DOE/EA - 0904

ENVIRONMENTAL ASSESSMENT

ACCESS ROAD FROM STATE ROUTE 240

TO THE 200 WEST AREA

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

FEBRUARY 1994

DISCLAIMER

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Glossary

Acronyms and Initialisms

DOE	U.S. Department of Energy
EA	Environmental Assessment
ERDF	Environmental Restoration and Disposal Facility
MVM	million vehicle miles
NEPA	*National Environmental Policy Act of 1969*
PNL	Pacific Northwest Laboratory
SHPO	State of Washington Historic Preservation Officer
SR	State Route
USF&W	U.S. Fish and Wildlife Service
WDOT	State of Washington Department of Transportation

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Executive Summary

The U.S. Department of Energy (DOE) proposes to construct an access road on the Hanford Site, from State Route (SR) 240 to Beloit Avenue in the 200 West Area. Traffic volume during shift changes creates an extremely serious congestion and safety problem on Route 4S from the Wye barricade to the 200 Areas. A Risk Evaluation (Trost 1992) indicated that there is a probability of 1.53 fatal accidents on Route 4S within 2 years.

To help alleviate this danger, a new 3.5-kilometer (2.2-mile)-long access road would be constructed from Beloit Avenue in the 200 West Area to SR 240. In addition, administrative controls such as redirecting traffic onto alternate routes would be used to further reduce traffic volume. The proposed access road would provide an alternative travel-to-work route for many outer area personnel, particularly those with destinations in the 200 West Area.

This proposal is the most reasonable alternative to reduce the problem. While traffic safety would be greatly improved, a small portion of the shrub-steppe habitat would be disturbed. The DOE would offset any habitat damage by re-vegetation or other appropriate habitat enhancement activities elsewhere on the Hanford Site.

This Environmental Assessment (EA) provides information about the environmental impacts of the proposed action, so a decision can be made to either prepare an Environmental Impact Statement or issue a Finding of No Significant Impact. This EA evaluates alternatives to the proposed action, including a No-Action Alternative, in keeping with requirements of the *National Environmental Policy Act of 1969* (NEPA) implementing regulations issued by the Council on Environmental Quality (40 CFR 1500-1508), and the DOE NEPA Implementing Procedures (10 CFR 1021).

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1.0 Purpose and Need for Agency Action

The purpose of the agency action is to help alleviate dangerous rush-hour traffic conditions on Route 4S of the Hanford Site. Route 4S carries most of the traffic from the City of Richland to the 200 Areas (Figure 1). Traffic volume during shift changes creates an extremely serious congestion and safety problem. The State of Washington Department of Transportation (WDOT) *Design Manual* 22-M01 (WDOT 1991a), requires that any arterial carrying more than 700 vehicles per hour be a multi-lane highway. Surveys of Route 4S rush-hour traffic found 1,295 rush-hour vehicles in 1989 and 1,727 rush-hour vehicles in 1991 (Trost 1992); a 1993 update of rush-hour traffic counted 2,090 vehicles (Melbihess 1993). Traffic volume is expected to increase in the future.

Route 4S is the commuting route for Hanford Site employees traveling from the City of Richland to outer site areas. Traffic counts along 4S show this road is currently carrying over 21.4 million vehicle miles (MVM) per year, resulting in frequent traffic jams, and an increase in the probability for serious accidents. A Risk Evaluation performed in 1992 (Trost 1992), indicated that given the present car mileage on Route 4S, there is a probability of one or two fatal accidents within 2 years. The current accident rate for the Hanford Site highways is 3.56 per MVM, which is three times higher than the State of Washington for comparable highways. To reduce the probability of a fatal accident to a more acceptable 0.5 fatalities per year, there is a need to reduce traffic by 1,000 vehicles per day on Route 4S.

A number of administrative traffic controls, such as redirecting some traffic onto alternate routes, have been instituted as interim measures to reduce traffic problems. However, these alone will not provide the traffic reduction needed to alleviate this hazard.

A related highway improvement to Route 4S is currently under consideration as a Fiscal Year 1995 Line Item. This line item, which was recently approved for the start of conceptual design, would provide a four-lane highway between the Richland Wye Barricade and the 200 East Area, and construct some additional routes to the 200 West Area, all to handle projected traffic increases. The scope of the proposed Route 4S improvements will be addressed in the *National Environmental Policy Act of 1969* (NEPA) documentation required for the proposed line item project.

