LAND USE PLANNING NOTES

"STEWARDSHIP IN FORESTRY"

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Considerations for the Siting of Dwellings on Forest Land

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DWELLINGS ON FOREST LAND

Dwellings sited on forest land can present conservation and management problems on forest lands. Three primary problems can occur. First, the resident's activities and values may conflict with commercial forest management objectives. Second, the physical presence of the dwelling and related improvements can impede or restrict forest and farm operations. Finally, wildfire protection can become complicated—and expensive—where dwellings are present.

The siting of a new dwelling on forest land is an important consideration in trying to minimize these problems. The location can mean the difference between the continued growing and harvesting of trees on most forest land or additional forest land being unnecessarily taken out of production. Location and siting conditions can also be the difference between saving or losing a home during a wildland fire as well as losing additional forest land. The resident's activities, the dwelling and related improvements can increase the risk of a fire igniting and threatening forest land. Proper siting can reduce these risks.

RULE REQUIREMENTS

Oregon Administrative Rule (OAR) 660, Division 6—which addresses forest land—was adopted in January, 1990, by the Land Conservation and Development Commission. This rule includes standards to help minimize the conflicts discussed above. The new standards apply to all new dwellings and structures in forest and agriculture/forest zones. These standards are designed to make such uses compatible with forest operations and agriculture, to minimize wildfire hazards and risks, and to conserve values found on forest lands. A governing body is to weigh the standards in OAR 660-06-029 together with the requirements in OAR 660-06-035 to identify the building site (Note: OAR 660-

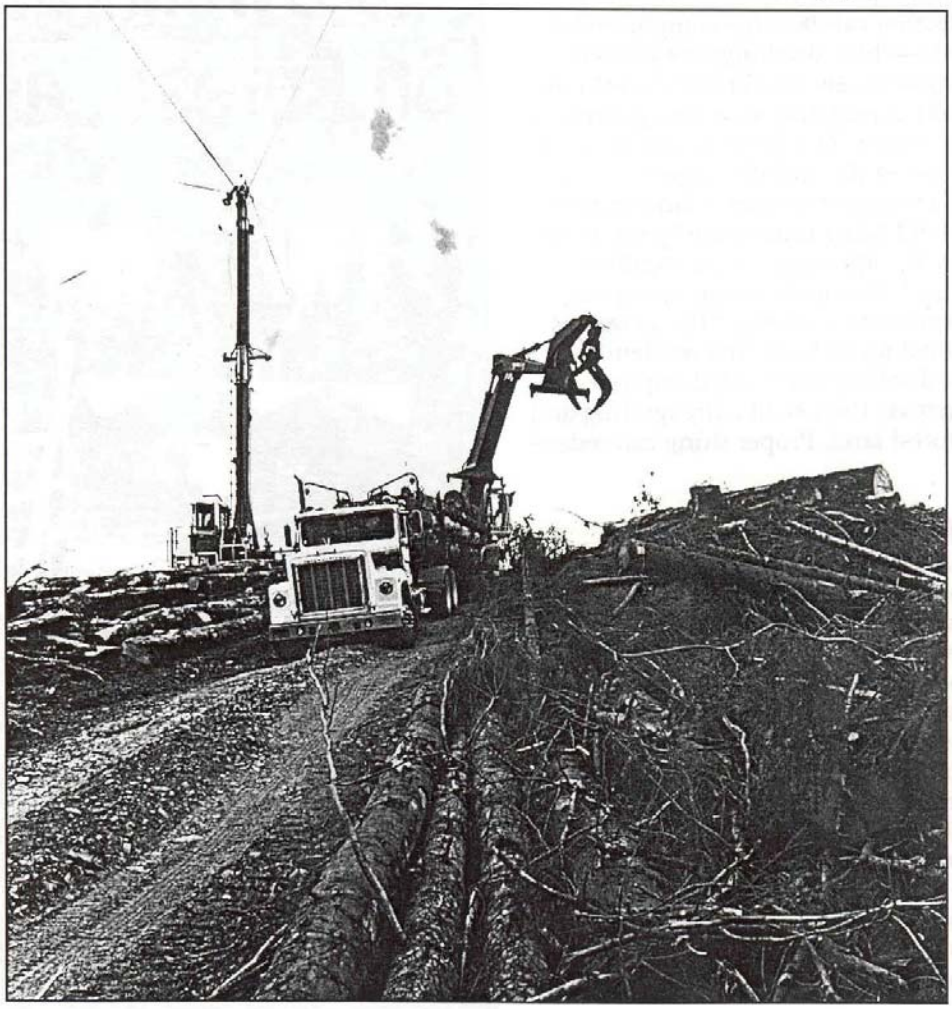
06-035 includes specific fire siting standards for water supplies, road access and fuel breaks. *Land Use Planning Notes* Number 1 addresses these standards. Copies are available from the Oregon Department of Forestry). OAR 660-06-029 requires that the following siting standards or their equivalent be applied:

