of the raising of domesticated animals for non-commercial purposes. The raising of animals normally found in the wild are not included. Typical animals include rabbits, chickens, cattle, sheep, goats, pigs, horses, bison, llamas, and ostriches.
6. Multiple Family. The Multiple Family use type consists of three or more dwelling units within the same structure, each with its own kitchen and bathroom facilities.
7. Private Preschool. The Private Preschool use type consists of providing care and education for children less than six years of age for the purpose of preparing them for public or private elementary school.
8. Residential Care. The Residential Care use type consists of providing 24-hour non-medical care in a residential setting for six (6) or fewer people in need of personal services, supervision, protection, or assistance for sustaining the activities of daily living.
9. Single-Family Attached. The Single-Family Attached use type consists of one dwelling unit, constructed with a common wall with a single-family unit located on another parcel.
10. Single-Family Detached. The Single-Family Detached use type consists of one dwelling unit, which is separated from any other dwelling unit. Manufactured homes certified under the National Mobile Home Construction and Safety Standards Act of 1974 that are installed on a permanent foundation approved by the County, are included.

A. Non-Residential Uses

1. Alcoholic Beverage Sales. The Alcoholic Beverage Sales use type consists of the sale of alcoholic beverages for consumption at place of sale or at a location other than the place of sale. This is the only use type that allows the sale of alcoholic beverages, but may be combined with other use types. Typical uses include liquor stores, bars, and restaurants that serve alcoholic beverages.
2. Art & Cultural Enterprises. The Art & Cultural use type consists of the production and sale of arts and crafts, the presentation of music or theater, and similar arts and cultural activities. The on-site production of goods by hand manufacturing, involving the use of hand tools and small-scale, light mechanical equipment with electric motors that do not exceed five horsepower is allowed.
3. Assisted Living. The Assisted Living use type consists of providing full-time shelter, rehabilitation, care and supervision on a non-institutional basis to neglected, abandoned, physically handicapped, developmentally disabled, mentally ill, mentally disabled, and substance, or alcohol dependent children or adults on a private, nonprofit basis licensed by the appropriate state agency.

4. **Automotive Service Stations.** The Automotive Service Stations use type consists of gasoline stations, including ancillary convenience retail and auto services. Service stations that contain any repair bays are considered "Automotive Repair."
5. **Business & Professional Services.** The Business & Professional Services use type consists of providing services oriented to business matters, including but not limited to accounting services, financial services, tax preparation, duplicating and fax services, messenger services, printing, and janitorial services.
6. **Cafes and Coffeeshouses.** The Cafes and Coffeeshouses use type consists of serving coffee, other non-alcoholic beverages, and food not prepared on-site with the exception of bakery goods.
7. **Churches & Community Centers.** The Churches & Community use type consists of community meeting and cultural facilities; meeting, athletic, recreational, or social facilities of a private fraternal or benevolent organization; and facilities for religious worship with incidental educational or residential use. Uses include fraternal lodges, meeting halls, community centers, libraries, museums, churches, mosques, synagogues, monasteries, convents, and religious retreat centers.
8. **Dance & Fitness Studios.** The Dance & Fitness Studios use type consists of the use of space, often before and after normal working hours, for dance types, exercise programs, and general fitness training.
9. **Day Care Centers.** The Day Care Centers use type consists of providing care and supervision for nine (9) or more children less than 18 years of age for periods of fewer than 24 hours per day. Children less than the age of 10 years who reside in the home count as children served by the facility.
10. **Food & Beverage Sales.** The Food & Beverage Sales use type consists of the retail sales of food and beverages, primarily for off-site preparation and consumption. This use type must be combined with the Alcohol Beverage Sales use type in order to sell alcoholic beverages. Uses include supermarkets, grocery stores, or delicatessens.
11. **Hospitals.** The Hospitals use type consists of state-licensed facilities providing medical, surgical, psychiatric, or emergency medical services to sick or injured persons, including overnight stays at the facility. This use type includes facilities for inpatient or outpatient treatment as well as training, research, and administrative services for patients and employees.
12. **Lodging.** The Lodging use type consists of providing six (6) or more guest units, with no or minimal kitchen facilities in the units, intended for occupancy on a commercial basis, primarily for seven (7) or fewer consecutive nights. Guest units may be reached either from a common entrance or directly from the outside of the building. This use type includes restaurants or reception facilities operated in conjunction with the hotel or motel.
13. **Offices.** The Offices use type consists of offices of firms or organizations providing professional, executive, management, medical, or administrative services not included in another use type. This use type excludes home offices that meet the criteria for home occupations.
14. **Personal Services.** The Personal Services use type consists of services and incidental sales of a personal nature. Typical uses include beauty salons, barbershops, therapeutic massage services, and diet centers.
15. **Plant Nurseries.** The Plant Nurseries use type consists of the sale and cultivation of ornamental trees, shrubs, and plants, including incidental sale or rental of garden and landscape materials and equipment. Outdoor storage of such materials and equipment is included.
16. **Recreation.** The Recreation use type consists of recreational and entertainment operations taking place indoors, such as bowling alleys, and outdoors, such as sports fields.
17. **Restaurants.** The Restaurants use type consists of serving drinks and food prepared on-site, which do not have drive-through facilities, and which do not serve patrons seated in an automobile. This use type must be combined with the Alcohol Beverage Sales use type in order to serve alcoholic beverages.
18. **Retail Sales—General.** The Retail Sales—General use type consists of the retail sale of goods or provision of services not specifically listed under another use type, and which primarily sell specialized items or that are primarily oriented to a local customer base. This use type includes stores selling clothing, hardware, books, flowers, jewelry, and furniture that occupy buildings less than 80,000 sf of gross floor area.

