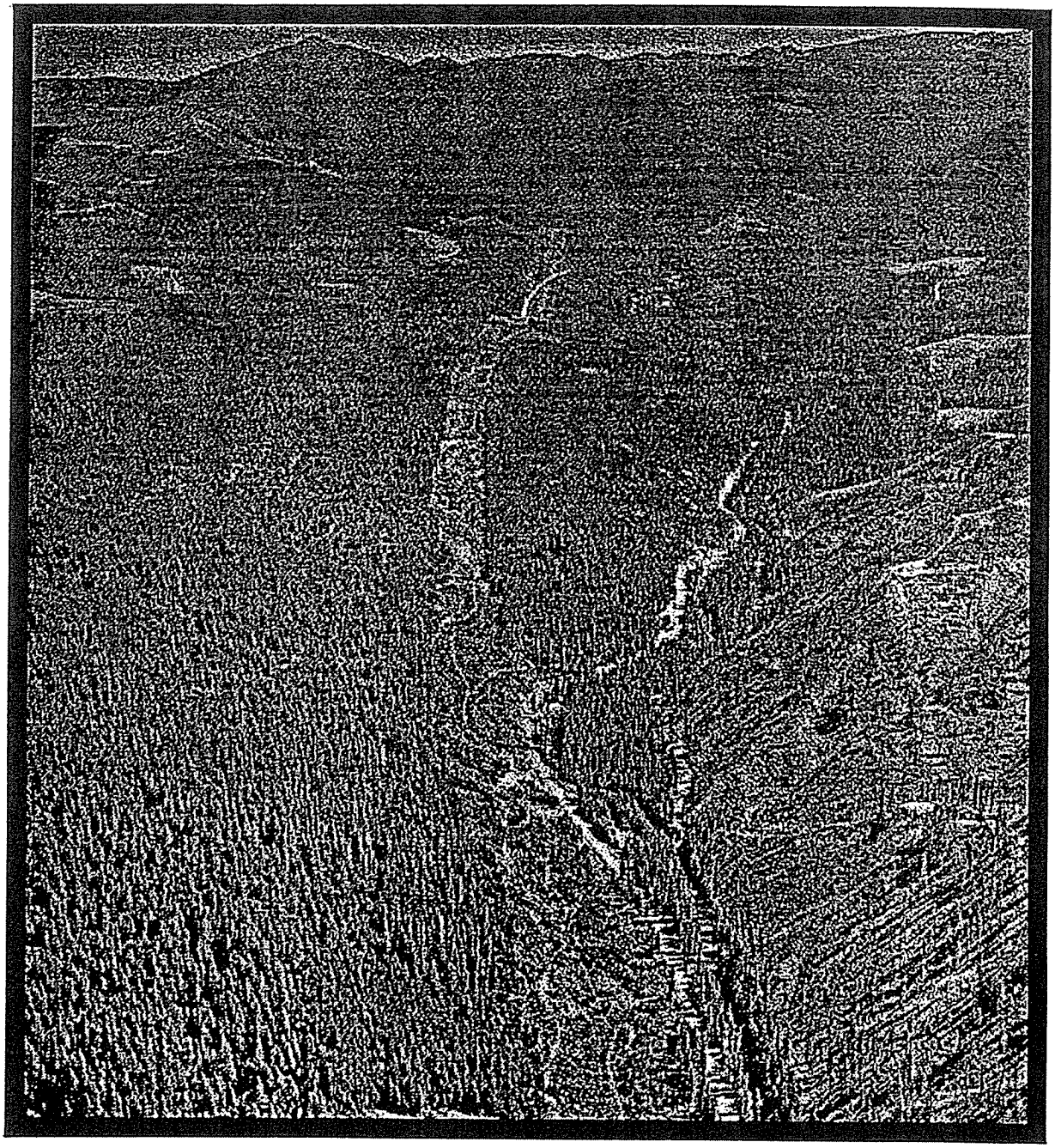
IVC. Facilities



Powerline Right-of-way in the Breitenbush. Eagle Rock Fire, burned 1967. (1972 photo)

C. Facilities

1. Characterization

The transportation network, including roads, trails, accompanying drainage structures and bridges make up a large portion of the facilities in the Breitenbush watershed. Other components include structures such as summer homes, buildings associated with the Breitenbush Community, snow shelters, fire lookouts, fire guard stations and other improvements such as campgrounds, water systems, power lines, signs and gates, etc.

2. What values are associated with facilities?

a) Commercial, administrative, private and public access to National Forest lands is valued for the opportunities it provides for recreation, commercial, and administrative operations, etc.

b) Recreation facilities are valued for the comfort, safety and shelter they provide, as well as, for aesthetic and historic reasons.

3. What are the highest priority issues or resource concerns associated with facilities?

a) Conflicting management objectives and/or resource impacts resulting from construction, maintenance, protection and use of various facilities

- Virtually all recreation facilities and many roads and bridges, etc. in the watershed are located in riparian reserves. Managing these facilities is often in conflict with Aquatic Conservation Strategy objectives and/or late-successional reserve (LSR) objectives.

