The Shoreline Master Program, the Critical Areas Ordinance and the Department of Ecology also limit development and residential wells in certain areas to protect homes from flood danger and to limit water extraction. In general, each developable residential lot is allowed one well, which can provide up to 5,000 gallons of water per day.

As part of the building permit application process, you will be required to submit a site map to the County Planning Department. The map must show that your development will meet the requirements for lot-line setbacks, septic system type and location, water availability and road access. Checklists for your site map and permit application are available on the county website at www.okanogancounty.org.

AERIAL PHOTOS

Aerial photos of your property are available at the Methow Conservancy or the Okanogan County Assessor's office. These photos are helpful for visualizing your project and seeing ways to cluster your buildings, protect native vegetation and plan ahead for landscaping.

A home site during excavation and after five years of soil improvement, annual planting, watering and weeding. It takes time to reclaim the disturbed area around your home.

Site Selection

Where you put your house will determine how it blends into the surrounding landscape. It is a decision as important as the design of your home and deserves ample time, planning and discussion.

Before You Select a Home Site

- If possible, spend time in each of the four seasons on your property before you build. Plan for snow loads and snow removal, spring runoff and drainage, summer landscaping and weed control, year-round wildlife patterns and fire safety.
- Try to see your property from other places in the valley. Will your home be visible to the public? If so, what can you do to help your home blend into the environment?
- Assess the potential sunlight on your property. Western exposures tend to be hot and dusty, especially in the late summer. Conversely, the steep walls of the upper Methow Valley significantly diminish direct sunlight north of Winthrop in the winter months. Bring a compass to your property and watch how the sun tracks across the sky.
- Consider using the topography of your site to your advantage, using earth-berming and solar gain to reduce your energy costs and provide natural heating and cooling for your home.
- Locate your property boundaries and research all restrictions. Carefully read your title report, covenants and county zoning rules. Be aware of setback rules, septic system requirements, wetland and well buffers, road easements and floodplains.
- Ask your neighbors about their well productivity, past forest fires, weed invasions, wildlife sightings and neighborhood fire-safety plans.

Before You Place Your Home

- Use chalk dust, flagging and poles to visualize the actual location and size of your house before you excavate. Bring a ladder to see the potential view from your house.
- Sketch outbuildings and landscaping along with your home. These features may include a fenced garden, a woodshed (away from your house), a plowed snow storage area and a recycling/trash shed.

A well-sited home is easily accessible, properly oriented and blends into the landscape.

Sketching a Site Map

A simple site map that shows the location of buildings, well and septic system is legally required in order to obtain a building permit. However, a more detailed map is a valuable way to visualize and plan the layout of your property. Aerial photos and topographic maps are useful in this process, but nearly any type of sketch can help you see how your building may complement your land.

Malcolm Wells

Site Map Details

- Contour lines (elevation)
- Orientation (aspect)
- Vegetation and forest types
- Wetlands
- Water sources
- Sunrise and sunset points
- Wind direction
- Roads
- Wildlife trails
- Recreational trails
- Protected areas/favorite spots
- Potential building areas
- Septic system area
- Utility access
- Emergency rescue access

Using Water

Accessing and disposing of water are important building considerations in the Methow Valley. The water supply is not inexhaustible: It is allotted for household consumption, agriculture and maintaining a healthy riparian habitat.

Wells

Outside the town boundaries of Winthrop and Twisp – except in planned developments – nearly every home uses a well to access drinking water from underground aquifers. To be certain that they will have access to water, many people choose rural property with an established well and get a pressure test and a well log. A well log will show how productive an existing well is. If there is no existing well, a well driller will help you determine where to drill.

Wells vary widely in their productivity and depth. Productive upland wells usually yield one-half to 50 gallons per minute, are usually mineral laden and generally range from 150 to 200 feet deep. Some upland wells are over 400 feet deep and produce under five gallons a minute. Also, upland wells are notorious for producing less water as they age. Valley floor wells yield three to 100 gallons per minute and generally range from 60 to 150 feet deep.

Irrigation Ditches

The Methow Valley still has numerous open-air irrigation ditches, although many of these have been changed to pipes over the past five years to conserve water. If you own land adjacent to a ditch, you might own irrigation shares. Most landowners consider ditch shares to be a valuable asset and will use these water rights so that they are not lost. If you have rights that you do not intend to use, you may consider placing these rights into a revocable water trust. Ask the Methow Conservancy for more information.

Ditches are usually managed through one of three systems: individual family ditches that serve fewer than ten people, private company ditches with shareholders and a board of directors, and irrigation districts, also with shareholders and a board. Easements exist but vary, depending on the size and ownership of the ditch.

Liquid Waste

Outside the Twisp or Winthrop municipal boundaries, you will need a septic system for sewage and wastewater. Two systems are commonly used in the Methow: pressurized-sand and gravity-fed. The system you use depends on your soil type seven feet below the surface; costs depend on the size of your home and site specifics. Loamy soils require gravity-fed systems; gravelly or sandy soils require pressurized-sand systems. Around 80 percent of new systems in the Methow are pressurized-sand.

The minimum lot size for a septic system is one acre (unless the lot is served by a public water system, in which case it is a half acre). Building codes require a 100-foot protective radius around your well, and you may not locate a driveway or build over the septic drainfield (up to 100 feet in length). If a plastic chamber system is used, the drainfield length can be reduced to 42 feet, which is easier to replant and maintain.

Roads & Driveways

As development spreads to more isolated areas, roads and driveways grow longer, wider and more numerous.