19. Schools—Elementary & Secondary. The Schools—Elementary & Secondary use type consists of primary or secondary schools, including elementary, junior high, and high schools operated by a public agency or private organization.

Section VI. Special Provisions The following Special Provisions are guidelines and as such advisory, or are options that can be implemented for reducing the Development Standards requirements on minimum lot sizes and setbacks or to provide density bonuses when in conformance with the performance standards as outlined in the special provisions.

A. Cluster Development Option

- A. Purpose. It is the purpose of these provisions to cluster development on a portion of the larger land area (cluster development area) while preserving the remainder in natural open space (open space area) in order to:
1. Encourage creative and flexible site design that is sensitive to the land's natural features and adapts to the natural topography;
 2. Protect environmentally sensitive areas of a development site and preserve on a permanent basis open space, natural features, and agricultural lands;
 3. Promote cost savings in infrastructure installation and maintenance by such techniques as reducing the distance over which utilities, such as water and sewer lines, need to be extended or by reducing the width or length of streets;
 4. Facilitate a sense of community and reduce the need for vehicle trips by having residential and non-residential uses within walking distance of each other; and
 5. Provide opportunities for social interaction and walking and hiking in open space areas.
- B. Applicability. Cluster development shall be permitted as of right in the following districts:
1. RC- Resource Conservation
 2. RR Rural Residential;
- C. Open Space Area: Characteristics. The open space area should discourage development on lands with the highest environmental values and the highest level of natural hazards.
1. Areas that should be included within the open space area include the following:
 - a. Wetlands;
 - b. Floodplains;
 - c. Riparian buffers;
 - d. Arroyos;
 - e. Slopes above 15%;
 - f. Habitats and habitat corridors;
 - g. Views of scenic features;
 - h. Scenic ridgelines and hilltops; and
 - i. Cultural features and archaeological sites.
 2. The configuration of the open space area should comply with the following principles:
 - a. The open space should be natural, undisturbed and contiguous;
 - b. The open space should maximize common boundaries with other open space;
 - c. The open space should maximize trail connections;
 - d. No single area of open space should be less than 100 feet in its smallest dimension;
 - e. The boundaries of the open space area should be marked by natural features wherever possible; and
 - f. If marking boundaries of the open space area by natural features is not possible, landscaping or fences should be used to distinguish the open space from private land.

D. Natural Open Space Area: The percentage of the gross area to be retained in open space is shown in the following table:

District	Percent Natural Open Space
RR Rural Residential	60%

E. Natural Open Space Area: Uses. The following are allowable uses within the open space area:

1. Grazing and equestrian;
2. Trails; and
3. Stormwater detention and/or retention;
4. Other similar low impact uses such as leach fields or septic systems.

F. Cluster Development Area: Characteristics. The cluster development area should be the portion of the land that is most suitable for development. Some criteria for selecting this area are:

1. The area has already been disturbed;
2. An area with slopes less than 15%;
2. The area has access to public road; and
3. The area possesses none or a minimum of the characteristics of an open space area (see above).

G. Cluster Development Area: Amount of Development.

1. The number of permitted dwelling units within a cluster development area shall be calculated in the following manner:
 - a. Measure the gross area of the proposed site in acres;
 - b. Subtract from the gross area the area of public and private streets and other publicly dedicated improvements;
 - c. Divide the area in acres as determined above by a factor of .75 for the area within the RR designation. The result is the maximum number of residential units allowed in the cluster development area.

H. Cluster Development Area: Standards. Development shall comply with the following standards.

1. The minimum area of a cluster development project is 3 acres;
2. The number of driveways leading to and from the public right-of-way shall be minimized in favor of common driveways and internal streets;
3. Parking requirements may be applied to the entire cluster development site rather than to any individual lot;
4. No minimum size, width, or depth of an individual lot shall apply;
5. A minimum separation of 20 feet shall be provided between all principal buildings and structures;
6. A minimum yard or common open space of a least 25 feet in depth shall be provided as measured from all public streets and from the boundary of the open space area.

I. Protection of Natural Open Space Areas

The open space area may be designated as Common Area or within a lot(s) on the site plan provided that

1. The area is owned by any of the following:
 - a. A homeowners association;
 - b. A governmental agency;
 - c. A not-for-profit conservation organization; or
 - d. An individual.