(1) The dwelling and structures be sited on the parcel so that they shall have the least impact on nearby or adjoining forest operations;
(2) The siting ensures that forest operations and accepted farming practices will not be curtailed or impeded;
(3) The amount of forest land used to site access roads, service corridors, and dwelling and structures is minimized; and
(4) The risks associated with wildfire are minimized.

The rule suggests that these requirements may best be satisfied by:

(1) clustering the dwelling near or among existing dwellings,
(2) siting the dwelling close to existing roads,
(3) set-backs from adjoining properties, and
(4) siting the dwelling on that portion of the parcel least suited for growing trees.

In order to achieve the several purposes of OAR 660-06-029, the requirements of the rule are to be weighed together; that is, the final siting should optimize the requirements when considered together. Therefore, the rule clearly requires an evaluative process, including evaluation of the parcel's dimensions and topography, as well as an evaluation of the topography, forest fuels, types of forest operations and other forest uses that exist on adjacent tracts. Such an evaluation should ensure that any potentially nega-



tive impacts are reduced as much as possible.

The siting and safety standards discussed in this bulletin apply to all new dwellings and structures in forest and agriculture/forest zones. As part of this process, OAR 660-06-027 (2) and (2) (c) specifically require that information be provided for forest management dwellings showing the site for the proposed dwelling, and a description of related fire safety measures including water supply, road access and fuel breaks. The rule requires that the form attached in Appendix "A" of the rule, or its equivalent, be used to provide the information (a copy is attached to this document). The information must be sufficient to enable the Oregon Department of Forestry to determine (within 45 days) that the siting and safety standards have been adequately addressed. For non-forest dwellings, equivalent information must be provided showing the site for the proposed dwelling and a description of related fire safety measures.

Forest operations generally include the following types of forest practices:

- **Harvesting (final harvests and commercial thinning)**
- **Disposal or treatment of slash (including prescribed burning)**
- **Site preparation (including application of herbicides)**
- **Reforestation**
- **Pre-commercial thinning**
- **Stand maintenance (including herbicide and chemical applications for insect and disease control, competing vegetation control and fertilization)**
- **Road construction and maintenance.**

MINIMIZING THE IMPACT ON NEARBY OR ADJOINING FOREST OPERATIONS

As stated earlier, it is necessary to evaluate the types of forest operations and other forest uses that exist upon the applicant's tract, as well as adjacent tracts. The adjacent and nearby forest landowners should be contacted to determine the types and frequency of forest operations they will be conducting, and how they will be accessing the forest operations.

Each practice needs to be considered in the evaluation to ensure that the impacts of a proposed dwelling on nearby or adjoining forest operations are minimized. In deciding where to locate a dwelling, it is most likely that the practices of harvesting, the disposal and treatment of slash (especially slash burning), site preparation (especially the application of herbicides), stand maintenance (especially the application of herbicides and other chemicals), and road construction will need to be considered.

The difficulty and expense of conducting forest operations usually increases as steepness of slope increases. Therefore, when siting a dwelling in the proximity of forest operations that are constrained by topography, some additional consideration should be given.

Topography may also be a serious constraint to the construction of roads needed for access to forest operations. Dwellings should not be located where they will block needed access or increase the cost of road construction activities. For example, a house located too close to a slope that must be traversed by a road may require the additional end-hauling of excess material for the purpose of protecting the dwelling.