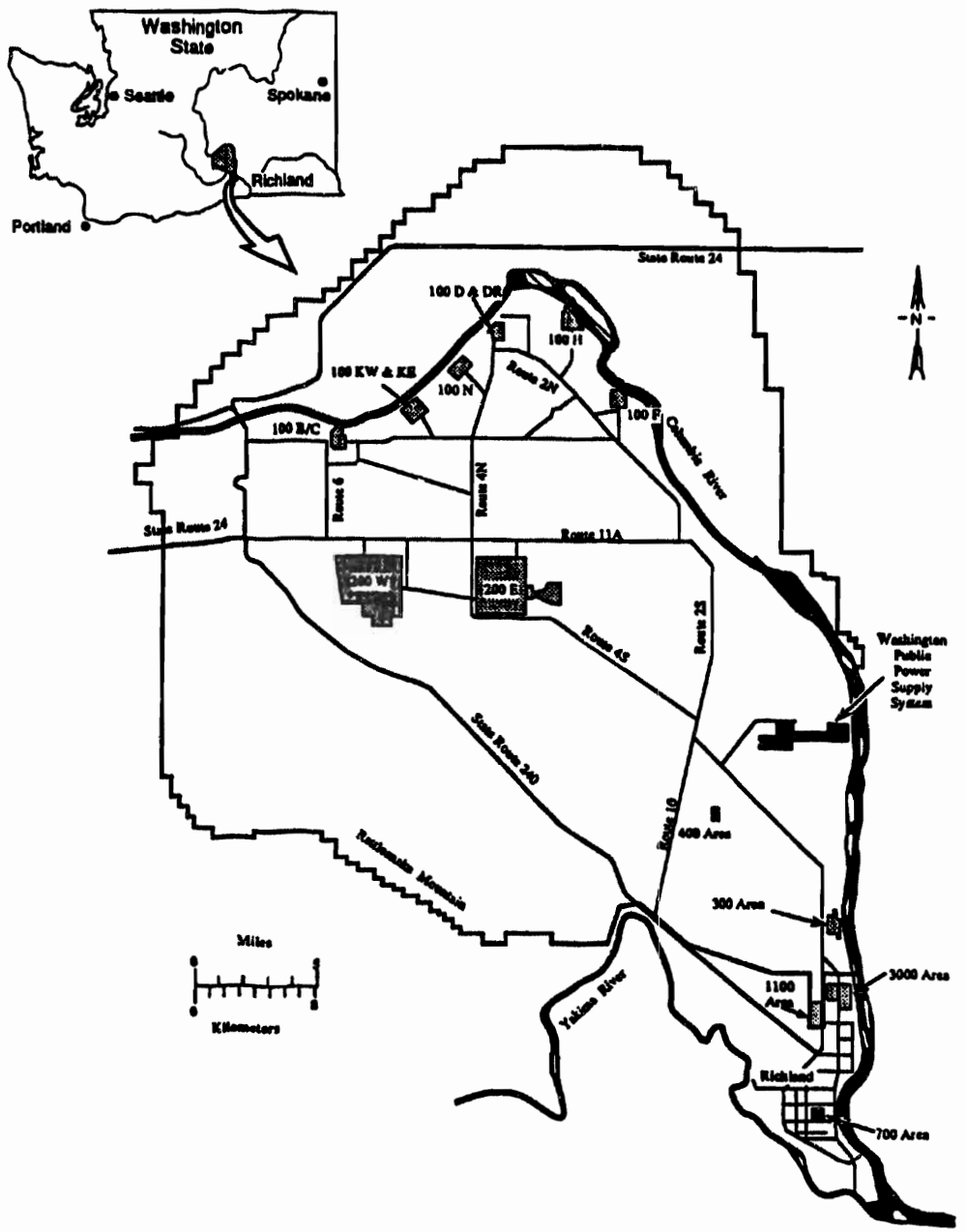

Figure 1. Hanford Site Map.

2.0 Description of the Proposed Action

The proposed action would build an access road from SR 240 to the 200 West Area and implement a set of administrative traffic controls. Administrative controls such as redirecting some traffic onto alternate routes would reduce traffic by 500 vehicles per day, and the proposed access road would reduce traffic by another 500 vehicles. This would produce the desired 1,000 vehicle per day reduction in traffic.

The proposed access road would consist of a two-lane blacktop road, capable of handling heavy traffic at the legal speed limit. The road would be constructed to meet WDOT standards by having two travel lanes, each 3.66 meters (12 feet) wide, with two 2.44-meter (8-foot) shoulders, for a total width of 12 meters (40 feet). Space for banks and ditches would bring the total width to 20.4 meters (67 feet). The proposed access road would cross the Army Loop Road at 0.8 kilometers (0.5 miles) from SR 240 (Figure 2).

Acceleration and deceleration lanes, meeting WDOT standards, would be provided at SR 240. The intersection would have safety lighting. A truck turnaround and guardhouse with safety lighting would be provided south of the Army Loop Road intersection. Security fencing would be provided, as required, to prevent access by the general public. Some minor adjustments would be required for the overhead power lines located near Beloit Avenue and the Public Utility District lines that parallel the Army Loop Road.

The SR 240 access road would be located on the east side of the 216-S-19 Pond, which is approximately 550 meters (1,800 feet) south of the 200 West Area's south boundary. A 61-meter (200-foot) buffer zone would be provided from the centerline of the highway, and the outer perimeter of the pond area, to provide sufficient room for future reclamation activities. The road would parallel the west boundary of a site being considered for the proposed Environmental Restoration Disposal Facility (ERDF), which would be a 1,554-hectare (6-square-mile) site for future solid waste disposal.

Administrative traffic controls would include (but not be limited to) offering ridership incentives, and redirecting some traffic on the longer Route 2S and 11A roads (Figure 2). Administrative remedies, to reduce the peak traffic volume during shift changes, would be evaluated and implemented as practicable. These administrative actions, combined with the proposed SR 240 access road, would reduce Route 4S traffic by the approximately 1,000 vehicles per day needed to attain safer traffic conditions.

Revegetation or other enhancement of nearby shrub-steppe habitat would be performed to offset any habitat disturbance that might be caused by the construction of the road. Specific locations for habitat enhancement would be selected from among several possible sites which have been identified in the vicinity of the 200 Area (Figure 3). The State of Washington Department of Wildlife and the Indian Tribes would be consulted on both site selection and the type of enhancement activities to be carried out.

Habitat enhancement strategies to offset possible disturbance to the shrub-steppe habitat could include hydroseeding, revegetation, transplanting, or other actions on equivalent areas of burned over or otherwise disturbed locations elsewhere on the Hanford site. Native species of shrubs and grasses, particularly *Artemisia tridentata* (big sage) that would have the best chance for survival would be used for revegetation efforts.

This Capital Funded project is estimated to cost less than $1 million for construction (including lighting and mitigation of habitat destruction). Day-to-day costs for security personnel would be borne by the Hanford Patrol, as part of their regular mission.