2. Regardless of the ownership, the open space area shall be restricted in perpetuity to open space uses by a conservation easement, deed restriction, or other legal instrument that runs with the land.
 3. The legal instrument shall clearly state if the public or residents of the cluster development have access to the open space area.
- J. Application. A site plan for a cluster development shall be submitted for approval and shall be approved before any ground disturbance or construction takes place.
1. The site plan shall include, but shall not be limited to, the following information:
 - a. The maximum number and type of dwelling units proposed;
 - b. The size and description of non-residential buildings proposed;
 - c. The areas of the site on which the buildings are to be constructed or are currently located and their size (this may take the form of the footprint of the building or a building envelope showing the general area in which the dwelling unit is to be located);
 - d. The calculations for the permitted number of dwelling units or non-residential space;
 - e. The areas of the site designated for common open space and their size;
 - f. The areas of the site designated for parking and loading, and the size of individual spaces;
 - g. The vehicular access to the public right-of-way and the internal street system;
 - h. The location of sidewalks, trails, and bike paths;
 - i. The number and percentage of dwelling units, if any, that are proposed to be affordable; and
 - j. The number of acres that are proposed to be preserved as common open space.
 2. The proposed ownership and management plan for the common open space shall be submitted with the site plan.
- K. Approval Process. The Planning Director, in consultation with the Taos Canyon Neighborhood Association, shall review and approve, approve with conditions, or disapprove a cluster development in the manner provided for in the Taos County Land Use Regulations.
1. The review criteria are as follows:
 - a. The site plan satisfies the requirements of Section J above;
 - b. The project meets the requirements of this Chapter Clustering Provisions;
 - c. The project is consistent with any adopted plan for the area;
 - d. Vehicular access to public rights-of-way is minimized;
 - e. Parking is adequate but not excessive;
 - f. Individual lots, buildings, structures, streets, and parking areas are situated to minimize the alteration of natural features, natural vegetation, and topography;
 - g. Existing scenic views or vistas are permitted to remain unobstructed, especially from public streets;
 - h. Historic, cultural, and archaeological features of significant value are preserved;
 - i. Floodplains, wetlands, and other environmental features of significant value are protected from development;
 - j. Pedestrians can easily access the open space area, if such access is allowed; and
 - k. The ownership and management plan for the open space area is feasible, will ensure that the area is properly maintained, and will protect the open space area from development.
 2. The Planning Director, consultation with the Taos Canyon Neighborhood Association, may apply such special conditions to the approval of a cluster development as may be required to promote the objectives and purposes of any adopted plan or ordinance applicable to the area.

This material is for informational and educational purposes to encourage low-impact and sustainable development practices in the Taos Canyon neighborhood. These guidelines should be amended and refined as technology changes and to reflect best management practices.

B. Stormwater Management, Water Harvesting and Graywater

Stormwater and drainage concepts serve to preserve and enhance the natural arroyos. The natural arroyos channel the water off the site and maintain the habitat for resident wildlife.

Harvesting Rainwater and Water Harvesting

With an annual average precipitation rate of 12 inches, water availability is and will remain one of the most critical issues facing Taos County. The county intends to conserve this vital resource by encouraging water conservation practices, harvesting rainwater, re-use of gray water for landscaping, and effectively managing stormwater through ecological design.

Principles of Successful Water Harvesting

(Rainwater Harvesting for Drylands, Brad Lancaster, 2006)

- **Start at the top (highpoint) of your watershed and work your way down.** Water travels downhill, so collect water at your high points for more immediate infiltration and easy gravity-fed distribution. Start at the top where there is less volume and velocity of water.
- **Start small and simple.** Work at the human scale so you can build and repair everything. Many small strategies are far more effective than one big one when you are trying to infiltrate water into the soil.
- **Slow, spread, and infiltrate the flow of water.** Rather than having water erosively runoff the land's surface, encourage it to stick around, "walk" around, and infiltrate into the soil. Slow it, spread it, sink it.
- **Always plan an overflow route, and manage that overflow as a resource.** Always have an overflow route for the water in times of extra heavy rains, and where possible, use the overflow as a resource.
- **Maximize living and organic groundcover.** Create a living sponge so the harvested water is used to create more resources, while the soil's ability to infiltrate and hold water steadily improves.
- **Maximize beneficial relationships and efficiency by "stacking functions."** Get your water harvesting strategies to do more than hold water. Berms can double as high and dry raised paths. Plantings can be placed to cool buildings in summer. Vegetation can be selected to provide food.



For a thorough introductory description of water-harvesting principles and additional ethics see *Rainwater Harvesting for Drylands and Beyond, Volume 1* (Rainsource Press, 2006).

Roof and Surface Rainwater Catchment Areas

There is potential for nearly any surface to be used to catch water. Structural surfaces, hardscaped areas and landscaped surfaces (vegetated, gravel, bare) all can create invaluable sources of water if designed accordingly. On average 1" of rain can produce 600 gallons of water per 1,000 square feet of catchment surface, and on a larger scale 27,000 gallons on 1 acre of catchment surface. Below are two equations that can be used to estimate volume of runoff off catchment surfaces.

