Oregon
Theodore R. Kulongoski, Governor

Department of Land Conservation and Development
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NOTICE OF ADOPTED AMENDMENT

06/05/2009

TO: Subscribers to Notice of Adopted Plan or Land Use Regulation Amendments

FROM: Plan Amendment Program Specialist

SUBJECT: Hood River County Plan Amendment
DLCD File Number 001-09

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A Copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures*

DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: Monday, May 18, 2009

This amendment was submitted to DLCD for review prior to adoption with less than the required 45-day notice. Pursuant to ORS 197.830(2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

*NOTE: THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAT IT WAS MAILED TO DLCD. AS A RESULT, YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.

Cc: Michael Benedict, Hood River County
Doug White, DLCD Community Services Specialist
Gary Fish, DLCD Regional Representative
Matt Crall, DLCD Transportation Planner

<paa> YA

FORM 2

DEPT OF
MAY 29 2009
LAND CONSERVATION
AND DEVELOPMENT

D L C D NOTICE OF ADOPTION

This form must be mailed to DLCD within 5 working days after the final decision per ORS 197.610, OAR Chapter 660 – Division 18

(see reverse side for submitted requirements)

Jurisdiction: Hood River County

Local File No: #08-0116 (If no number, use None)

Date of Adoption: May 27, 2009 **(Must be filled in)**

Date Mailed: May 28, 2009 **(Date Mailed or sent to DLCD)**

Date the Notice of proposed Amendment was mailed to DLCD: February 13, 2009 **(Date mailed or sent to DLCD)**

_X__ **Comprehensive Plan Amendment**

____ **Comprehensive Plan Map Amendment**

_X__ **Land Use Regulation Amendment**

_X__ **Zoning Map Amendment**

_X__ **New Land Use Regulation**

____ **Other:** _____ **(Please specify Type of Action)**

Briefly summarize the proposal. Do not use technical terms. Do not write "See Attached."

Adoption of the 2009 Revised Airport Master Plan (AMP) for the Ken Jernstedt Airfield, including associated Comprehensive Plan and Zoning Ordinance amendments in support of the AMP and consistent with the Oregon Transportation and Airport Planning Rules. The main components of the plan, subject to FAA funding, include (1) a shift of the runway 550' east causing a partial vacation of Orchard Road; (2) relocating the existing taxiway to the north to meet required separation standards from the runway; and (3) relocating the Fixed Based Operations (FBO) from the south to the north side of the runway to avoid planes having to cross the runway for services. The main planning and zoning related changes include (1) adding a new Airport Noise Overlay Zone to implement mitigation standards for uses immediately adjacent to the runway; (2) adding a new Runway Protection Zone to restrict new residences and public gathering places at the ends of the runway; (3) allowing 35' structures in non-critical areas that penetrate the imaginary airspace with FAA notification; (4) and an automatic shift of the Airport Height Combining Zone 550' east with the proposed runway shift.

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "Same." If you did not give notice for the proposed amendment, write "N/A."

Same, except for some minor code tweaks for added clarification.

Plan Map Changed from: N/A **to** N/A

Zone Map Changed from: N/A **to** N/A

Location: N/A **Acres Involved:** N/A

Specified Change in Density: **Current:** N/A **Proposed:** N/A

Applicable Statewide Planning Goals: Goals 1, 2, 3, 9, 11, and 12

Was an Exception Adopted? **Yes:** ____ **No:** _X__

DLCD No.: 001-09(17430)[15537]

GRANT PRODUCT

Grant file # TA-R-09-1166

Did the Department of Land Conservation and Development receive a notice of Proposed Amendment FORTY FIVE (45) days prior to the first evidentiary hearing? **Yes: _X__** **No: ___**

If no, do the Statewide Planning Goals apply? **Yes: ____** **No: ___**

If no, did The Emergency Circumstances require immediate adoption? **Yes: ____** **No: ___**

Affected State or Federal Agencies, Local Governments or Special Districts: Hood River County, City of Hood River, Port of Hood River, Oregon Department of Aviation, and Federal Aviation Administration.