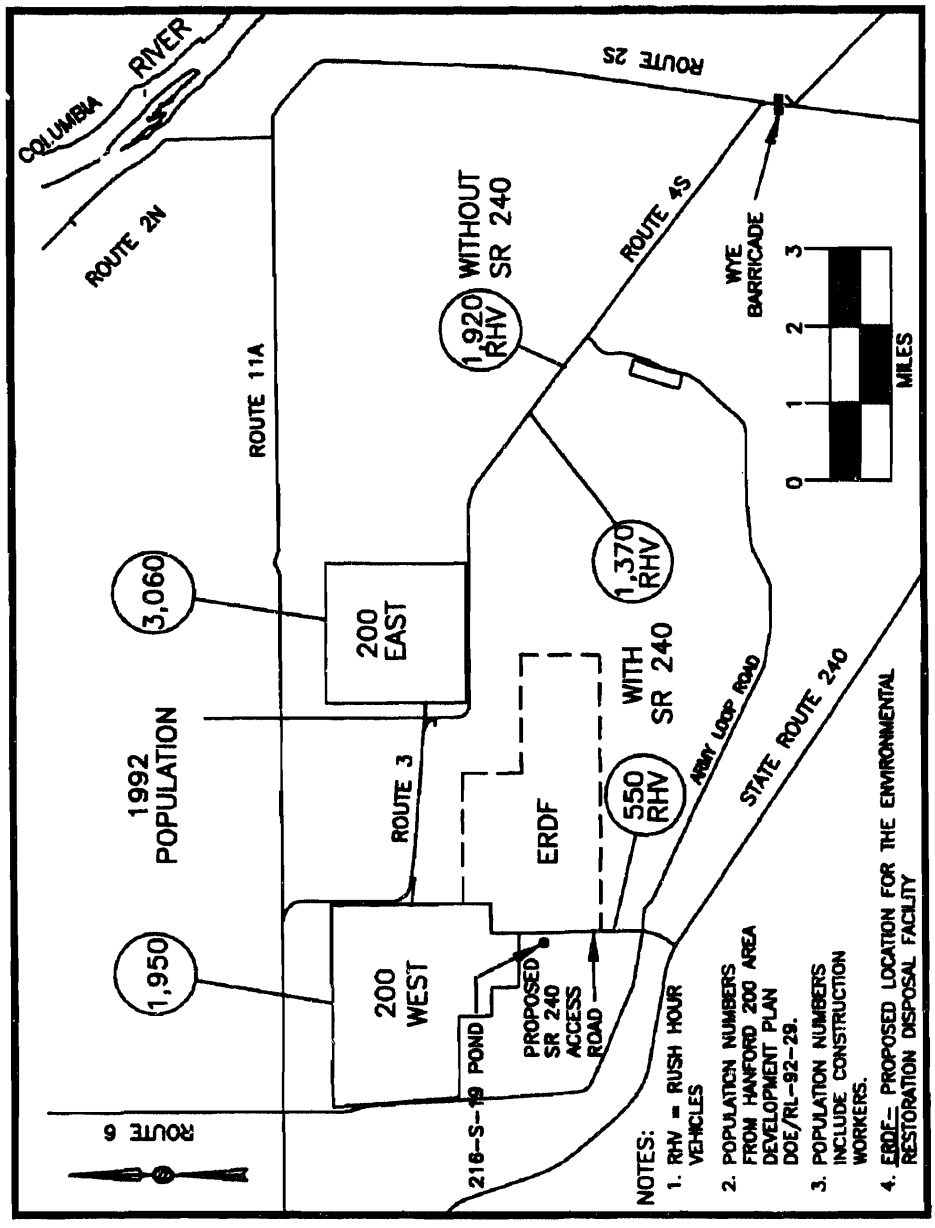

Figure 2. The 200 Areas with the Proposed Access Road.

3.0 Alternatives

A full range of alternatives to the proposed action have been evaluated.

3.1 No-Action Alternative

The No-Action Alternative would involve no change to the present road system. The existing two-lane section of Route 4S would continue to be overloaded, and would deteriorate and need upgrading pending the future decision to upgrade Route 4S. No future administrative actions would be taken to reduce traffic volume during shift changes, until the Route 4S upgrade is approved. The number and severity of vehicle collisions, including a high probability of fatalities, would continue. Although no expenditure of capital or operating funds is required for this alternative, because it would not reduce traffic congestion or improve highway safety on Route 4S.

3.2 Expand Bus System

An alternative of expanding the bus system to reduce traffic congestion and improve highway safety was evaluated. This would require additional buses, additional maintenance facilities, plus the cost of incentives to ensure ridership (with no guarantees). It was estimated that the yearly operating cost per bus would be $122,500 (Trost 1992).

When compared to the proposed action's goal of reducing Route 4S road use by 1,000 vehicles per day, and conservatively estimating that 10 percent of those vehicles would have more than one passenger, additional buses would have to transport 1,100 riders. This would require 22 new buses (50 riders per bus). Each bus is estimated to cost $284,000 for a total cost of $6,248,000. This does not include operating costs estimated at $122,500 per bus or $2,695,000 yearly. Operating costs would be incurred regardless of whether the bus service was provided by the U.S. Department of Energy (DOE) or a private company.

The economic analysis, and the ridership approval-and-use estimates, indicate that this alternative would be prohibitively expensive and would not result in the necessary number of new bus riders. Furthermore, since substantial additional funds would be required to implement this alternative, it could not be implemented in a timely manner. Therefore, this alternative was not proposed because of prohibitive costs, the delay in implementation, the uncertainty of bus ridership, and the uncertainty of its ability to reduce traffic congestion and improve traffic safety.

3.3 Construct Road in Different Location

Construction of the new access road in a different location also was evaluated. Any alternative route would be longer, have higher construction costs, and possibly have greater adverse impact on the natural environment because of greater acreage of habitat disturbed. Construction of the new access road over a nearby, parallel, and little used gravel road would still require installing a complete base and topping. This gravel road runs north-south, from a point on Route 3 just east of the 200 West Area, south to the Army Loop Road (Figure 2).

There are two access road routing options using this gravel road. The first option would make use of almost the entire length of the gravel road just described. From south of the Army Loop Road south to SR 240, the road would cross undisturbed land. This option would be about 5.6 kilometers (3.5 miles) long, and consume approximately 4.5 hectares (11 acres) more undisturbed sagebrush habitat than the proposed action because of its greater length.

The second gravel road option would use 1.4 kilometers (0.9 miles) of the south half of the gravel road. The access road would begin at Beloit Avenue, at the very southeast corner of the 200 West Area, and would swing southeast using an "S" curve to connect with the gravel road. From there south, this routing would be the same as the first described option. "S" curve alignments are inherently dangerous, and more expensive to construct than straight routes. This second gravel road option would be about 0.5 kilometers (0.3 miles) longer, and would disturb about 0.6 hectares (1.4 acres) more shrub-steppe habitat than the proposed route.

Either optional route would require crossing the Army Loop Road at a double curve in that road, and would introduce unsafe sight distance problems. In addition the alternate routes would produce a serious problem with tie-in to SR 240, create another sight distance problem, and would require greater land disturbance due to cut and fill during construction because of topography at that location. Use of either one of these gravel road options would pass close by a stand of about 20 trees where raptors nest. Heavy rush-hour traffic could have the potential to discourage raptor nesting.

Although the proposed road and its location would have the potential for some habitat fragmentation, the longer alternative routes would disrupt more area of habitat because of greater length. While constructing the new access road in a different location would meet the need of reducing traffic congestion and improving highway safety, it has greater cost and s[illegible]ty problems associated with curved roads, sight distance, and highway alignment. [illegible]tion also would need to be performed for the alternate routes.

3.4 Stagger Shifts

This alternative would use staggered shifts to spread the traffic over a longer period of time and reduce peak traffic counts. As many as five different shifts would be used (with arrival and departure times at 20-minute intervals). This would reduce the core time that all employees would be on the job in the 200 Areas to about 5 hours per day. The nature of work in the 200 Areas usually requires the presence and close integration of several specific disciplines (e.g., Radiation Protection Technologists, rigging, electricians, and plumbers) on each work crew. Productivity would be reduced for 3 hours a day. Van pools and ride-sharing arrangements would be disrupted.