Estimated Net Runoff from a Catchment Surface Adjusted by its Runoff Coefficient

Catchment area (ft²) x rainfall (ft) x 7.48 gal/ft x runoff coefficient = net runoff (gal)

* To account for potential loss, determine the runoff coefficient that is appropriate for your area and impervious catchment

surface (0.80 to 0.95)

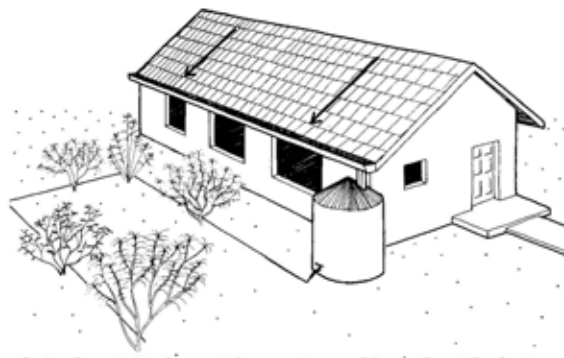
- Desert uplands (healthy indigenous landscape): range 0.20–0.70, average 0.30–0.50
- Bare earth: range 0.20–0.75, average 0.35–0.55
- Grass/lawn: range 0.05–0.35, average 0.10–0.25
- For gravel use the coefficient of the ground below the gravel

(referenced from *Harvesting Rainwater for Drylands and Beyond*, Brad Lancaster, 2006)

A simple system usually consists of catchment area and means of distribution, which operates by gravity. The water is deposited in a landscape holding area, a concave or planted area or planted area with edges to retain water, where it can be used immediately by plants.



A more complex system can include a storage tank such as a cistern, and a distribution system through an underground irrigation system.



Effective rainwater harvesting design and systems include:

- Above ground cisterns (larger quantities) and rain barrels (smaller quantities)
- Below ground cisterns and storage tanks
- Swales designed on contour and vegetated swales
- Infiltration zones (stripped landscaping, ponds, basins)
- Pumice wicks
- Permeable and vegetated surfaces*
- French drains
- Retention ponds

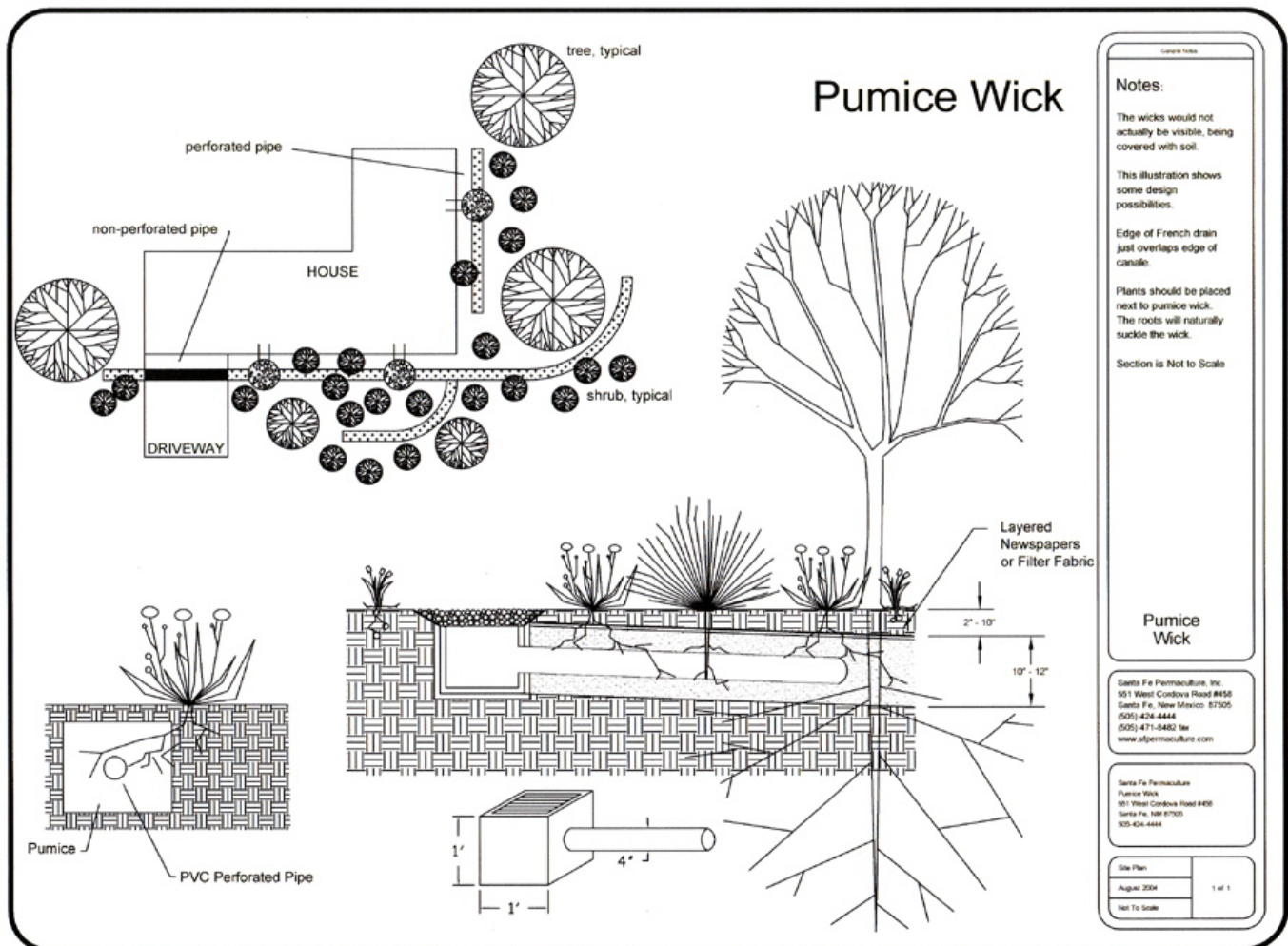
Graywater Systems

Graywater systems can utilize waste water from bathroom sinks, showers and washing machines as a supplemental source for landscape irrigation. Reuse of gray water helps conserve our fresh water supplies by not applying drinking water to the landscape.