Local Contact: Michael Benedict, Planning Director or Eric Walker, Principal Planner **Phone Number:** (541) 387-6840

Address: Hood River County Planning & Building Services Department, 601 State Street

City: Hood River **Zip Code + 4:** 97031-2093

FILE COPY

HOOD RIVER COUNTY

ORDINANCE NO. 295

AN ORDINANCE ADOPTING (1) THE AIRPORT MASTER PLAN FOR THE KEN JERNSTEDT AIRFIELD; (2) AMENDMENTS TO THE COMPREHENSIVE PLAN, INCLUDING ADDING THE AIRPORT NOISE OVERLAY ZONE DESIGNATION TO THE COMPREHENSIVE PLAN MAP, ADDING AND AMENDING POLICIES TO THE COUNTY POLICY DOCUMENT UNDER GOAL 3 (AGRICULTURAL LANDS) AND GOAL 12 (TRANSPORTATION), AND ADDING LANGUAGE UNDER GOAL 12 OF THE BACKGROUND DOCUMENT AND TRANSPORTATION SYSTEM PLAN IN ORDER TO INCORPORATE THE AIRPORT MASTER PLAN, BY REFERENCE, INTO THE COUNTY COMPREHENSIVE PLAN; AND (3) AMENDMENTS TO THE COUNTY ZONING ORDINANCE, INCLUDING CODE CHANGES TO ARTICLE 7 (EXCLUSIVE FARM USE), ARTICLE 33 (AIRPORT DEVELOPMENT ZONE), AND ARTICLE 34 (AIRPORT HEIGHT COMBINING ZONE), AND ADOPTION OF A NEW ARTICLE 37 (AIRPORT NOISE OVERLAY ZONE).

The above amendments came before the Hood River County Board of Commissioners for a public hearing on May 18, 2009 at 6:00 p.m. in the County Board of Commissioners Conference Room (1st floor), 601 State Street, Hood River, Oregon.

Notice of the public hearing was mailed directly to approximately 1,600 property owners who would be directly or indirectly affected by the proposed amendments, as well as to affected agencies and others.

A quorum was present during the aforementioned public hearing. All of the commissioners participated in the hearing. Testimony provided to the Board of Commissioners during the public hearing included the recommendation and written record of the Planning Commission, dated April 22, 2009, and an oral staff summary. Testimony was also received from the general public, including local pilots, adjacent property owners, and others.

Based upon the record before it, and being fully advised in the premises, the Board of Commissioners adopted the Airport Master Plan for the Ken Jernstedt Airfield and associated findings of fact, conclusions of law, and recommended ordinance and comprehensive plan

amendments provided in the Planning Commission's record, dated April 22, 2009, incorporated herein by this reference as Exhibit "A."

Based upon the above information, **IT IS HEREBY ORDAINED** that the above-described legislative amendments to Hood River County Zoning Ordinance and Comprehensive Plan are hereby adopted.

DATED this 27th day of May, 2009.

HOOD RIVER BOARD OF COUNTY COMMISSIONERS

Ron Rivers, Chair

Approved as to Form:

Wilford K. Carey, County Counsel

HOOD RIVER COUNTY
PLANNING COMMISSION

RECOMMENDATION TO THE BOARD OF COUNTY COMMISSIONERS TO ADOPT THE AIRPORT MASTER PLAN FOR THE KEN JERNSTEDT AIRFIELD, INCLUDING ASSOCIATED COMPREHENSIVE PLAN AND ZONING ORDINANCE REVISIONS.

A public hearing was held before the Hood River County Planning Commission on April 22, 2009, at 7:00 p.m. in the County Board of Commissioners Conference Room (1st floor), 601 State Street, Hood River, Oregon, to consider the above-mentioned legislative review.

The public hearing followed two work sessions held before the Planning Commission on October 22, 2008 and March 25, 2009 during which the proposed comprehensive plan and zoning ordinance revisions were discussed. One public workshop was also held at the Airport on September 25, 2008.

Notice of the public hearing was mailed directly to approximately 1,600 property owners who would be be directly or indirectly affected by the proposed amendments, as well as to affected agencies and others. The mailed notice included a short description of the proposed amendments; date, time and location of the Planning Commission's public hearing; and an explanation of how to obtain additional information.

A quorum was present during the public hearing. All of the commissioners present participated in the hearing. The Chair of the Planning Commission presiding at the hearing then described the rules and procedure of the hearing. Testimony provided to the Planning Commission during the public hearing included an oral staff summary and written staff report and associated material. Oral and written testimony was also received from the general public and affected agencies.

Based upon the record before it, and being fully advised in the premises, the Planning Commission, after posing questions and full deliberations, adopted the findings of fact and conclusions of law set forth in the staff presentation and detailed in the record of the Planning Commission, dated April 22, 2009, attached hereto as Exhibit A, and by this reference incorporated herein.

Based upon the above information, it is **HEREBY RECOMMENDED** by the County Planning Commission that the County Board of Commissioners adopt the 2009 Airport Master Plan and associated

Comprehensive and Zoning Ordinance amendments, as detailed in attached Exhibit A.