Conservatively, assuming that productivity would be impacted by 10 percent for 3 hours a day, a loss of $1,500 per year ($6 a day) per employee would occur. Using the projected figure of 6,000 employees, this would represent a total loss of approximately $9 million per year (Trost 1992). Considerable administrative problems could result from this alternative. These administrative problems could include renegotiation of union contracts, major scheduling problems, and the possibility of increased expense for the current bus system, (including the possible need to purchase more busses to avoid having even more individual cars on the road because of the 20-minute staggered departure times). While this alternative could partially alleviate traffic congestion, it alone would not sufficiently reduce the traffic volume during shift changes.

3.5 Reversible Lanes

The possibility of using reversible lanes (i.e., one-way traffic during rush hours) also was evaluated (Trost 1992). One way of doing this would be to construct a third lane to the present two-lane Route 4S. The initial construction cost was estimated to be $6 million for road construction, plus another $6 million for a signal system. This three-lane construction would not be consistent with the future planned upgrade to four lanes. Another option would utilize Route 11-A for the return traffic. Although Route 11-A is approximately 14 kilometers (9 miles) longer, and does not require construction costs for a third lane, this configuration alternative would still encounter the expense of traffic control signals, estimated to be about $9 million for the first 6 years.

The nonstandard reversible configuration was judged to be inherently less safe than the present condition on Route 4S. Three-lane reversible traffic also was judged to be less safe than the present condition. Both ways of implementing reversible traffic were more expensive and less safe than the preferred alternative, one problem being that traffic can and does enter the highway from any point along Route 4S. This means that such casual traffic would not always be aware that lanes were reversed at the time of entry. Another contraindication is that a three-lane and reversible-lane systems could potentially create more head-on type collisions, which are inherently more destructive. Therefore, this alternative has been dismissed from further consideration.

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4.0 Affected Environment

The new access road would be located near the southeastern corner of the 200 West Area of the Hanford Site, approximately 40 kilometers (25 miles) northwest of the City of Richland. The elevation would be at approximately 218 meters (715 feet) above mean sea level, and would occur about 11 kilometers (7 miles) from the Columbia River. The new access road would not be located in the 100- or 500-year floodplain of the Columbia River, nor would it be located within a wetlands area. The water table in the 200 West Area is about 50 to 60 meters (164 to 197 feet) below the ground surface. The soils and underlying formations in the 200 West Area are composed of sedimentary materials consisting of silts, sands, and gravels.

The Hanford Site is 1,450 square kilometers (560 square miles) of essentially flat to gently rolling, treeless desert, although some trees are found along the Columbia River. Two topographical features dominate the landscape: Rattlesnake Mountain, which is a nearly treeless anticline 1,066 meters (3,500 feet) high, on the southwestern edge of the Hanford Site, and Gable Mountain, a ridge 339 meters (1,112 feet) high, north of the 200 East Area. The Hanford Site has a mild dry climate with 16 centimeters (6 inches) of annual precipitation and occasional high winds up to 129 kilometers (80 miles) per hour. No tornados have been sighted on the Hanford Site. The Hanford Site is in an area of low to moderate seismicity.

The area where the new access road would be located contains a shrub-steppe community of sagebrush and rabbitbrush, with an understory consisting primarily of cheatgrass and Sandberg's bluegrass. The sagebrush, cheatgrass, and Sandberg's bluegrass community are perhaps the most common in the area. The State of Washington has designated shrub-steppe as a Priority Habitat, which is defined as supporting unique or a wide variety of wildlife. Designating habitat as priority represents a priority measure to help prevent species from becoming threatened or endangered.

No plant species on the federal "List of Endangered and Threatened Wildlife and Plants" (50 CFR 17.11, 17.12) are known to occur on the Hanford Site. Columbia milkvetch and Hoover's desert parsley are federal candidate species, and are currently listed as threatened species by the State of Washington. The State of Washington lists columbia yellowcress and northern wormwood as endangered. These species are not known to exist on the 200 Area Plateau. Columbia yellowcress is a wet-land species. Hoover's desert parsley occurs on slopes near Hanford. Columbia milkvetch has been found on the Hanford Site, but has not been identified along the proposed route.

On April 27, 1993, biologists from the Pacific Northwest Laboratory (PNL) conducted a Biological Survey over the proposed project area (Appendix A). The survey focused on plant and animal species protected under the *Endangered Species Act of 1973*, candidate species for such protection species listed as threatened or endangered by the State of

Washington, and species listed as state monitor species. Sage sparrows, curlews, and loggerhead shrikes (federal- and state-candidate species) were found to exist in the area of the proposed road. No plant or animal species protected under the *Endangered Species Act of 1973* were found in the area of the proposed project.

Ten archaeological properties have been identified on the Hanford Site and are listed in *The National Register of Historic Places* (National Park Service 1988). None of these resources is located near the proposed access road. A Cultural Resource Survey (Appendix B) was conducted for the proposed project. Two late historic sites (tin cans and jars from domestic dump sites) and one disturbed army bivouac site (not recorded) were discovered nearby. The State of Washington Historic Preservation Officer (SHPO) agrees with the Cultural Resource Survey (Appendix B).

The project site is not located within a wetland area or on the 100-year floodplain. No endangered or threatened species or critical habitat would be affected by the proposed action. No impacts to archaeological, historical, or native American religious sites are anticipated. No wetlands or critical habitat areas have been identified in the proposed project area although the State of Washington has designated shrub-steppe as a Priority Habitat.

Additional information about the Hanford Site can be found in the publication entitled the *Hanford Site National Environmental Policy Act Characterization* (Cushing 1992).

5.0 Environmental Impacts of the Proposed Action and Alternatives

5.1 Impacts to Cultural Resources

A Cultural Resource Survey (Appendix B) was conducted for the proposed project. Two late historic sites (tin cans and jars from domestic dump sites) and one disturbed army bivouac site (not recorded) were discovered nearby. None of these sites were found to be eligible for inclusion on *The National Register of Historic Places* (National Park Service 1988). The Cultural Resource Survey concluded that "there be no special protective measures taken..." However, should an archaeological discovery occur during road construction tribes and the SHPO would be notified and construction halted until evaluation can be performed.

5.2 Impacts to Ecological Resources

On April 27, 1993, biologists from PNL conducted a Biological Survey over the proposed project area (Appendix A). The survey focused on plant and animal species protected under the *Endangered Species Act of 1973*. Candidates for such protection were plant and animal species listed as threatened or endangered by the State of Washington, and species listed as monitor species by the state.

A federal candidate bird species, the loggerhead shrike, was observed within one half mile of the proposed road site. Several loggerhead shrike nests have been observed along the old gravel road. This indicates that building the road in this area could impact some nesting habitat for the loggerhead shrike and possibly other species.