In New Mexico Gray water is defined as,

"untreated household wastewater that has not come in contact with toilet waste and includes wastewater from bathtubs, showers, washbasins, clothes washing machines and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers or laundry water from the washing of material soiled with human excreta, such as diapers."

The 2003 Legislature passed [House Bill 114](#), codified at [74-6-2](#) and [74-6-4](#) NMSA 1978, that set conditions whereby up to 250 gallons per day of residential gray water may be used for household gardening, composting or landscaping irrigation without a permit. Gray water harvesting systems designed to discharge more than 250 gallons/day requires a permit issued by the New Mexico Environmental Department (NMED).



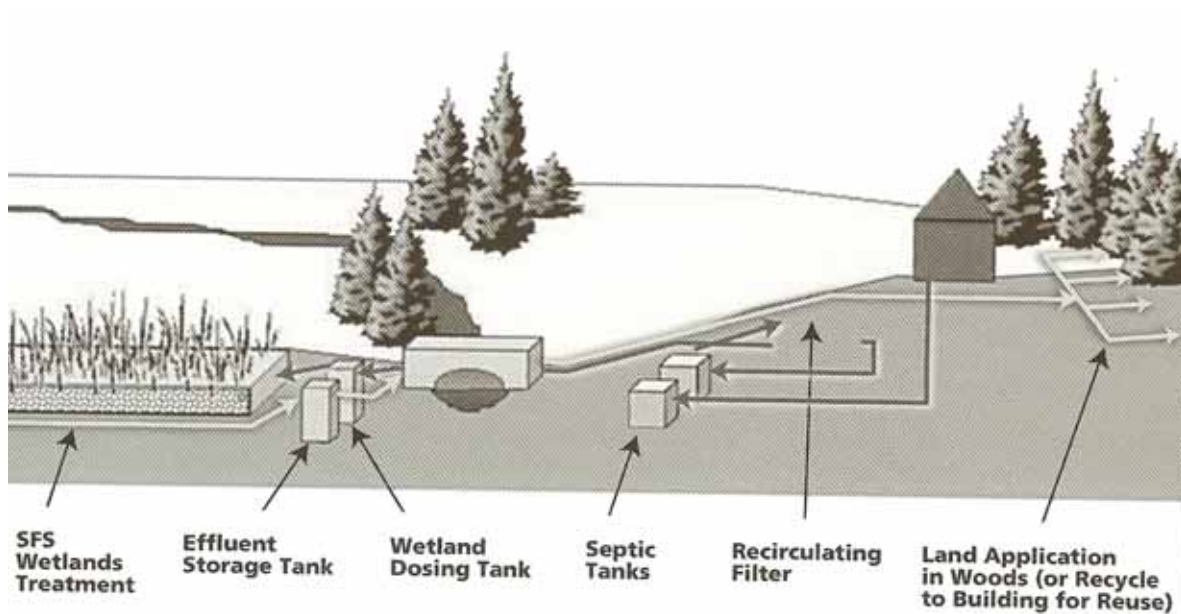
Drought tolerant garden planted with pumice wick water harvesting system (above) and Design for Pumice Wick (left): Santa Fe Permaculture

Gray water harvesting and reuse systems must comply with the following regulations (NMED)

- Gray water should not be used in vegetable gardens to irrigate root crops or edible parts of food crops that touch the soil. However, gray water can be used on fruit trees.
- The gray water distribution system must be constructed so that overflow from the system drains into the sanitary sewer or septic system. In some cases, a liquid waste permit may be necessary if an on-site septic system is modified.
- If gray water is going to be stored, it should not be held more than 24 hours to prevent growth of bacteria. A gray water storage tank must be covered to restrict access and to eliminate habitat for mosquitoes or other vectors.
- Gray water should be discharged only in areas where there is vertical separation of at least five feet between the point of discharge and the ground water table to protect ground water resources from possible contamination. Current liquid waste disposal regulations require that gray water not be applied within 100 feet of a domestic well or within 200 feet of a public water supply.
- The gray water system must not be located in any area susceptible to flooding.
- Gray water pressure piping should be clearly identified as carrying non-potable water and not be connected with the drinking water system. (Purple pipe is traditionally used to denote gray water piping, but any easy-to-identify labeling is sufficient.) Alterations or additions to a plumbing system should be made by a licensed plumber, or a homeowner must apply for a homeowner's plumbing permit.