The Oregon Forest Practices Act (FPA) regulates forest operations and establishes minimum standards that protect forest resources, including soil, water and air. In the case of herbicide applications, the FPA requires that when applying herbicides by aircraft, the operator must leave an unsprayed strip of at least 60 feet adjacent to dwellings. The requirement of leaving an unsprayed strip of 60 feet may mean that the operator must stop spraying a considerable distance away from any dwelling to avoid any drift within the 60 foot unsprayed strip. The actual distance which is left unsprayed will

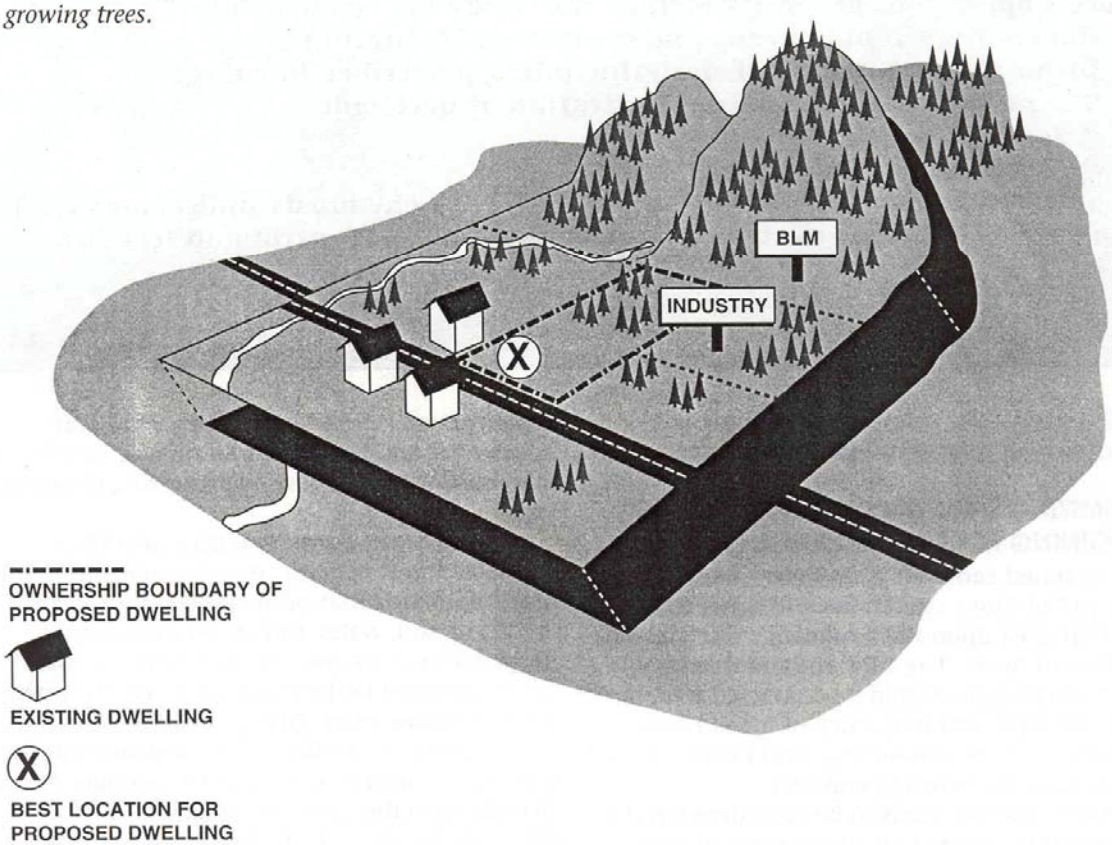
depend upon site specific conditions, especially topographic and weather conditions, but the greater the set-back from property lines, the less likely the dwelling will restrict spraying operations.

In the case of certain insect outbreaks (for example, the gypsy moth), it may be necessary to spray all affected forest land. Dwelling owners should understand that during certain insect control operations, it may be necessary to spray across all infested forest lands.

The harvesting of trees includes the felling, bucking, yarding, decking, loading and hauling of trees. Site evaluations need to anticipate where harvesting will occur and what methods of harvesting will be used. Homes should be set back as far as possible from areas that will be harvested to allow trees to be felled and yarded without placing the home at risk or requiring additional costs. Steep slopes make harvesting operations much more difficult. For example, on slopes greater than 35%, most operators will use

When planning a dwelling site on forest land, these factors should be considered. Locate the dwelling and structures so they have the least impact on nearby or adjoining forest operations. Ensure that forest operations and accepted farming practices will not be curtailed or impeded. Minimize the amount of forest land used for access roads and service corridors, as well as other dwellings and structures. Ensure the risks associated with wildfire are minimized.

