2.2.3.2 Distributed Generation

Distributed generation is placement of small generators within load pockets in urban areas. Distributed generation is typically less than 5 MW in net generating capacity that is located on distribution feeders near customer load. Examples of distributed generation include fuel cells, micro turbines, photovoltaics, wind, landfill gas, and digester gas. Distributive generation is being done where feasible in major population centers but is not considered an acceptable alternative to the proposed project because distributed generation cannot deliver the amount for new generation capacity, approximately 3,335 MW per year, in the Western Electricity Coordinating Council (WECC).

2.2.3.3 Energy Conservation, Load Management and Load Curtailment

Energy conservation is the more efficient use of electricity by customers. Conservation incentive programs are designed to reduce energy consumption per customer, providing an increase in energy resources for new loads. Load management refers to power supply system improvements by a utility. *Load management programs, including curtailing load,* allow customer demand to be moved away from peak load hours, freeing existing resources to serve additional peak loads. While energy conservation and load management can somewhat reduce the demand for electric energy, they will likely not reduce the load growth to zero, thereby eliminating the need for new generation sources. Therefore energy conservation and load management cannot alone be considered an alternative action to meet the stated need for the project. For this reason this alternative was eliminated from further consideration.

2.2.4 ROUTING ALTERNATIVES ELIMINATED

Routing alternatives that were considered and eliminated are documented in Section 2.7.3 of this document.

2.3 ALTERNATIVES STUDIED IN DETAIL

2.3.1 NO ACTION

Under the no-action alternative, no new transmission facilities would be constructed by NorthWestern between the new Townsend Substation and the Midpoint Substation. Advantages of the no-action alternative would include: the preclusion of associated impacts on the environment from the construction and operation of the MSTI 500kV project and the elimination of financial costs associated with construction and operation of a 500kV transmission line, the new Townsend Substation, construction of the Mill Creek Substation, and the modifications to the existing Midpoint Substation in Idaho. However, the purpose, need, and benefits of the project as explained in Chapter 1, would not be met. Constraints on the transmission of electricity in the region would not be relieved, operational flexibility and reliability would not be improved, and economical power transfers, sales and purchases in the region would not realized.

The consequences of not constructing the MSTI 500kV transmission project would include the following:

- Assembling and erecting the structures.
- Clearing of pulling, tensioning, and splicing sites.
- Installing ground wires and conductors.
- Installing counterpoise/ground rods.
- Cleanup and site reclamation.

Helicopter construction is not proposed; therefore the narrative assumes all construction would be ground based. Various phases of construction would occur at different locations throughout the construction process. This would require several contractors operating at the same time in different locations.

Surveying Activities

Before construction surveying begins, it would be necessary to obtain either a survey permit on federal and state lands, or rights-of-entry for private lands. Construction survey work would consist of locating the centerline, structure center hubs, right-of-way boundaries; and structure access roads. All of these activities would begin approximately two years prior to the start of construction. Cultural resources and threatened and endangered species intensive surveys can begin once the survey of the centerline and access roads is completed and clearly marked.

Access Road Construction

The construction, operation, and maintenance of the proposed transmission line would require that heavy vehicles access structure sites along the right-of-way. If new access roads are required, they would be constructed to support the weight of these vehicles.

All roads would be upgraded or constructed in accordance with standard construction practices, or according to the land managing agencies' requirements. However, existing paved and unpaved highways and roads would be used, where possible, for the transportation of materials and equipment from storage yards to the areas where they would be needed along the transmission line right-of-way.

Private landowners or land users would be consulted before road construction begins. Road standards and plans for construction, rehabilitation and/or maintenance of roads would be documented in the POD during the engineering design phase of the project. These plans would incorporate the relevant criteria of the affected agencies and landowners or land users.

Where the proposed transmission line would parallel existing transmission lines or other linear utilities, the access roads along the existing utilities would be used wherever possible to minimize the amount of new road construction. However, these roads may require upgrading before they could be used for construction. All roads existing prior to construction of MSTI would be left in a condition equal to or better than the condition prior to construction. Wherever existing roads could be used, only spur roads to structure sites may be needed.

Permanent access roads would be constructed where needed for construction and long-term maintenance. Permanent roads would be graded to a travel service width of 14 feet, including back slopes and side cast material except where turnouts and curves or specifications of the land managing agency require a wider surface width.

Culverts or other similar drainage structures would be installed as necessary to cross streams and drainages. No other stream crossing methods are proposed. The roads would usually follow the natural grade. Wherever possible, roads would be built at right angles to streams and washes. In addition, road construction would include dust control and erosion control measures in sensitive areas. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the transmission line.

The approximate area of ground disturbance associated with the typical construction activities was estimated for six types or levels of access. The ground disturbance levels are summarized in Table 2-2. These access levels describe the assumptions for the degree of disturbance expected to occur with each access level. Further, the access levels consider areas of as much as five acres per mile that may be temporarily disturbed (e.g., grasses crushed) by structure construction sites, pulling, tensioning, and splicing sites, batch plants, and marshalling yards. This information was combined with slope data to provide an estimate of the potential ground disturbance that could result from upgrading existing roads or constructing new roads. These results were used as part of the impact assessment.

Table 2-2 Access Levels and Ground Disturbance

Level 1	*Existing Improved Roads*	Previously disturbed. Roads generally are in good condition but may require small improvements at stream crossings, steep slope areas, and other locations. New ground disturbance would be minimal. New spur roads would be required to access each structure site; an average of 300 feet of new spur road for each structure. Spur roads would disturb approximately 0.4 acres per mile of transmission line.
Level 2	*Roads that Require Improvement*	Previously disturbed. Existing two-track or narrow unimproved roads would require improvement to make roads serviceable (e.g., mowing, grading) for construction. Low ground disturbance; assume approximately 0.5 to 1.0 miles of road improvements for each mile of transmission line. Road improvements would disturb approximately 0.75 to 1.0 acres per mile of transmission line. An average of 300 feet of spur roads would be required to access each structure site. Spur roads would disturb about 0.4 acres per mile of transmission line.
Level 3	*Construct Road in Flat Terrain (0 to 8 percent)*	Low to Moderate ground disturbance for new access road construction; assume approximately 1.0 to 1.2 miles of new roads would be required for each mile of transmission line. Road construction would disturb approximately 1.7 to 2.0 acres per mile of transmission line.