- Gray water must be used on the site where it is generated and may not run off the property.
- Gray water should be applied in a manner that minimizes the potential for contact with people or domestic pets.
- To avoid contact, gray water must be applied to a mulched area or through a subsurface piping or irrigation system.
- Ponding of gray water is prohibited, and application of gray water must be managed to minimize standing water, encourage infiltration, and prevent over-saturation of the soil.
- Gray water must not be sprayed.
- Gray water must not be discharged to a watercourse. Current liquid waste disposal regulations require that discharges of gray water be made at least 100 feet from streams or lakes or 25 feet (plus the depth of the arroyo) from an arroyo.
- Gray water use shall comply with all applicable municipal or county ordinances, local building codes, state laws, and related regulations and guidelines.

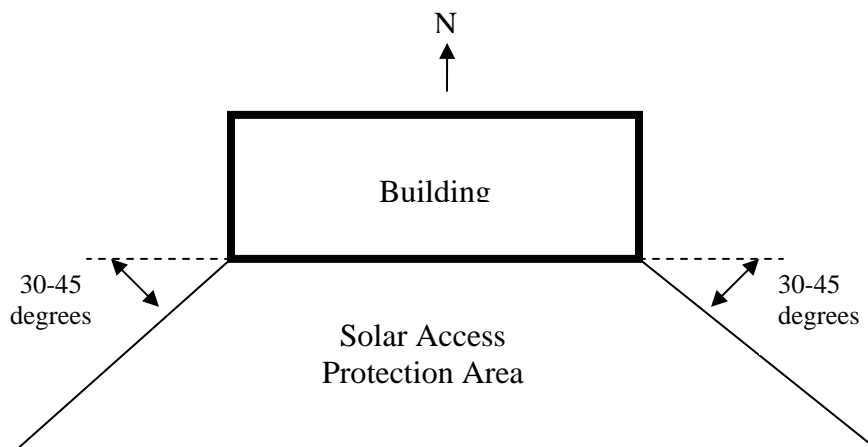
A more complex community wastewater system can be a **constructed wetlands** system that is an alternative to individual septic fields and tanks. The reclaimed water from this system can be used to irrigate landscape areas but not food crops.



C. Solar and Wind Generation

Solar Energy

- A. Intent. It is the intent of the County of Taos to encourage the use of solar energy systems in order to reduce reliance on imported oil, minimize environmental impacts, and reduce the costs of energy to building owners. Solar energy systems include those used to produce electricity (photovoltaic (PV) systems) or used to produce hot water or hot air (solar thermal systems).
- B. Codes. The solar energy system shall meet all applicable county and state building, plumbing, and electrical codes.
- C. Interconnections. A photovoltaic system intended to be connected to the electric utility grid shall not be operated until the electric utility provider has been notified in writing of the machine owner's intent to interconnect.
- D. Building Orientation. The longest axis of the building should generally run in an east-direction with the largest face of the building at an azimuth (compass reading) between approximately 205 and 175 degrees, with the ideal being approximately 190 degrees.
- E. Solar Access Protection. The area beyond the south-facing wall of a building should be a solar access protection area. This area is shown below.



1.

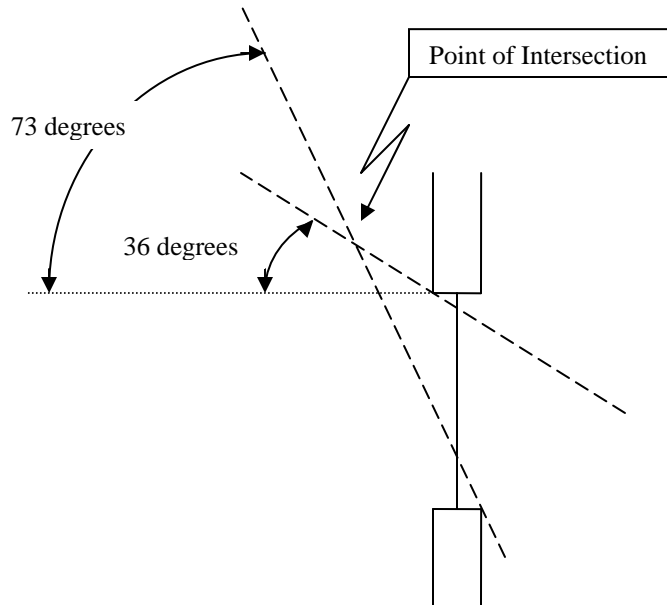
Within the Solar Access Protection Area, trees and structures should be restricted as follows:

- a. 0 to 10 feet from the building: no obstructions
- b. 10 or more feet from the building: fences allowed
- c. 17 or more feet from the building: tree or structure with a maximum 12 foot-height allowed
- d. 39 or more feet from the building: tree or structure with a maximum 24 foot-height allowed
- e. 100 or more feet from the building: no height restrictions

2. A technical solar analysis may be substituted for the above, especially if the ground is uneven.

- F. Trees. Deciduous trees are encouraged on the east and west side of the building. All trees, including deciduous trees, planted within the Solar Access Protection Area should comply with the setback and height restrictions above.
- G. North-South Streets. On north-south streets better control over solar access can be achieved by allowing or requiring all of the side-yard setbacks to occur on the south side of the building with no side setback on the north side of the building (zero-lot line development).