It is suggested to cluster the dwelling near or among existing dwellings, site the dwelling close to existing roads, and site the dwelling on that portion of the parcel least suited for growing trees.



some sort of a cable yarding system. These systems usually require that a span of cable be used that may extend a considerable distance beyond the bottom of a harvest unit to provide suitable lift for the logs and to provide an adequate "tail hold" for the cable system. Tractor yarding operations, which generally occur on slopes less than 35%, will normally not require as much set-back consideration as will steeper ground.

The distance that will accommodate the felling, bucking and yarding of the trees depends upon the topography and the size of the material (trees and brush) that will provide the buffer between the harvest units and the structure. Generally, a set-back of at least 300 feet is desirable from any areas that are planned for harvest. This distance should be increased considerably (500 feet) where cable yarding operations are planned.

Slash burning is a forest practice used to: (a) prepare a site for planting, (b) control undesirable vegetation, insects and/or disease, and (c) reduce fire hazards. Generally, dwellings sited to minimize the risk associated with wildfire, as discussed below, will help minimize fire-related conflicts with slash burning operations. However, smoke produced by slash burning will often impact the local vicinity. Dwellings in the immediate area may be highly impacted. To minimize conflicts from slash burning, dwellings should generally be located below commercial forest land and sited as far as possible from potential areas that may be burned.

Based upon the evaluations discussed above, the dwelling should be sited as far as possible from nearby or adjoining commercial forest lands where a dwelling would conflict with such operations. Generally, dwellings should also be sited on flat ground, beyond the toe of any slopes whenever possible. Where other dwellings are located on adjacent parcels, the impact on nearby or adjoining forest operations will usually be minimized by clustering or locating the new dwelling close to existing dwellings. This approach minimizes the impact on forest land and also serves to concentrate both potential conflicts and necessary services (electricity, phone, etc.) thus making mitigation less complicated.

ENSURING THAT FOREST OPERATIONS AND ACCEPTED FARMING PRACTICES WILL NOT BE CURTAILED OR IMPEDED

If the particular situation warrants, thought should be given to mitigating potential problems created by the domestic traffic from the residents of the dwelling using roads designed principally for log hauling. Where a dwelling will be in close proximity to an unpaved road, a requirement to have the resident oil or pave the portion of the road in front of the house may prevent future complaints.

Homes should not be sited below areas of unstable slopes or within the alluvial plain of a stream that flows from forest land. Soil movement, slumps and debris flows are natural events. However, forest operators often become concerned about liability when they can potentially be accused of contributing to natural events. When a dwelling is sited on such risky sites, landowners may feel compelled to not conduct operations due to concern for the increased liability for damage to a structure.

Additional consideration should be made to make sure that potential dwelling owners fully understand the types of forest operations that may be conducted nearby and accept the fact that these operations often produce noise, dust and smoke.

MINIMIZING THE AMOUNT OF FOREST LAND USED TO SITE ACCESS ROADS, SERVICE CORRIDORS, THE DWELLING AND STRUCTURES

The purpose of this requirement is to minimize the amount of forest land taken out of production by the proposed residential use. Access roads, service corridors for electricity, telephone and water, and the dwelling and related structures all may take forest land permanently out of production.

Generally, this standard can be met by locating the proposed dwelling as close to existing dwellings and as close to existing county and state highways as possible, thereby minimizing the length of access roads and service corridor(s). Consistent with this approach, locating the road, service corridors and dwelling on portions of the parcel that are least or poorly suited for the growing and harvesting trees is also an objective to be weighed along with the other considerations. Areas near county and state highways often are not well suited for harvesting