- Many facilities were damaged in the Flood of 1996, repair of these facilities may be in conflict with other resource objectives.

b) The ability to adequately maintain facilities and provide for public safety, given shrinking budgets.

c) Public access to public lands in light of reduced road maintenance budgets, flood damage, etc.

4. What are the management direction/activities, human uses or natural processes that affect facilities?

a) Current condition

i) What is the existing condition and trends of the facilities within the watershed?

Transportation facilities: Forest Road 46 provides the primary access between the Willamette and Mt. Hood National Forests. It also bisects the watershed and parallels the Breitenbush River for the majority of its 16.9 miles. The Breitenbush Road (46) is a double lane paved Forest Highway and is the only road on the district with a Maintenance Level 5. This road has been designated a National Forest Scenic Byway and is proposed for Oregon State tour route designation.

The remaining system of collector and local roads provides access to federal and private land for public use and resource management and protection. The Forest Service maintains 249 miles of road that accesses 202 acres of private land and over 69,000 acres of public land.

Following are the total miles of road by category. Miles are based on the GIS transportation data base.

Figure IV-7. **Total miles of road by category.**

Road Owner	Miles of Roads	Part of Road System or Not	Road Category
Forest Service	16.9	Yes	Arterial Roads
Forest Service	55.5	Yes	Collector Roads
Forest Service	157.0	Yes	Local Roads
Forest Service	18.8	No	Temporary roads not obliterated, power line access roads and roads to dispersed recreation sites
Private	1.4	N/A	N/A
Total	249		

There are probably additional miles of private road and nonsystem Forest Service roads in the analysis area, but they have not been well inventoried or tracked. Road miles included in this analysis area are those miles that are on the GIS system, TRAN layer. This information has not been field verified.

Road Management: Management of the transportation system includes road resource protection, as well as, providing a variety of recreational experiences and management opportunities. Road Management Objectives need to determine purpose and use of each road, regulate traffic use during wet weather to prevent damage to riparian resources and the road infrastructure, and establish maintenance levels that reflect our ability to schedule and perform the maintenance activities. Restriction of access and travel should be the minimum to achieve management objectives consistent with legal requirements, user safety, environmental considerations and economics.

The Breitenbush road system has provided a broad range of access to all areas within the watershed. The flood on 1996 has changed this scenario to some extent. At the present time assessments are still being made. The full extent of damage will not become apparent until surveys can be completed on the entire system. The map on the following page *(figure IV-8)* illustrates areas of the watershed where damage has closed roads. Three major areas have been closed to vehicular access: Deadhorse Creek, Short Mountain and Scorpion Creek. There are numerous sites closed due to flood damage but the areas that aren't accessible are small or there are alternative routes into the area. Many roads that were traversable by passenger cars last year are now only accessible to high clearance vehicles. In reality this last winters storm event just accelerated the trend of roads closing due to lack of maintenance and use.

Below is a generalized description of user needs and access condition.

- ***Recreation***: The road system provides for a broad range of recreational opportunities in a variety of settings.

  There is access to all the developed campsites and trail heads, though there is some localized damage to the roads that calls for extra caution by travelers. Access to Breitenbush Lake on Warm Springs Indian Reservation land is via the 4220 road. The road provides a loop access route into the Ollalie Scenic Area. The section of the road to the north of the lake is not being maintained and will eventually become a non-loop road.