The survey concluded that "the proposed project should have no adverse impact on any plant or animal species presently protected by the *Endangered Species Act of 1973*." The recommendation was made that commencement of construction and off-road driving over the area be delayed until July, after the nesting season is over. Further recommendations were that "the unpaved habitat disturbed by construction should be replaced by replanting with native plants, focusing primarily on the shrub and grass components of the habitat."

Recognizing that continuous stands of shrub-steppe habitat are important for many plants and animals and that this habitat is shrinking elsewhere in Eastern Washington, the DOE intends to mitigate the effects of any habitat loss as part of the proposed action. The State of Washington Department of Wildlife and the Indian Tribes have been consulted and agree with this approach.

5.3 Construction Impacts

Of the 145,000 hectares (358,000 acres) of the Hanford Site, about 7.2 hectares (17.9 acres) would be used for the new access road, including berms. Gravel and crushed rock needed for construction would be taken from existing borrow pits.

Construction vehicles would produce noise, heat, and exhaust fumes, and would stir up dust during construction. Dust control measures would be implemented, mainly consisting of spraying raw water on the ground. A Radiation Survey (Appendix C), conducted for the proposed project, concluded that "no radioactive material was identified during the surface scans...a 150 foot off-set [from the 216-S-19 Pond] appears to be adequate for construction of the road." However, a Health Physics Technician would be present during surface clearing operations to monitor for contamination.

Miscellaneous construction scrap materials would be generated by the proposed activities. Solid wastes would be disposed of in accordance with all applicable federal and state regulations, and DOE orders and guidance. Sagebrush and vegetation removed from the road right-of-way would be burned or transplanted as part of mitigation, conditions permitting. All other waste would be disposed of in the existing Hanford Central Waste Landfill or other approved disposal sites. Any offsite disposal of waste would be at an appropriately permitted facility to accept the waste either for treatment or disposal. No hazardous or radioactive wastes would be generated by the proposed project.

5.4 Safety Impacts

Routine construction hazards would exist while the road is being constructed. Operations would be conducted in conformance with recognized safety codes and regulations to ensure a safe working environment. Because this is a new road there would be no regular traffic to contend with, making the construction inherently less hazardous. Hauling of gravel and other supplies on SR 240 would not substantially increase the risk of accidents on this little used road. Flagmen would be used at the junction of SR 240 and at the junction with Beloit Avenue during construction.

The increase in traffic on SR 240 would be considered acceptable when compared to the design capacity of this road which presently has eleven foot wide lanes. Planned development along SR 240 is expected to increase traffic to as many as 35,000 vehicle trips per day between the City of Richland, and the Horn Rapids triangle. The section of road in this area is therefore planned for upgrade by the state to four lanes in the future. Safety impacts due to road construction would be the same as those experienced on other road construction projects. Positive safety impacts would be the decrease in traffic dangers faced by workers driving to work in the outer areas.

5.5 Cumulative Impacts

The proposed action would indefinitely remove about 7.2 hectares (17.9 acres) of shrub-steppe habitat from the ecosystem, and cause some fragmentation of a continuous stand of sagebrush. The highway improvement to Route 4S is currently scheduled as a Fiscal Year 1995 Line Item. The cumulative impacts of the proposed Route 4S action will be addressed in the NEPA documentation required for that project. As waste management and infrastructure activities continue on the Hanford Site, some additional shrub-steppe habitat may be lost or fragmented as the Hanford Site's environmental restoration mission is completed. It is anticipated that some of that impact would be mitigated through revegetation of previously burned or built-up areas.

5.6 Impacts of Alternative Actions

Upgrading Route 4S would have the impact of the status quo in that no changes would take place until 1997 due to the federal budget cycle, and would mean no reduction in the unsafe traffic. Increased bussing would offer uncertain benefits, and is not an economically feasible short-term solution. Alternative routes would be more expensive, and less safe than the proposed action. Staggered schedules and other administrative measures may be implemented as near-term partial solutions to complement the proposed actions. The No-Action Alternative has no impact on the natural environment, but does not reduce the safety problem.

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6.0 Permits and Regulatory Requirements

The proposed project would comply with all applicable federal, state, and local laws and regulations, and DOE orders, and would meet the following standards:

- ANSI D6.1-1988, *Uniform Traffic Control Devices for Streets and Highways* (ANSI 1988)
- Benton County Code, *Model Traffic Ordinance*, Chapter 10.04.
- DOE Order 5480.4, *Environmental Protection, Safety, and Health Protection Standards* (DOE 1984)
- DOE/RL Order 5480.4C, *Environmental Protection, Safety, and Health Protection Standards for RL* (DOE/RL 1992)
- DOE Order 6430.1A, *General Design Criteria* (DOE 1989)
- "Motor Vehicles" *Revised Code of Washington* (RCW 46 1987)
- *Policy on Geometric Design of Highways and Streets*, GDHS-2 (AASHTO 1990)
- State of Washington Department of Transportation, *Standards and Specifications for Road, Bridge, and Municipal Construction* (WDOT 1991b).

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7.0 Agencies Consulted

The WDOT and the Benton County Engineering and Planning Departments were consulted concerning road engineering and safety requirements for the proposed action. The SHPO, and the U.S. Fish and Wildlife Service (USF&W) were consulted. The State of Washington Department of Ecology, the State of Washington Department of Fish and Wildlife, as well as the Yakama Indian Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribe received this Environmental Assessment (EA) in draft form. Their comments were considered in preparing the final EA and are summarized below. A biologist employed by the Yakama Indian Nation was present during the Biological Survey but did not participate in the survey.

The Indian Tribes and State of Washington agencies that reviewed the draft EA expressed concerns about impacts to the shrub-steppe habitat. In addition, several comments were made concerning inadequate treatment of non-road construction alternatives such as bussing, and about increased safety concerns on SR 240. Most of the reviewers recommended using the gravel road route instead of the proposed route. The Biological Survey which was conducted for the proposed road, was discussed in a telephone conference with Ms. Christie Swisher of the USF&W.

As a result of these comments, the DOE has re-analyzed the alternatives and added mitigation to the proposed action.

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8.0 References

10 CFR 1021, 1992, "National Environmental Policy Act Implementing Procedures," *Code of Federal Regulations*, as amended.

40 CFR 1500-1508, 1992, "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act," *Code of Federal Regulations*, as amended.