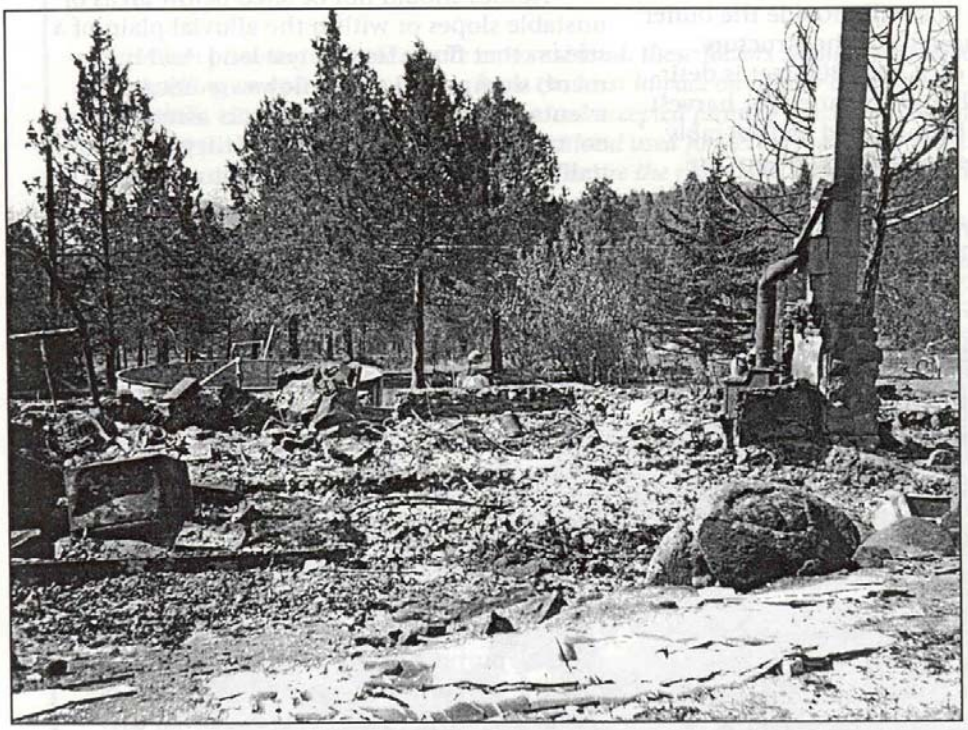
timber because of the desire to leave a buffer of trees along the highway.

Where possible, access roads and service corridors should be co-located. Additionally, burying electrical, phone and cable service lines can serve to assist in meeting this requirement, while also reducing associated fire risks.

MINIMIZING THE RISKS ASSOCIATED WITH WILDFIRE

To fulfill this requirement it is necessary to evaluate the primary factors in minimizing the risks associated with wildfire (Note: As stated earlier, specific fire siting requirements for water supplies, access and fuel breaks are included in OAR 660-06-035. The requirements of this rule are discussed in *Land Use Planning Notes* Number 1, which is available from the Oregon Department of Forestry). These factors are slope and topography, length of access and fuels. Fire spreads faster and burns hotter as slope steepens. Steepness of slope also complicates fire equipment access, control efforts and fuel modification. Therefore, dwellings should be located on a level portion of the parcel. Homes should not be located on slopes steeper than 40 percent. Natural features which should be avoided include narrow canyons and draws. These features serve as natural chimneys and intensify fire behavior. If the level portion of the parcel is the top of a ridge, the dwelling should be located at least 30 feet back from the slope.

Fire also burns hotter as the amount of available fuels increase. Such fuels as heavy brush and logging slash can burn with incredible intensity. Therefore, consistent with the guidance above, dwellings, where possible should be located in areas of light fuel such as grass that can be maintained as light fuel.



Forest land homes that are poorly sited are vulnerable to wildfire.

Having a good road to the home is critical. Generally, the dwelling should be sited to make the access road as short and flat as possible. Short roads will minimize the difficulty in gaining access to the dwelling in case of fire and will also reduce the amount of maintenance needed to keep the road in a condition which is usable by fire fighting equipment. Additionally, dwellings should not be located across culvert crossings, bridges or other roadway structures that may have restricted weight limits that prevent

access by fire suppression equipment. Such structures should be designed and built to support gross vehicle weights of 50,000 pounds.