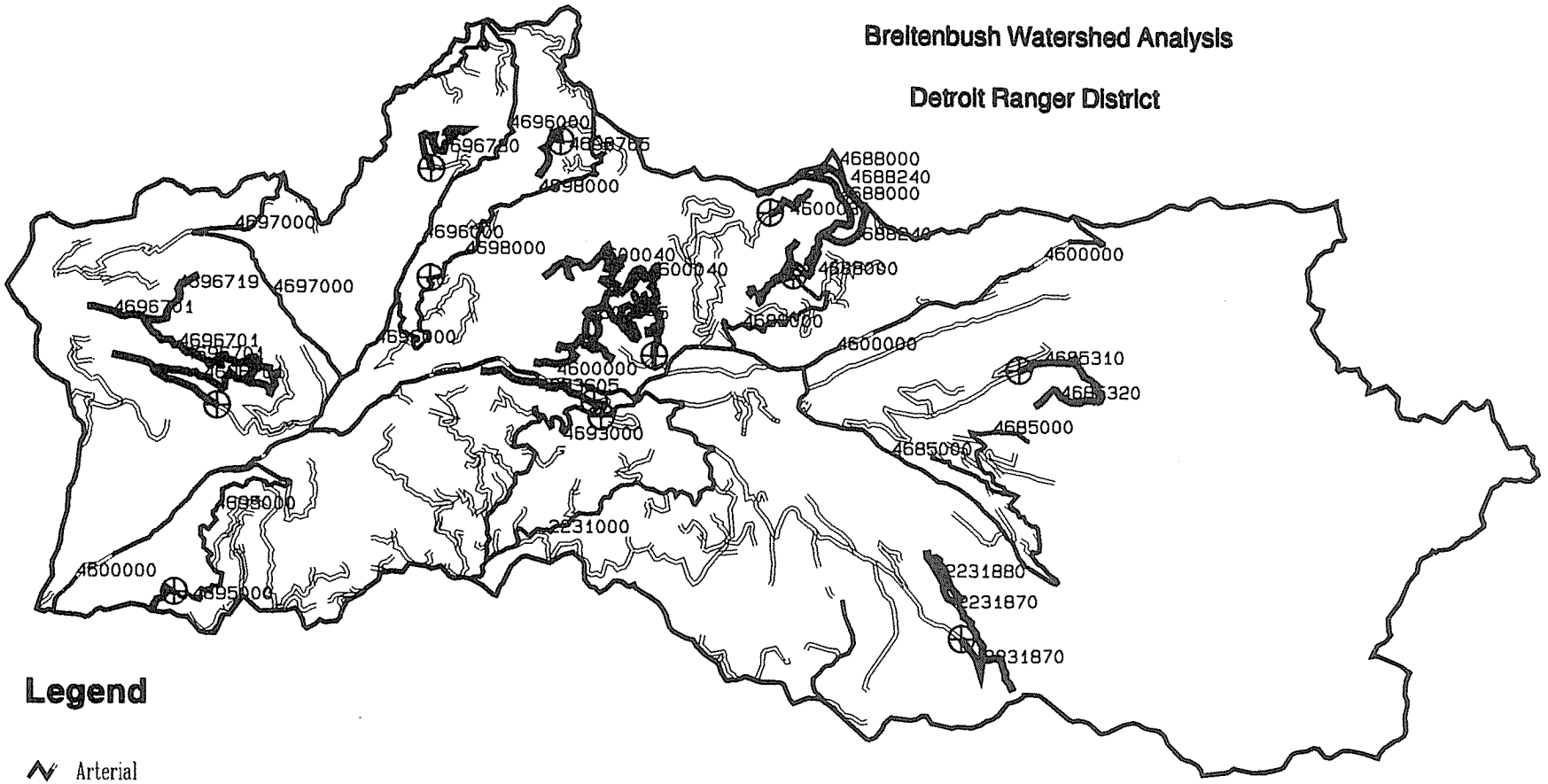
  Dispersed recreational opportunities have been reduced in areas behind roads closed by flood damage, as well as, gates that exclude motorized travel due to wildlife or various other resource concerns.

  Flood-related road closures have created friction between the Forest Service and some of the public. There has been a high vandalism rate to the closure devises and signs. Maintenance and repairs to these closures have been difficult to keep up with. Public safety is a major concern due to the difficulty of keeping the public out of unsafe situations.

Flood Impacted Roads

Breitenbush Watershed Analysis

Detroit Ranger District



Legend

- Arterial
- Collector
- Local
- Closed
- Washed Out Road Site

Scale 1:140000

06/13/96

ATTENTION
Features represented on this map may not be in an accurate geographic location. The Forest Service makes no expressed or implied warranty of this data nor of the appropriateness for any user's purposes. The Forest Service reserves the right to correct, update, modify, or replace the geospatial information on which this map is based without notification

For more information, contact Detroit Ranger District GIS

Increasingly roads will be closed for a variety of reasons or will naturally close themselves due to the absence of maintenance. With declining road maintenance budgets, and concerns related to watershed quality and wildlife habitat effectiveness, road decommissioning and obliteration will be common in the future. As roads are closed, more pressure may be placed on roaded areas outside of closure, and former roaded dispersed areas will probably not receive the use that previously existed. "Established" users of an area may be displaced to other areas that remain accessible. Roads with the highest use will result with the most significant impact on users. The public perception of access is that they have grown accustomed to the current access and expect the same level of service.

In contrast these closed roads have increased opportunities to bike and hike free from interference with motorized vehicles.

Breitenbush Road (46), did sustain damage in the 96 storm event and was closed for several months. In May of 96 the road was opened for public use. Repairs will continue through the next few years. The route is presently closed to Highway 224 at Ripplebrook. This has affected use patterns in the Breitenbush. The drive from Detroit to Estacada, via this route, is a popular scenic drive. Estacada has experienced reduced tourism dollars because of the road closure. The estimated date to reopen this road is in 1998.

The Olallie Lakes Scenic Area attracts seasonal recreation use and is accessed by Forest Road 46 to Road 4220. Road 4220 serves as the only road access for recreation, administration, and emergency fire evacuation. As recreation use of the area has increased, so has human-caused fire occurrence. This coupled with areas of insect killed trees has increased the risk of wildfire in the area. With the high fire risk and limited access, public safety is a concern.

- ***Fire:*** Access for motor patrol needs for fire detection was hampered in this watershed area.

The primary site used for detection during lightening storms was lost with the road failure on Leone Creek. Access time was increased from 15 minutes to 40 minutes. A secondary site up Short Creek is also inaccessible at this time. A lookout site becomes ineffective when access time is beyond 30 minutes from the Breitenbush guard station. Establishment of new detection sites is in progress.