50 CFR 17, 1992, "Endangered and Threatened Wildlife and Plants," *Code of Federal Regulations*, as amended.

AASHTO, 1990, *Policy on Geometric Design of Highways and Streets*, GDHS-2, American Association of State Highway and Transportation Officials, Washington, D.C.

ANSI, 1988, *Uniform Traffic Control Devices for Streets and Highways*, ANSI D6.1-1988, American National Standards Institute, New York, New York.

Benton County Code, *Model Traffic Ordinance*, Chapter 10.04.

Cushing, C. E., 1992, *Hanford Site National Environmental Policy Act (NEPA) Characterization*, PNL-6415, Rev. 5, Pacific Northwest Laboratory, Richland, Washington.

DOE, 1984, *Environmental Protection, Safety, and Health Protection Standards*, DOE Order 5480.4, U.S. Department of Energy, Washington, D.C.

DOE, 1989, *General Design Criteria*, DOE Order 6430.1A, U.S. Department of Energy, Washington, D.C.

DOE/RL, 1992, *Environmental Protection, Safety, and Health Protection Standards for RL*, Order 5480.4C, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Endangered Species Act of 1973, 16 USC 1531-1544 et seq.

Melbihess, R. D., 1993, *Identify and Document a Serious Traffic Safety Concern for Hanford*, (internal memo 56540-93-010 to D. J. Swaim, A. L. Trego, May 4, 1993), Westinghouse Hanford Company, Richland, Washington.

National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq.

National Park Service, 1988, *The National Register of Historic Places*, National Park Service, U.S. Department of the Interior, Washington, D.C.

RCW 46, 1987, "Motor Vehicles," Title 46, 2 vols., *Revised Code of Washington*, as amended.

Trost, E. T., 1992, *Primary Highway Route North of the Wye Barricade*, WHC-SD-L102-ES-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

WDOT, 1991a, *Design Manual*, 22-M01, State of Washington Department of Transportation, Olympia, Washington.

WDOT, 1991b, *Standards and Specifications for Road, Bridge, and Municipal Construction*, M41-10, State of Washington Department of Transportation, Olympia, Washington.

Appendix A

Biological Survey for the Proposed Highway 240 200 West Area Access Road (#93-WHC-033)

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May 27, 1993

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BIOLOGICAL REVIEW FOR THE PROPOSED HIGHWAY 240/200 WEST AREA ACCESS ROAD, #93-WHC-003

Dear Mr. Trost,

On April 27, 1993, N.A. Cadoret and W.H. Rickard of the Pacific Northwest Laboratory, accompanied by C. Robson, a botanist with the Yakima Indian Nation, conducted a biological survey for the above-referenced project. This survey focused on plant and animal species protected under the Endangered Species Act, candidates for such protection, plant and animal species listed as threatened or endangered by the State of Washington, and species listed as monitor species by the State. The area was surveyed by walking transects spaced 20 m apart covering an area 50 m on each side of the staked centerline for the proposed roadway.

One Federal candidate-2 species, the loggerhead shrike (*Lanius ludovicianus*), a Federal candidate-3 species and State monitor species, the long-billed curlew (*Numenius americanus*), and a State candidate species, the sage sparrow (*Amphispiza belli*) were identified in the project area. One loggerhead shrike was observed on the powerline within 0.5 km (0.3 mi) of the site. Two other shrikes were observed on the same powerline within 5 km (3 mi) of the proposed line. No other shrikes were observed during the survey, but this habitat and area is known to be used for nesting by these birds (Poole, 1992). A pair of long-billed curlews were heard calling in the immediate vicinity of the proposed road and one of these was also observed. It is likely that they have a nest close to the proposed road. Ten male sage sparrows were seen and/or heard along the proposed route. Sage sparrows are also likely to be nesting in the area. No state- or federally-listed plants were observed in the proposed project area. Table 1 lists the plant species observed within the project area, and Table 2 lists the animal species or their sign observed.

Table 1. Plant species within the proposed project area.

	Species	Common name
Shrubs	*Artemisia tridentata*	Big sage
	Chrysothamnus nauseosus	Grey rabbitbrush
	Chrysothamnus viscidiflorus	Green rabbitbrush
	Grayia spinosa	Spiny hopsage
	Purshia tridentata	Bitter-brush
Perennial grass	*Agropyron dasytachyum*	Thickspike wheatgrass
	Koeleria cristata	June grass
	Oryzopsis hymenoides	Indian ricegrass
	Poa bulbosa	Bulbous bluegrass
	Poa sandbergii	Sandberg's bluegrass
	Sitanian hystrix	Bottlebrush squirreltail

	Stipa comata	Needle-and thread grass
Annual grass	*Bromus tectorum*	Cheat grass
	Festuca octoflora	Slender sixweeks
Perennial forbs	*Abronia mellifera*	White sandverbena
	Achillea millefolium	Yarrow
	Arenaria franklinii	Franklin's sandwort
	Astragalus spp.	Milkvetch
	Balsamorhiza careyana	Carey's balsamroot
	Brodiaea douglasii	Douglas's brodiaea
	Chaenactis douglasii	Hoary falseyarrow
	Calochortus macrocarpus	Sagebrush mariposa lily
	Comandra umbellata	Bastard toadflax
	Crepis atrabarba	Slender hawksbeard
	Cymopterus terebinthinus	Turpentine cymopterus
	Erysimum asperum	Rough wallflower
	Eriogonum niveum	Snow buckwheat
	Fritillaria pudica	Yellow bell
	Hymenopappus filifolius	Columbia cutleaf
	Lomatium triternatum	Nineleaf desertparsley
	Oenothera pallida	Pale evening-primrose
	Opuntia polyacantha	Starvation cactus
	Penstemon acuminatus	Sand beardtongue
	Phacelia hastata	Whiteleaf scorpionweed
	Phlox longifolia	Long-leaved phlox
	Polemonium micranthum	Annual Jacob's ladder
	Rumex venosus	Sandy dock
Biennial forbs	*Machaeranthera canescens*	Hoary aster
	Thelypodium laciniatum	Thickleaved thelypody
	Tragopogon dubius	Yellow salsify
Annual forbs	*Ambrosia acanthicarpa*	Bur ragweed
	Amsinckia lycopsoides	Tarweed fiddleneck
	Cryptantha circumscissa	Matted cryptantha
	Cryptantha pterocarya	Winged cryptantha
	Descurania pinnata	Tansy mustard
	Descurania sophia	Flixweed
	Draba verna	Spring whitlow-grass
	Gilia sinuata	Shy gilia
	Holosteum umbellatum	Jagged chickweed
	Layia glandulosa	Tidytips
	Lupinus pusillus	Low lupine
	Microsteris gracilis	Pink microsteris
	Phacelia linearis	Threadleaf scorpionweed
	Penstemon acuminatus	Sand beardtongue
	Salsola kali	Russian thistle
	Sisymbrium altissimum	Tumblemustard

Table 2. Animal species or their sign observed in the proposed project area.