- H. Overhangs. Overhangs should be used to assist in passive solar heating and cooling. The method of calculating the optimum overhang is shown below. It provides full 8 weeks of sun around the winter solstice and 8 full weeks of shade around the summer solstice. The lower edge of the overhang should be located at the point of intersection of the two dashed lines as shown below.



- I. Reflective Ground-level Surfaces. Highly reflective surfaces at the ground level should be avoided within the Solar Access Protection Area during June, July, August, and September.

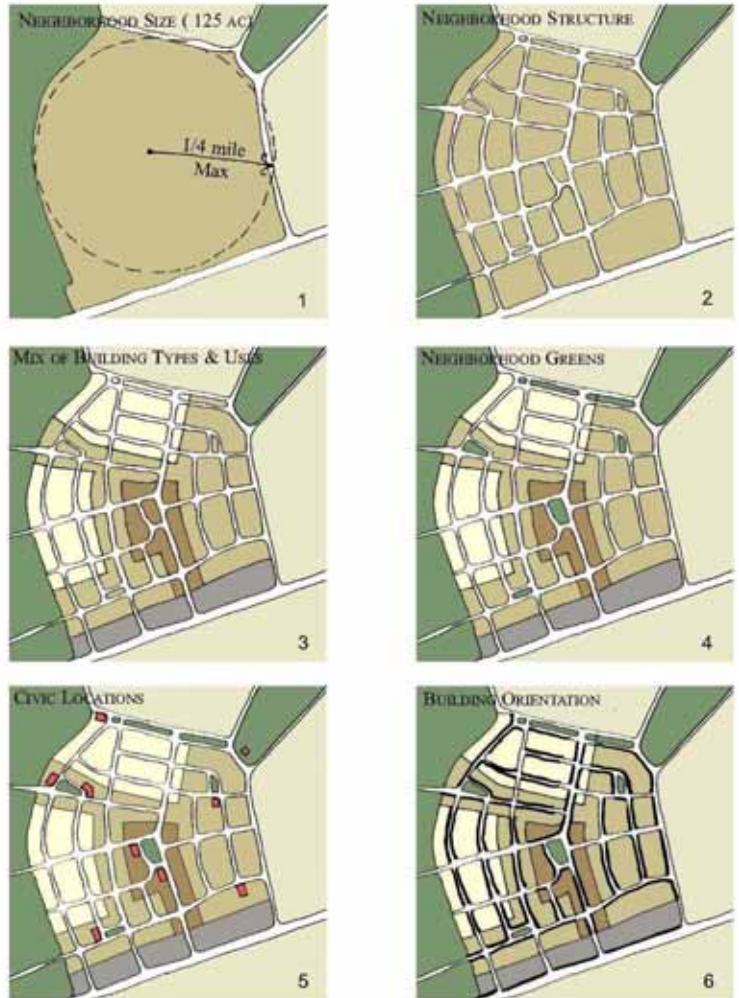
Wind Energy

- A. Intent. It is the intent of the County of Taos to encourage the use of wind machines in order to reduce reliance on imported oil, minimize environmental impacts, and reduce the costs of energy to building owners. This section applies to non-commercial wind machines used to produce electricity primarily for the use of the owner of the lot on which the wind machine is located and as such are a permitted use.
- B. Setbacks. A wind machine shall have a minimum setback from the property line a distance no less than the distance from finished grade to the maximum height of the turbine blade.
- C. Height: The maximum height from finished grade to the blade hub is 40 feet.
- D. Location. The wind machine tower and any of its guy wires shall not be located in the front yard of any residential or commercial building.
- E. Speed Control. All wind machines shall contain an internal governor or braking device that engages at wind speeds in excess of 40 miles per hour.
- F. Advertising. Advertising is prohibited on any portion of the wind machine.
- G. Illumination. Wind machines may not be artificially illuminated except where legally required by a governmental agency.
- H. Condition. All wind machines shall be kept in good repair, free from rust, and without damaged supports, framework, or other components.
- J. Non-operating Machine. An abandoned or unused wind machine shall be removed within 12 months of the cessation of operations. If the machine is not so removed, it shall be deemed a nuisance subject to legal abatement and removal.

- K. Noise. The noise level of the wind machine shall not exceed the lesser of 60 decibels (dBA) or the local noise level applicable to the lot upon which the machine is located.
- L. Codes. The wind machine shall meet all applicable county and state building and electrical codes.
- M. Grid Connection. A wind machine intended to be connected to the electric utility grid shall not be operated until the electric utility provider has been notified in writing of the machine owner's intent to interconnect

Section VII. Community facilities

Community facilities, such as fire stations, parks, neighborhood centers, schools, churches and postal facilities should be sited within a 1/2 mile or on a 10 min walking distance within the neighborhood.