Access into Fox Ridge (4698) and the Slide Creek, Hoover Ridge (4695) area is limited to small high clearance vehicles. The larger engines and water tenders will be unable to negotiate narrow road sections and slumped road prisms created by the 1996 storm event.

Response time for initial attack situations will increase until road closures and damage from the storm can be repaired.

Most pump chance access roads are still open.

A recent fire created the need to fix road 4696 701.

- ***Commercial Operations and Permittees***: The 96 flood has reduced access opportunities to commercial operations; timber harvest activities, Special Forest Product harvest, mineral uses and personal use permits.

  Timber Sale contracts have provided an opportunity to repair flood damage to haul routes that had been affected. Roads 46 and 4685, both highly used for recreational purposes, are being repaired through this avenue. If repairs went through normal ERFO channels these routes could have been closed for up to three years before work could be completed.

- ***Ownership***: Access to private land is adequate at this time. With the decreased ability to maintain roads there is a need to renegotiate cooperative agreements to help meet the needs and management objectives of all parties.

- ***Administrative***: Access opportunities to meet resource management needs and management allocation requirements were reduced by the 96 flood. Preparation for commodities harvest; silvicultural and fuels treatments of managed stands; wildlife species and stream condition surveys; habitat enhancement, mitigation and restoration projects are just examples of management activities that are impacted. There will be an increase in cost in performing almost all aspects of resource management activities. This was a trend already being felt. The flood has accelerated the impacts.

- ***Power line Access***: Bonneville Power Administration (BPA) and Portland General Electric (PGE) constructed a system of spur roads to access the power line and towers for construction and maintenance activities. It is unknown exactly how many miles of roads this entails, as inventory of location, condition and length of these roads has not been done. Management of the power lines is done through Memorandums of Understandings between these agencies and the Forest Service. These Memorandums were last updated in 1982.

  According to the agreements, BPA and PGE are responsible for all maintenance of the transmission line access roads which are not part of the Forest Service system. Most of these power line access road have not been incorporated to the Forest Development Road System. Maintenance by BPA

and PGE should include water-barring of roads and seeding and fertilizing of cut banks or fills.

As per the agreement, Forest Service activities may not close or hamper access to transmission lines or towers for maintenance or emergency use.

Some of the access roads were damaged in the 1996 flood.

- ***Road densities/Closures***: Current road density for the analysis area is 2.30 mi/sq mi with wilderness acres included. Road density, with wilderness acres removed, increase to 2.72 mi/sq mi. Road densities by subwatershed are shown in *figure IV-8*.

Figure IV-8. **Road Densities in Miles per Square Mile by Subwatersheds**

Subwatershed	Road Density w/o Wilderness	Road Density w/ Wilderness	Road Density w/o Wilderness w/Closures	Road Density w/ Wilderness w/ Closures
92 1 Lower Breitenbush	3.38	N/A	3.17	N/A
92 2 Middle Breitenbush	3.64	N/A	3.51	N/A
92 3 Devils Creek	2.70	2.46	2.59	2.36
92 4 S. Fk. Breitenbush	2.33	1.09	N/A	N/A
92 5 N. Fk. Breitenbush	1.36	1.09	1.32	1.05
92 6 Humbug Creek	2.77	N/A	2.07	N/A

- Road closures have not been widely implemented in this area. Closure effect on road densities are also shown in *figure IV-8*. Data does not reflect the storm damage closures, most of which are temporary in nature.

- The closure system consists of combination of closure devices including locking gates, guardrail barricades and aluminum non-locking pole closures.

- Motorized travel in most closure areas is restricted for the public, but administrative travel is not.

Figure IV-9. Surface Types and Functional Classes (in miles) for Forest Service system roads

Subwatershed	Asphalt Surface	Aggregate Surface	Improved Surface#	Native Surface	Function Class Arterial	Function Class Collector	Function Class Local
Lower Breitenbush 92 1	4.9	33.8	2.3	1.0	4.5	6.1	31.4
Middle Breitenbush 92 2	6.3	48.3	15.4	4.3	6.2	15.0	53.0
Devils Creek 92 3	0.0	20.0	1.0	0.2	0.0	1.6	19.6
South Fork Breitenbush 92 4	0.0	23.4	0.1	0.2	0.0	9.3	14.3
North Fork Breitenbush 92 5	5.9	14.3	0.5	5.8	5.7	4.4	16.4
Humbug Creek 92 6	0.3	38.4	1.9	0.9	0.2	19.0	22.2

Improved denotes a surface type of Pit-run or Grid-rolled material other than crushed aggregate. Road could have only spot rock or be surfaced with this material full length.