	Species	Common name	Comments
Mammals	*Perognathus parvus*	Great Basin pocket mice	
	Tomomys talpoides	Pocket gophers	
	Lepus californicus	Blacktail jackrabbit	
	Taxidea taxus	Badgers	
	Canis latrans	Coyotes	
Birds	*Lanius ludovicianus*	Loggerhead shrikes	
	Numenius americanus	Long-billed curlews	
	Eremophila alpestris	Horned larks	nest observed
	Sayornis saya	Says phoebe	
	Sturnella neglecta	Western meadowlarks	
	Zonotrichia leucophrys	White-crowned sparrows	
	Amphispiza belli	Sagesparrows	
Reptiles	*Phrynosoma douglassi*	Short-horned lizard	
	Uta stansburiana	Side-blotched lizards	

To prevent impacts to nesting birds, construction of the road should not start until the end of the nesting season (early July). Offroad vehicle traffic should be limited to the existing tracks, and should be discouraged until July.

The proposed project should have no significant adverse impact on any plant or animal species presently protected by the Endangered Species Act. The primary impact on candidate bird species from the proposed road construction will result from loss of habitat. The proposed right of way will destroy several acres of mature sagebrush/bunchgrass habitat. In part because of the prevalence of wild fires on Hanford due to the widespread abundance of the alien cheatgrass, the mature sagebrush habitat has shrunk to less than half its original distribution. This habitat constitutes preferred nesting habitat for both loggerhead shrikes and sage sparrows. The unpaved habitat disturbed by construction should be replaced by replanting with native plants, focusing primarily on the shrub and grass components of the habitat.

If you have any questions, please feel free to call me at the number above.

Reference: Poole, L. D. 1992, *Reproductive Success and Nesting Habitat of Loggerhead Shrikes in Shrubsteppe Communities*, Unpub. MS Thesis, Oregon State University, Corvallis, OR.

Sincerely,

C. A. Brandt, PhD.
Senior research scientist

bcc: NA Cadoret
LL Cadwell
JL Downs
LE Rogers
File/LB

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Appendix B

Hanford Cultural Resource Survey for State Route 240 Access Road to the 200 West Area. (HCRC #93-0600-014)

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Battelle
Pacific Northwest Laboratories
Battelle Boulevard
P.O Box 999
Richland, Washington 99352
Telephone (509) 372-1791

April 23, 1993

Mr. Charles Pastemak
U.S. Department of Energy
Richland Field Office
P.O. Box 550/A7-27
Richland, WA 99352

STATE ROUTE 240 ACCESS ROAD TO 200 W. HCRC#93-0600-014.

Dear Charles:

We completed our cultural resource survey for the State Route 240 Access Road on April 13 and 14, 1993. The survey report is underway and will be finished by April 30, 1993. Following editorial review and clearance we will submit two copies of the report to you; one for your retention, the second for submission to the State Historic Preservation Office. Two late historic sites , HT-93-001 and HT-93-002, and one disturbed army bivouac site (not recorded) were found within the proposed road corridor.

None of these sites retain unique or significant attributes that would make them eligible for inclusion on the National Register of Historic Places. HT-93-001 has been collected and is stored at the Hanford Cultural Resources Laboratory. This site may represent a "one-time" dumping event associated with operations at the Benson Ranch located approximately 4.5 km southwest of the site location. Artifacts at HT-93-002 (hole-in-top milk cans, sanitary cans and a single gallon jar) represent a partially buried domestic dump located 3.5 km from Benson Ranch. The can scatter at HT-93-002 was recorded and mapped but not collected. This documentation provides an adequate record of HT-93-002, therefore additional work is not recommended. The army bivouac area had been bulldozed to remove evidence of army activities. The remains include scattered metal pieces, a semi-buried 55 gallon drum, wire and steel posts, changes in vegetation types, minor landform modifications and a faint roadway. We recommend that there be no special protective measures taken for HR-93-001, HT-93-002 or the bivouac area.

Very truly yours,

M.K. Wright
M. Wright
Scientist
Cultural Resources Project

George V. Last, Acting Manager
Cultural Resources Project

cc: T. Trost, WHC

STATE OF WASHINGTON
DEPARTMENT OF COMMUNITY DEVELOPMENT
OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION
111 21st Avenue S.W. • P.O. Box 48343 • Olympia, Washington 98504-8343 • (206) 753-4011 • SCAN 234-4011

June 23, 1993

Mr. Charles R. Pasternak
Cultural Resources Program Manager
Department of Energy
Richland Field Office
Post Office Box 550
Richland, WA 99352

Log: 060493-39-DOE
Re: S.R. 240 Access Road to 200 West Area

Dear Mr. Pasternak:

The Washington State Office of Archaeology and Historic Preservation (OAHP) is in receipt of information regarding the above referenced project. From your letter, I understand that the Department of Energy proposes to construct a new access road connecting S.R. 240 with the 200 West Area at the Hanford Site.

In response, I have reviewed the survey report and Archaeological Site Forms for sites HT-93-001 and HT-93-002. As a result, I concur with your opinion that neither site is eligible for listing in the National Register of Historic Places. Therefore, this action will have no effect upon known properties listed in, or eligible for listing in, the National Register. However, in the event that archaeological resources are discovered during construction, work should be halted immediately and contact made with OAHP for further consultation.

Thank you for the opportunity to comment on this action. Should you have any questions, please feel free to contact me at (206) 753-9116.

Sincerely,

Gregory A. Griffith
Comprehensive Planning Specialist

GAG:aa

cc: Mona K. Wright

Appendix C

Radiological Survey for the Proposed Interchange Between 240 South and the 200 West Area

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Westinghouse Hanford Company **Internal Memo**

From: Site Surveillance Health Physics 33140-93-014
Phone: 3-4286 T1-25
Date: April 30, 1993
Subject: PROPOSED INTERCHANGE BETWEEN 240 SOUTH AND 200 WEST

To: M. B. Strope H6-26

cc: J. W. Schmidt H6-30
E. T. Trost B4-64
R. L. Watts L6-52
DSG File/LB

The proposed route between highway 240 South and the 200 West Area has been surveyed by Site Surveillance Health Physics. Surveys were performed using the stakes marking the route as a guide. No radioactive material was identified during the surface scans. The results of these surveys are documented on Radiation Survey Reports N148401 and N148408.