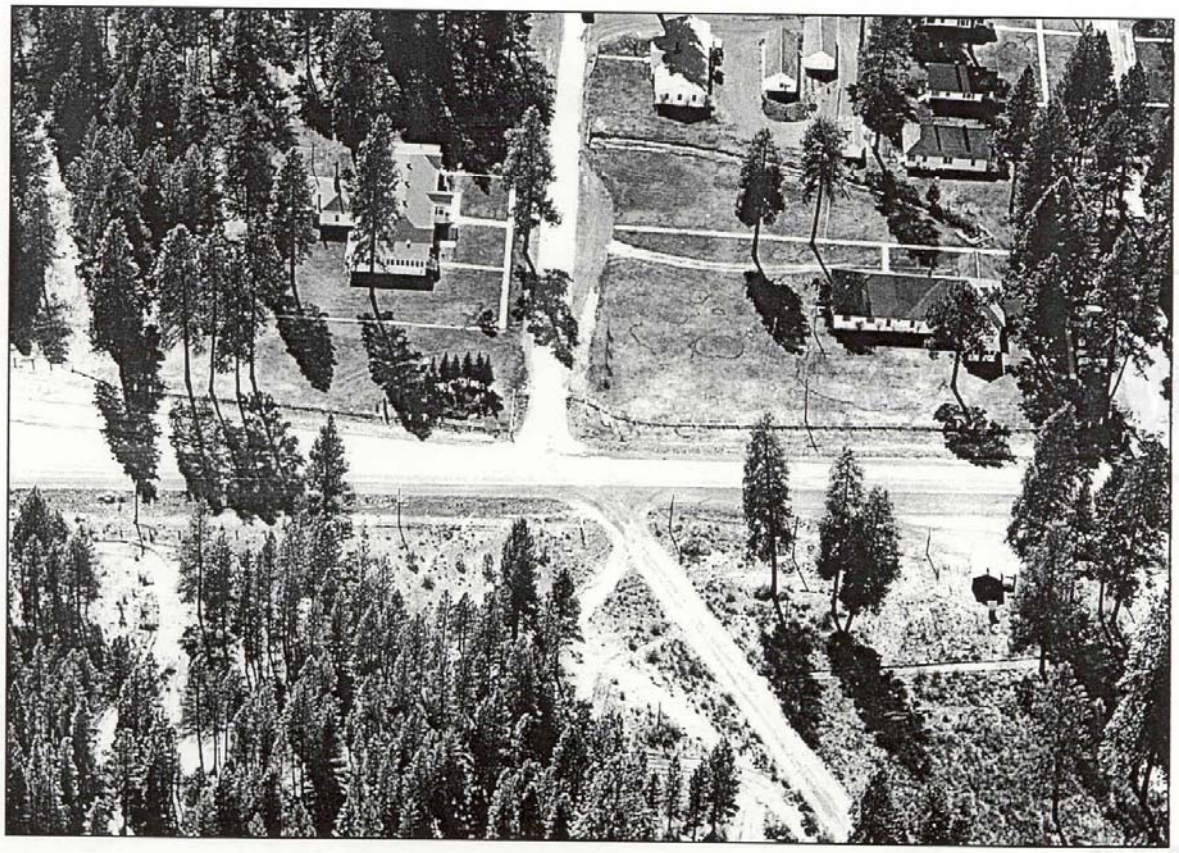
Powerlines are much like access roads. As much as possible, they should be kept short and located on terrain which is flat. Minimizing the length of the powerline and keeping it on flat terrain will reduce right-of-way maintenance needs and cost, as well as minimize the risk of trees and limbs touching the line and causing a fire. As discussed earlier, burying powerlines should be considered as one method of reducing fire risk.

SUMMARY

The requirements of the siting standards discussed in this bulletin are to be weighed together to ensure that the site has the least amount of impact on the factors listed in the rule. Evaluation of the dimensions, topography, forest fuels and types of forest operations and other forest uses that exists upon the applicant's tract and adjacent tracts are needed to ensure that potential impacts are minimized. In general, dwellings on forest land should be:

(1) Sited as far as possible from nearby or adjoining forest operations.
(2) Sited close to existing public roads and services. This will minimize the length of access roads and service corridor(s).
(3) Clustered near or among existing dwellings. This approach minimizes the impact on forest land and also serves to concentrate potential conflicts and makes mitigation less complicated.
(4) Sited on level ground, below commercial forest operations if possible and on that portion of the parcel least suited for growing trees. Slopes greater than 40 percent should not be build upon. Natural features including narrow canyons and draws should be avoided.

If you have questions about the Department of Forestry's recommendations, please call the nearest department office.



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