Figure IV-10. Road Maintenance Levels (in miles) for Forest Service system roads

Subwatershed	Maintenance Level 1	Maintenance Level 2	Maintenance Level 3	Maintenance Level 4	Maintenance Level 5
Lower Breitenbush 92 1	7.8	29.9	0.8	0.0	4.5
Middle Breitenbush 92 2	23.7	36.5	7.9	0.0	6.2
Devils Creek 92 3	9.4	10.9	1.0	0.0	0.0
South Fork Breitenbush 92 4	6.0	6.4	11.2	0.0	0.0
North Fork Breitenbush 92 5	4.7	15.5	0.5	0.0	5.7
Humbug Creek 92 6	12.1	11.9	17.2	0.0	0.2

- Vandalism of closure devices is high and maintenance inadequate.

- Enforcement of closures, due to the condition of closure devices, lack of adequate signing and the tendency for closures to be left open for long periods of time, is difficult.

- Roads behind closures have not been put in a storage condition to reduce maintenance needs.

- ***Road Maintenance Funding***: Declining maintenance dollars are resulting in reduced access for all users in many areas of the watershed. Few of the local system roads receive annual maintenance. Overall, less surface, drainage and roadside maintenance is being done. At present roads are closing themselves through cut or fill slope failures, stream crossing failure and brush encroachment.

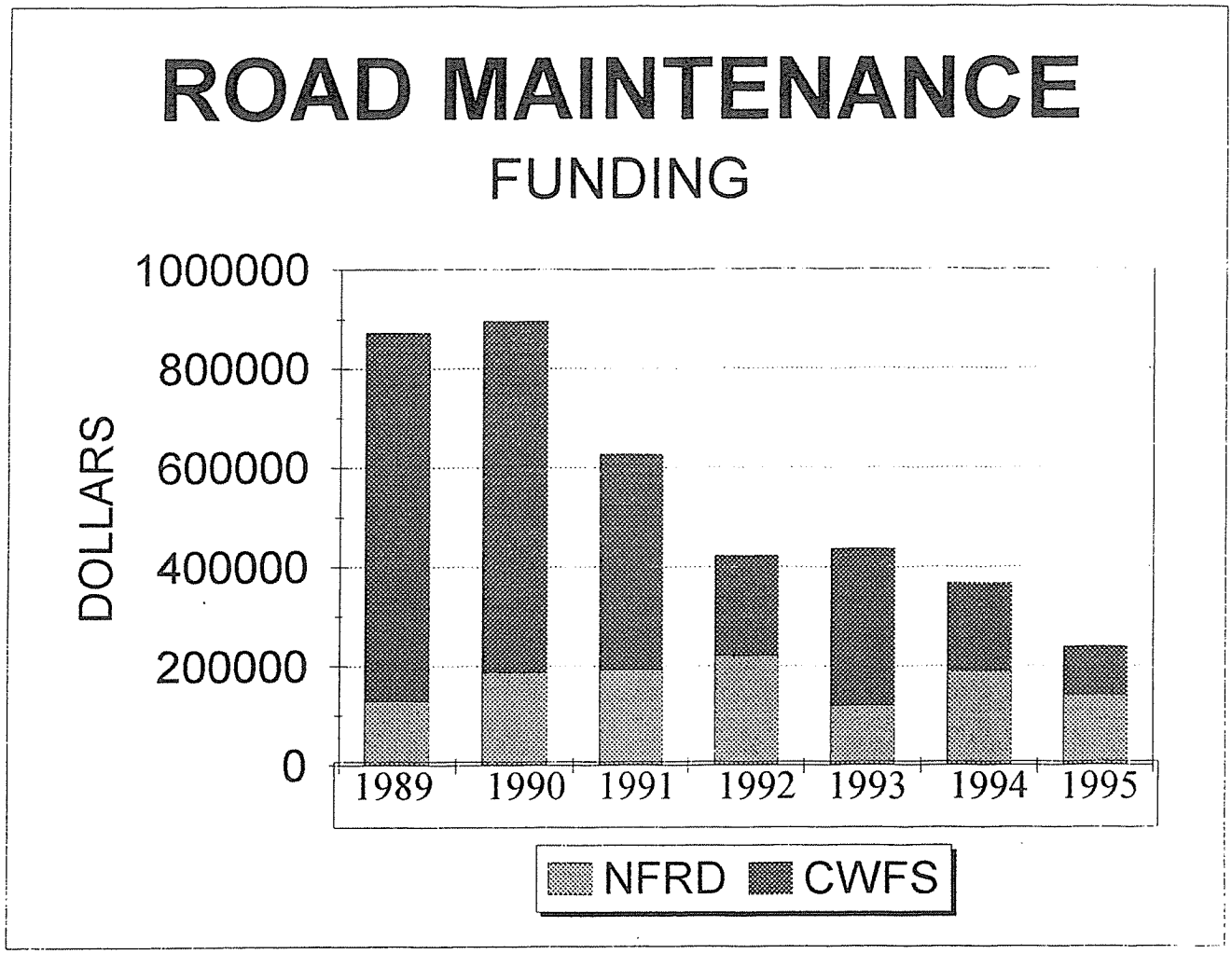
  These "closures through neglect" do not provide protection against resource damage or protection of the large capital investment made when these roads were constructed.

  Over time, only those roads where maintenance is performed will remain open.