Roads are relatively easy to create, yet their impact lasts for centuries. Once created, roads get hotter, drier and dustier than the surrounding soils. They also create a prime location for weeds, which favor disturbed conditions and will quickly change native ecosystems.

The valley's climate is another important consideration when planning a road. Summer's infamous "moon dust" soils will eventually be covered with snow in the winter, then quickly turn to foot-deep muck in the early spring. As a result, roads require good drainage and regular maintenance.

Building a home that can be served by existing roads avoids unnecessary damage. If you build a driveway off of a county road, you will need to obtain a Road Approach Permit from the County Engineer at the Public Works Department. A driveway built off of a state road requires a permit from the Washington State Department of Transportation.

Some Characteristics of a Well-Planned Road

- Does not cross wetlands or riparian areas
- Minimizes erosion and sedimentation
- Uses culverts and drainage ditches to direct runoff
- Follows the contours of the natural landscape
- Blends in with the surrounding area
- Banks are reseeded early and often to discourage the spread of noxious weeds; weeds are continuously controlled
- Grade does not exceed 8 percent (for winter and emergency access)

A poorly planned road will quickly erode.

Weeds

Weeds deserve significant attention in the Methow Valley. They displace native vegetation because they survive in low-nutrient soils, produce large numbers of seeds (one Russian thistle plant may form 200,000 seeds), have few insect predators and are often disliked by grazing animals.

Weeds damage your property by increasing erosion rates, the risk of fire and evaporation rates from the soil surface. They decrease species and habitat diversity and the aesthetic value of invaded sites, and they increase the probability of toxic herbicide use.

A Weed Prevention Strategy

Weeds inevitably appear after any ground disturbance. Minimizing the area of disturbed ground, removing weed seeds and roots, hand pulling and quick replanting are the best approaches to slowing the spread of weeds.

Controlling invasive plants can be time consuming and expensive. Herbicides often require re-application every two to five years, and studies suggest that herbicides such as Round-up and Tordon (commonly used brands in the Methow) persist and accumulate in the soil, decreasing soil fertility over time.

Additional Tips for Avoiding Weeds

- Whenever you scratch the surface of the ground, be ready to immediately re-seed and water for successful germination
- Save your topsoil by creating a designated weed-free area for restoration soil
- Replant or re-seed based on specific conditions of your site
- Water whatever you plant, and continue to remove weeds throughout the growing season

Some of the Methow's noxious weeds. Clockwise from left: cheatgrass, whitetop, Russian thistle. *Joyce Bergen*

Weeds and Fire Risks

Invasive species typically grow quickly and die during the hottest part of the summer, while native plants are more fire-resistant. Dry weeds burn at high temperatures, and wind can quickly spread a brush fire around your home. Sparks from cars, tools, cigarettes or lightning can quickly lead to devastating fires. Establishing a weed-free buffer around your home and replanting native perennial species reduces fire danger. A sprinkler system can establish a well-tended perimeter around your home.

Okanogan County Weed Board

The county controls weeds with herbicide along nearly 1,400 miles of county roads. The Weed Board contacts landowners known to have large populations of newly invasive species and may require removal of the invasive plants. If you do not want your roadside sprayed and prefer to keep weeds under control yourself, you can sign a "No Spray Agreement" with the Weed Board early in the spring.

A "No Spray" sign in front of the Gentle Winds Farm.

Landscaping

The valley's low summer rainfall, alkaline soils and cold winters support a narrow range of plants that thrive under these conditions. Despite these obstacles, attractive gardens are possible.

The use of native shrubs, trees and flowers minimizes the need for irrigation and soil amendments. You can conserve water by planting grasses, perennials and flowers in early spring when it's most likely to rain, and woody vegetation such as trees and shrubs in the fall to take advantage of winter's precipitation and soil insulation.

Deer fencing is essential to protect vegetables, ornamental gardens and fruit trees. As a general rule, deer-resistant plants have hairy, aromatic leaves or silver foliage. For a more complete list of deer-resistant plants, visit the local nurseries (see p. 30) or contact the Okanogan County Extension Office.

RESTORATION HANDBOOK

The Methow Conservancy's *Shrub-Steppe Restoration Handbook* provides information on weed abatement and native plant restoration. Visit the Methow Conservancy office to request a copy.

Energy

The amount of energy your home uses is directly related to two variables: the size of your home and its energy efficiency. Energy efficiency increases when you choose a site with potential solar gain, orient your home to take advantage of natural heating and cooling, and insulate appropriately.

A tool called a solar siter will help you determine whether trees or ridges will block sunlight from your building site at various times of the year. You can make a solar siter with a simple kit available at the Methow Conservancy office.

The Aero Methow building in Twisp has a large grid-interconnected solar-electric system. It allows the owners to participate in Okanogan County PUD's incentive SNAP program. *Cindy Button*

On or Off the Grid

Most of the electrical power in the Methow Valley comes from large dams on the Columbia River. Two power companies distribute electricity in the Methow: the Okanogan County Electric Co-op and the Okanogan County Public Utility District.

Non-grid energy sources are either renewable or combustion systems. Renewable systems include passive and active solar, and geothermal. Combustion systems include propane, oil, wood pellet and wood-burning stoves; these vary significantly in efficiency and in the amount of air pollution they produce.

SUPPORTING RENEWABLE ENERGY

PUD (Public Utility District) customers who want to support local renewable energy generation can install a SNAP (Sustainable Natural Alternative Power) qualified system or make voluntary contributions with their power bill payments. These payments build the fund used to pay SNAP system owners for kilowatt-hours their systems generate.