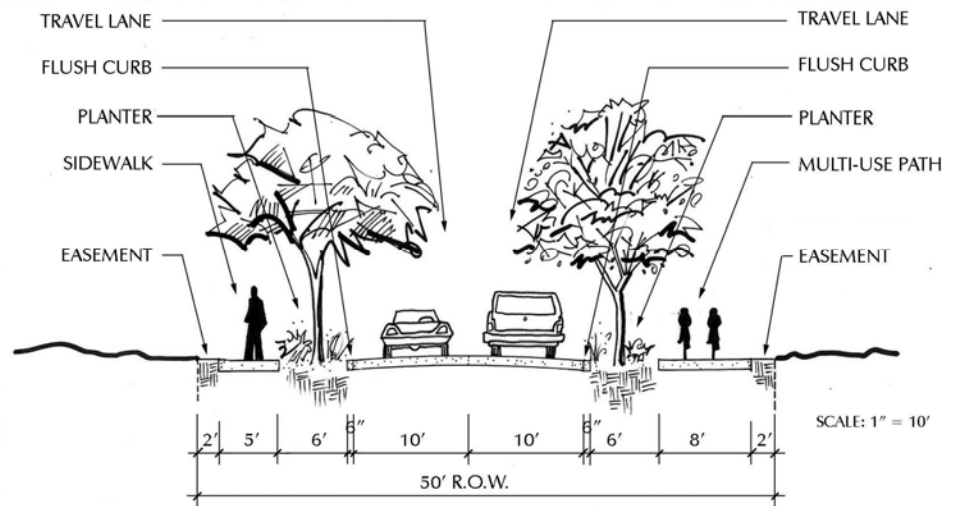
Recycling facilities are also important community facilities that should be conveniently located within each neighborhood and have easy automobile access. These recycling centers do not need always need to be co-located with solid waste transfer stations.

One of the Taos Canyon neighborhood's highest priorities is for a solid waste transfer station and recycling center. The County owns property in the neighborhood such as the school house land and lower fire house land, which could be used for these purposes. The Taos County Commissioners should secure funding through legislative appropriations or grants to initiate the feasibility and conceptual strategy for securing and constructing the transfer station and recycling facility.

Section VIII. Transportation/Walkability

Streets, Pedestrians and Bikes

Adequate right of way should be provided in all new developments. In most residential developments, a minimum of 50' of right of way is needed. Wider rights of way may be necessary at intersections and on major corridors. A residential street should provide 10' travel lanes with flush or no curbs to allow water runoff to the landscaped edges. Pedestrian walkways should be provided in both sides of the road. If only on one side, the pathways should be a minimum of 8' wide to provide both pedestrian and bike uses.



Road Guidelines

Unpaved roads are prevalent in Taos County and are a major factor in soil erosion and reducing water quality in surface streams. Turbidity, due to soil erosion, is the number one cause of poor surface water quality in New Mexico.

Many issues with soil erosion from unpaved or dirt roads can be alleviated with proper road construction and maintenance.

Proper crowning and drainage of the roadway will improve maintenance requirements and allow opportunities for water harvesting from the road surface.

Permeable road surfaces are available such as Polypavement and RoadOyl that are organic emulsifiers that when mixed with or applied with native soils will reduce dust and erosion, and provide a natural looking surface that is pervious to water infiltration.

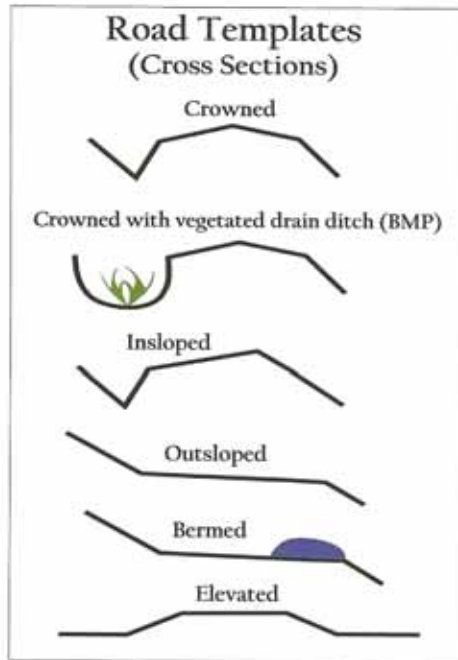


Figure III-3: Alternative cross sections used to assure sufficient cross sloping and drainage.

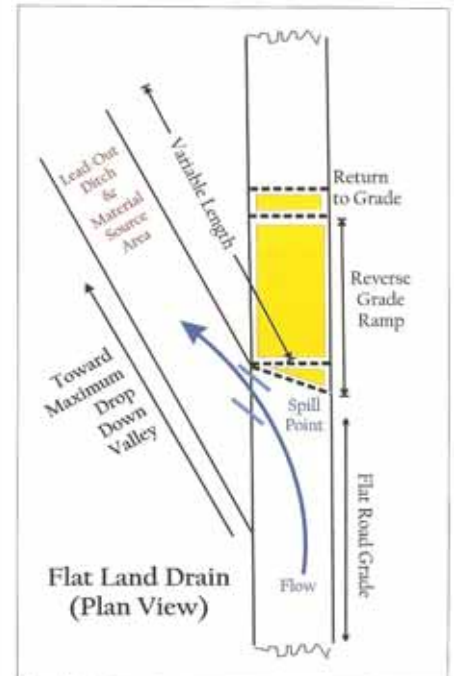


Figure V-4: Flat land drain schematic.