  Other roads may remain open dependent on:
  - level of use that will discourage brush encroachment
  - vegetative type not prone brush encroachment
  - soil stability or back and fill slope design that are not prone to sloughing of material that can block drainage or road prisms
  - the condition and functionality of the drainage system.

Trails: The Forest Service maintains 36 miles of recreational trails, including two of national and regional significance: the South Fork Breitenbush Gorge National Recreation Trail and Pacific Crest National Scenic Trail. Over the years, trails have been relocated and improved for resource protection, erosion control, safety and aesthetics. In addition, the proposed Urban Link Trail which will "link" Portland to the Pacific Crest National Scenic Trail at the Olallie Lake Scenic Area, will connect this watershed with adjacent watersheds. Also, the Breitenbush Community has constructed and uses a couple of informal trails on Forest Service land that they maintain.

Campgrounds/Summer homes: Campgrounds and summer homes occupy 85 acres and are located primarily within riparian reserves. The area in riparian reserves dedicated to developed recreation facilities and use is 54 acres. Currently, there are 79 sites available at the five Breitenbush campgrounds. Facilities at Breitenbush, Humbug and Cleator Bend Campgrounds include picnic tables, fire rings, water systems, sanitary facilities (vault toilets, and garbage collection), tent sites, and adequate parking including some room for RV's. Upper Arm Campground provides picnic tables, rock fire rings, vault toilets and garbage service but no water. The Breitenbush Lake Campground is located on the Warm Springs Indian Reservation



NFRD: Congressional Allocations; CWFS: Timber Generated Dollars

and is currently administered by the Mt. Hood National Forest. Warm Springs Reservation funds the maintenance for this campground. This rustic campground contains 20 camp units with picnic tables and fire rings, a historic 3-sided picnic shelter and vault toilets. The is no potable water or garbage services at this campground. Breitenbush, Humbug and Cleator Bend are managed by a concessionaire program which provides campground operation, maintenance and visitor services. The Flood of '96 damaged several campsites in Cleator Bend and Breitenbush.

Developed sites are vulnerable to vandalism, and receive normal "wear and tear" through use and age, and incidental damage from weather events. The condition of developed recreation facilities is assessed annually and documented in the District's Infrastructure Database. This assessment documents the specific conditions of all the facilities within a developed site area and identifies and schedules needed maintenance or replacement. Many of the pit toilets are old and in need of replacement. A complete list of the facility condition assessment of individual sites in the Breitenbush can be obtained from the RRIS files at the Detroit Ranger District.

In addition to natural causes, hazard trees are created as a result of recreational related damage. Public safety and liability is a concern within all developed sites including campgrounds, administrative sites, summer homes, trail heads, parking areas, snow shelter and minimally developed dispersed sites. These areas receive highest priority for falling hazards to protect visitors.

There are 72 recreation residences located on the Breitenbush-Devils tract which provide seasonal occupancy within this area. Some of the summer homes have been affected by changing stream channels during flood events. The Flood of '96 has caused the Devil's Creek channel to divert. During high water events, a new channel surrounds and affects four summer homes. Potential for channel shifts threatens several homes on the Breitenbush River.

In addition, the Breitenbush/Cascade Viewpoint formerly consisted of a trail and a platform overlook. The sign and structure were removed in 1990, due to safety hazards. The area had not been maintained, and was beyond repair. A large turnout and small parking area still exists. The site has been taken off visitor maps, but is still heavily used by the public.

Trends: Traditional appropriated funding for campground operation and maintenance is declining. Budget reductions may inhibit maintaining facilities to the levels of use they receive. The Forest Service is looking to the private sector to manage public campgrounds in order to keep campgrounds open. Campground, trail and other facility construction and reconstruction have been funded through the Capitol Investment Program which too is facing cutbacks. Recreation managers will need to look at alternative ways of funding recreation development in the future. Potentially, user fees may be implemented on National Forests in the future as a means to support recreation use on federal forests.

Breitenbush Community: The community has a variety of facilities and structures

such as cabins, lodges, geothermal heating system, hydroelectric power, and water system. Their hydroelectric power and water system supported by the Breitenbush River were severely damaged by the Flood of '96.

Breitenbush Guard Station: This facility is still used in the summer months by fire personnel who patrol the Breitenbush drainage.

Signs/gates: There are many regulatory, warning and informational signs located throughout the watershed. In addition, gates and barricades control access to selected portions of the transportation system. Frequently, vandalism of gates on closed roads may be found throughout the watershed, allowing access to areas that require resource protection. Administration of road closures have been difficult and costly. Many signs and closure devices are destroyed or removed.

Power lines: Bonneville Power Administration and Portland General Electric have power lines that bisect the length of the watershed. Their concern is maintaining the corridor free of trees that interfere with the maintenance of the power line. Due to the steep terrain of this watershed, off road vehicle use occurs primarily under the power lines. Firearm target shooters have severed and damaged power lines.

Gold Butte Lookout: This old fire lookout is only rarely used as a lookout anymore. It is infrequently manned during times of extreme fire danger. The lookout is open for public use, and is the only lookout on the District and one of the few in the Region, open for overnight visits.