The proposed route approaches only one (1) radiologically posted area. This area is the 216-S-19 Pond. The pond is posted as an Underground Radioactive Materials (URM) and has concrete marker posts to identify the extent of the affected area. The radiological surveys were performed at an approximate distance of 150 feet from the Eastern edge of the 216-S-19 Pond. No problems were identified with this area. Based on our radiological surveys, a 150 foot off-set appears to be adequate for construction of the road.

Health Physics coverage during construction will be required. Particular attention will be placed on construction in the vicinity of the 216-S-19 Pond.

Site Surveillance Health Physics will be providing support for the construction. We are looking forward to the start of construction and appreciate your help and cooperation during the design phase.

If there are any additional questions or concerns please call our office at 373-4286 or 373-2658.

D. S. Gunnink
Manager

kss

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FINDING OF NO SIGNIFICANT IMPACT

ACCESS ROAD FROM STATE ROUTE 240

TO THE 200 WEST AREA

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

FEBRUARY 1994

Finding of No Significant Impact
for
Construction of an Access Road from State Route 240 to the 200 West Area of the Hanford Site, Richland, Washington

Agency: U.S. Department of Energy

Action: Finding of No Significant Impact

Summary: The U.S. Department of Energy (DOE) has prepared an environmental assessment (EA), DOE/EA-0904, to assess the environmental impacts associated with construction of an access road from State Route 240 to the 200 West Area at the Hanford Site. The road construction is proposed to relieve a serious congestion and safety problem on Route 4S, the main commuter route utilized by employees working in the 200 West Area at the Hanford Site.

Based on the analysis in the EA, DOE has determined that the proposed action would not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321, et seq. Therefore, an environmental impact statement (EIS) is not required.

Addresses and Further Information:

Single copies of the EA and further information about the proposed project are available from:

Mr. M.B. Hitt, Director
Site Infrastructure Division
U. S. Department of Energy
Richland Operations Office
Richland, Washington 99352
Phone: (509) 376-6550

For further information regarding the DOE NEPA process, contact:

Carol M. Borgstrom, Director
Office of NEPA Oversight
U. S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585
Phone: (202) 586-4600 or leave a message at (800) 472-2756

Proposed Action: DOE proposes to take action to alleviate serious congestion and safety problems under rush-hour traffic conditions on Route 4S at the Hanford Site. Route 4S carries the majority of the traffic from Richland to the 200 Areas during rush-hour. Based on current traffic volume, there is a likelihood of more than one fatal accident on Route 4S in the next two years.

The proposed action would involve implementing a set of administrative traffic controls and constructing a two lane asphalt access road slightly over 2 miles long from Beloit Avenue in the 200 West Area to State Route 240. The administrative traffic controls include offering ridership incentives and redirecting some traffic to a longer route. Administrative traffic controls are expected to reduce traffic on route 4S by 500 vehicles a day. An additional 500 vehicles a day are expected to use the new access road. Acceleration and deceleration lanes would be provided at SR-240, and the intersection would have safety lighting. A truck turnaround and guardhouse with safety lighting would be provided south of the intersection of the new access road and Army Loop Road, and security fencing would be provided to prevent access to the 200 Area by the public. The total cost of the proposed action is expected to be less than $1,000,000.

Alternatives: DOE considered several alternatives to the proposed action. The no action alternative would neither reduce traffic congestion nor improve highway safety on Route 4S. All of the other alternatives considered would cost more than the proposed action. Expanding the bus system and upgrading Route 4S would require an initial investment of over $6,000,000 for new buses and about $2,500,000 a year in bus operation and maintenance expense, but would not guarantee traffic reduction. The cost of using private buses to provide service is estimated to be at least $2,500,000. Switching to a staggered shift work schedule (five shifts with arrival and departure times 20 minutes apart) was estimated to cost about $9,000,000 a year in lost productivity. Constructing a third lane for Route 4S and installing reversible lane signals, or using Route 11-A for traffic outbound from the 200 Areas during rush hour were both considered, but the least expensive of these reversible lane alternatives would cost about $9,000,000, and the reversible lane configuration would be less safe than present conditions on route 4S. Finally, constructing the access road in a different location was considered, but rejected due to higher construction costs and because construction along alternative routes would disturb a larger area of shrub-steppe habitat than the proposed access road and potentially disturb raptors that nest near the alternative routes.

Environmental Impacts: The proposed action would have minor environmental impacts. The operation of construction vehicles would result in temporary elevation of noise levels and produce heat, exhaust fumes, and dust. Dust would be controlled to the extent possible by spraying the ground with water. A radiation survey of the proposed construction identified no radioactive

material that could be released by the road construction, and a health physics technician would monitor for radioactive contamination during surface clearing operations.

Construction activities would not affect cultural resources. A cultural resources survey found a total of three sites near the proposed right-of-way, but none was eligible for inclusion in the National Register of Historic Places. If archaeological resources are discovered during construction, construction would be halted until the resources are evaluated and appropriate consultations are completed. A biological survey concluded that the construction activities would not adversely affect endangered species. To avoid effects on nesting birds, construction activities would begin after the end of nesting season. The construction activities would disturb existing shrub-steppe habitat which provides habitat for many species on the Hanford Site, including the loggerhead shrike (a candidate for listing as an endangered species under the Endangered Species Act of 1973). DOE recognizes that shrub-steppe habitat is disappearing in other parts of eastern Washington, and is working with the State and Indian tribes to formulate a habitat enhancement plan acceptable to all parties. The plan would be designed to revegetate or otherwise enhance the shrub-steppe habitat on other portions of the Hanford Site to compensate for habitat lost as a result of this and other future DOE actions at Hanford.

No hazardous or radioactive wastes are expected to be generated by construction activities. Vegetation removed from the right-of-way would be burned if weather conditions permit. All other wastes would be disposed of in

the Hanford Central Waste Landfill or other appropriately permitted disposal sites.

Routine construction hazards would exist during road construction. Construction operations would conform with safety codes and regulations intended to ensure a safe working environment. Increased traffic on SR-240 due to construction would not substantially increase the risk of accidents on that road. Flagmen would be stationed at major road junctions during construction to warn motorists of construction hazards.

Use of the access road would have the beneficial impact of reducing the probability of traffic accidents on Route 4S.

Determination: The proposed construction of an access road from Beloit Avenue in the 200 West Area to State Route 240 does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the NEPA. This finding is based on information and analyses in the EA. Therefore, an environmental impact statement is not required for this proposed action.

Issued at Washington, D.C. this 10th day of March, 1994.

for Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

DATE
FILMED
8/24/94

END