McCoy Snow Shelter: This shelter was constructed in 1988 for the use of winter sports enthusiasts.

b) Reference condition

i) What were the major historical facilities in the watershed?

Trails: The high cascades were traversed by a network of trails made by Indians, pioneers and prospectors.

In 1874 a trail from Idanha to Breitenbush Hot Springs was completed.

In the late 1870's or early 1880's there was a trail following the Breitenbush River from it's confluence with French Creek to the hot springs.

1911 Santiam National Forest maps show a trail leading form the railroad grade at Detroit up the Breitenbush River drainage, continuing to the east side of the Cascade Mountains near the Warm Springs Reservation. This same map also depicts a trail leading from Boulder Creek north the Breitenbush Hot Springs.

In 1914, a trail up the South Fork of the Breitenbush River was constructed for a fire emergency and used by a pack train.

In the early 1900's, Oregon Skyline Trail became a well known alpine trail route threading the high passes of the Oregon Cascades from Mt. Hood to Crater Lake and traversed the entire length of the Mt. Jefferson Primitive area.

Other trails followed but most of the Forest Service trails were originally built for purposes other than recreation. They were constructed for administrative purposes that required direct access. Little attempt was made to design trails with scenic vistas and gentle grades. Often trails climbed excessive grades and had poor drainage and hazardous stream crossings for horses and hikers.

Relocation of Skyline Trail occurred over a period of years in the 1960's and into the 1970's. The trail was relocated to provide a more direct north/south route. It was relocated to areas high on the crest to provide scenic overlooks and away from heavily traveled corridors. The National Trails System Act was passed in 1968, which provided "instant" designation of the Skyline Trail that was then renamed the Pacific Crest National Scenic Trail. The South Breitenbush Gorge National Recreation Trail was born.

Railroad: In 1892 the railroad built into Idanha provided main access to the canyon area and was used as major access from the west instead of roads.

During the period between 1894 and 1907, Hammond Lumber Company constructed a railroad grade and tracks up the Breitenbush drainage. The railroad grade is depicted on several maps up the French Creek; about six miles along the Breitenbush River Canyon from Detroit. However, evidence of the grade extending further up the drainage can be viewed in the field up to Canyon Creek.

Road network: Development of this transportation system has occurred primarily in the last 50 years. Prior to the 1940's most of the timber land was accessible through a large trail system. Below is a synopsis of the major transportation events of the last 100 years that contributed to the development of the current Breitenbush transportation system.

Highway 22, although not in the watershed, made possible the development of access into the Breitenbush. The following is a chronology of highway 22 development:

- 1913 road in current Highway 22 location ended at Niagra
- 1926 a road was constructed from Niagra to Detroit. Road was primitive and in places, very difficult to negotiate. Rail still major access mode.
- 1935 approximate time highway built at present location from Detroit east thru to the Santiam Jct. Access from the east prior to this time was only by trail.
- 1948 the highway was built on it's present location from Gates to Detroit.

This event really opened up the upper canyon country as auto and truck access had been very difficult up until then. When the highway was finished the railroad was dismantled at the site of the dam.

***Development of access in the Breitenbush** watershed*

- 1920's first commercial development to hot springs, road built, trails only beyond.
- 1931 road into Elk Lake.
- 1935-37 road from hot springs to Breitenbush Lake. Also road to Elk Lake ties into the mines on the Little North Fork.
- 1949 map shows the Breitenbush road going from Breitenbush Lake over to Ollalie and on over to Bear Springs and the Timothy Lakes area. This is the present day 4220 road.
- 1964 map, Breitenbush road over to the Clackamas at present location. Road up Skunk Creek and up the South Fork of the Breitenbush to the first Switchback. Also road connects up over Boulder Ridge to Idanha from Cleator Bend.

Construction methods up until the mid seventies generally consisted of the side casting of fill material with no compaction requirements. Drainage structures were built to meet the minimum drainage requirements. Long term transportation planning and integrated resource analysis were not used. Roads were often built landing to landing with little thought to long term needs. In 1973 new standards were implemented to improve the quality of Forest Service road construction to provide for a higher level of resource protection. By this time however, most of our major transportation routes had been constructed using the construction practices of the day.

Information sources: Maps from 1881, 1892, 1893, 1896, 1913, 1931, 1936, 1948, 1959, 1964, 1974, 1980.

Road Maintenance: Past emphasis on timber management has resulted in a large road system to gain access to timber and other Forest commodities. Timber sale revenue paid for the majority of road construction, reconstruction and maintenance. As timber harvest activities have decreased so have the traffic generated funds for maintenance and purchaser performed maintenance. In conjunction with timber revenue decreases, appropriated dollars from Congress are erratic.

Breitenbush Guard Station: was constructed in 1935 as part of the Civilian Conservation Corp program. This building is listed on the National Register of Historic Places.

Gold Butte Lookout: This fire lookout was built in 1934 by the Civilian

Conservation Corps. Eight years later a cabin was staffed year round as part of the AWS during World War II. The cabin no longer exists.

The lookout site was abandoned as a fixed detection point for fires in the early 1960's and plans were made to remove all the equipment and burn the structure. A hiking group prevented its demise and organized the preservation of the lookout. The Pacific Crest National Scenic Trail Fund raised money and provided volunteer labor to rehabilitate the structure. The lookout is visited year round by numerous hikers leaving their signatures and comments in the register located inside the lookout. The comments over the years suggests how special the lookout is to the growing number of visitors.

Other facilities: Facilities such as campgrounds, summer homes, Breitenbush resort and trails were developed in areas where prehistoric and historic uses occurred. Many trails, facilities and supporting infrastructure were constructed through the Civilian Conservation Corp (CCC) program. These facilities include Breitenbush, Breitenbush Lake and Humbug Campgrounds, Gold Butte Lookout and the Breitenbush Guard Station. Over the years, these facilities have been improved and rehabilitated. Breitenbush and Humbug Campgrounds were upgraded and expanded in the early 1960's to meet the demand. In addition, Cleator Bend was built in the early 1960's as a picnic ground, and was converted and upgraded to a campground in 1974. Other improvements include developing accessible facilities, providing longer spurs for RV campers and developing new water systems. Summer homes on the Breitenbush/Devil's tract were built as early as the 1930's but most were constructed in the 1950's and 1960's.

Since most recreational developments occur within the flood plains, many structures and facilities were affected or destroyed by the Flood of 1964. Several summer homes were destroyed and campgrounds were damaged. The Villa Maria Chapel organization site was lost to the Breitenbush River later.

c) *Comparison of current and reference condition*

Road Management: Management of the road system is changing due to current and projected federal road maintenance budget declines and to the multiple resource objective needs described in the amended Forest Plan.

- ***Economics:*** Decreases in annual maintenance budgets are down 70% from the late 1980's. A direct correlation brings the miles of road that can be maintained in this watershed from 249 miles to an estimated 75 miles. With reductions in the numbers of maintenance workers, resulting in a less efficient operation, 75 miles may be a high estimate.

  This 75 miles corresponds very closely to the system of arterial and collector roads in the watershed . Few of the remaining local roads receive annual maintenance. As a result roads are closing themselves through cut or fill slope failures, stream crossing failures and brush encroachment.

Some of the damage that occurred in the 1996 storm event can be linked to the lack adequate maintenance.

- ***Forest Plan as amended by the ROD***: The Willamette National Forest Land Resource Management Plan established a goal for "the transportation system to provide visually pleasing and efficient access for the movement of people and material involved in the use, protection and management of forest lands". Two ROD designations introduce Standards and Guidelines substantially different from the earlier Forest Plan. These are Late-Successional Reserves and Riparian Reserves.

  Late-Successional Reserves: 15,719 acres, 23% of this watershed lie in this designation. Road construction in Late-Successional Reserves is not recommended unless potential benefits exceed the cost to habitat impairment. Roads will be kept to a minimum and be routed through non-late-successional habitat where possible. Alternative access methods should be considered to provide access for activities in reserves.

  Road maintenance may include felling hazard trees along rights-of-way. Leaving material on site should be considered if available coarse woody debris is inadequate. Topping trees should be considered as an alternative to felling.

  With the exclusion of most timber harvest activities within this allocation, it may be hard to rationalize maintaining a large road system that was built to access land for timber harvest.

  Limiting access will make enhancement and restoration projects more difficult and expensive to implement.

  Risk to Late-Succession old growth habitat from catastrophic fire events will increase as access to large blocks of land is decreased.

  Riparian Reserves: Standards and guidelines prohibit programmed timber harvests, and management of roads, grazing, mining and recreation to achieve objectives of Aquatic Conservation Strategy. See revised Forest Plan standards and guidelines for specific road management information.

  Current standards in road design and construction practices and existing Road Management systems and programs go a long way in meeting the Aquatic Conservation Strategy objectives. Decreases in work force make it difficult to maintain existing systems and programs.

  There is as estimated 58 miles of road located in riparian reserves. In addition, roads cross Class 1,2 and 3 streams approximately 182 times in this watershed.

  Inventory and risk analysis to riparian conditions in a 100 year storm event have not been done. Analysis processes have been established but shortages c

personnel available to do the work has delayed its completion. Probabilities that upgrading of stream crossings to accommodate the 100 year flood would occur are slim due to limited dollars and the high cost of such construction. Available restoration dollars should be spent on higher return projects such as stream restoration and road decommissioning and storage.

Roads will be storm proofed, decommissioned or obliterated as the localized sites are identified and analyzed.

***Other Facilities*:**

- Facility condition is affected by age, natural elements, and human use; including "wear and tear" and vandalism.
- Declining maintenance funding for publicly owned facilities are resulting in the degradation of facilities.
- Flood events and erosional processes have a severe impacts on facilities such as campgrounds, water systems, structures including summer homes and footbridges, and trails.
- Demand for accessibility, regulations, resource protection, and change in user needs creates a need for upgrading and improvement of facilities
- Blowdown and snowdown damages or destroys facilities.