DATED this _____ day of May, 2009.

HOOD RIVER COUNTY PLANNING COMMISSION

William Uhlman, Chair	Paul Cummings, Vice-Chair
Stan Benson, Commissioner	Patrick Moore, Commissioner
Carl Perron, Commissioner	Kathie Alley, Commissioner
Bob Schuppe, Commissioner	

Approved as to Form: _____
Wilford K. Carey, County Counsel

** **APPROVED ELECTRONICALLY ON MAY 7, 2009. ACTUAL SIGNATURES TO BE OBTAINED AT THE NEXT PLANNING COMMISSION MEETING.**

Ken Jernstedt Airfield Airport Master Plan 2009 Update

Planning Commission's Approved Staff Report

Staff Report

County Planning & Community Development Department

To: Hood River County Board of Commissioners

From: Hood River County Planning Commission

Date: April 22, 2009

RE: Comprehensive Plan Amendment and Ordinance Update #08-0116 (Port of Hood River Airport Master Plan Adoption)

I. Background:

A. Request: Comprehensive Plan Amendment (CPA) and Ordinance update to adopt the Airport Master Plan (AMP) Update, 2009. This update process is partially funded by a technical assistance grant from the Oregon Department of Land Conservation and Development. Specific proposed amendments include:

a. Comprehensive Plan Amendments:

1. Amend the Comprehensive Plan to describe the new "AN" Airport Noise Overlay Zone.
2. Goal 12 Background Document to include an explanation of the Airport Master Plan Adoption and appending the AMP to the Background Document by reference.
3. Amend the Transportation System Plan by briefly explaining the adoption of the AMP and appending the AMP to the TSP by reference.
4. Amendments to the Policy Document to reflect adoption of the AMP.

b. Zoning Ordinance Amendments:

1. Amend Article 4.10 Classification of Zones to include a new Airport Noise Overlay (AN) Zone.
2. Amend Article 34 Airport Height Combining (AH) Zone to include Runway Protection Zone RPZ provisions. (Note that an RPZ is a technical Oregon Department of Aviation (ODA) term describing the approach areas of all runways which are "no build" areas. The RPZ is NOT a proposed County Zone.)
3. Amend Article 33 Airport Development (AD) Zone as needed to implement OAR 660-013-100 and ORS 836.616(2)(a).

4. Amend Article 7 Exclusive Farm Use (EFU) Zone to add "airport runway alterations that do not accommodate a larger class of airplanes" as a conditional use.

c. Zoning Map Amendments
   1. Add a new Airport Noise (AN) Zone to show areas impacted by 65DNL to 70DNL (Day Night Sound Levels).
   2. Add a second map to the Airport Height Combining (AH) Zone (existing = Map "A") to reflect a 550' shift in the runway to the east, and make this new AH Zone Map "B" applicable only after the runway shift is constructed.
   3. Amend the existing AH Zone by adding the proposed RPZ area.

B. Airport Location: The subject property is known as the Ken Jernstedt Airfield and is located on Airport Road, just southeast of Highway 281/Tucker Road (Windmaster Corner) in unincorporated Hood River County. It is described as 2N 10E 11A Tax Lots #1000 and #1100, and 2N 10E 11B Tax Lots #2500, #2501, #2502, #2503 and #2600.

C. Airport Zoning: (AD) Airport Development and (EFU) Exclusive Farm Use.

D. Proposed Adjacent Zoning and Location: A new (AN) Airport Noise Overlay Zone is proposed on portions of airport properties and on parcels adjoining the airport southeast along Orchard Road described as 2N 10E 11A Tax Lots #1200, #1300, #1400, #1500, #1600, #1800, #1900, #2000, #2001, #2002 and #2100. These parcels are zoned (RR-1) Rural Residential (2-acre minimum).

E. Parcel Size: Airport: 132 acres; plus adjacent parcels impacted by overlay zones.

F. Access: The subject properties are accessed from Tucker Road/Highway 281, a State Highway and/or Orchard Road, a County Road.

G. Sewer: Presently on private septic system(s). The airport property is located in the Windmaster Health Hazard Overlay Zone, and as such is planned for public sewer availability in the near future.

H. Water: The subject parcel is located within the Crystal Springs Water District (domestic) and Farmers Irrigation District (irrigation).

I. Fire Protection: The subject parcel is located within the West Side Fire District.

J. Onsite Land Use (Subject Property): Airport/orchards; adjoining residential.

K. Proposed Land Use: Airport and adjoining residential to remain. A planned runway shift to the east onto airport-owned EFU (farm land) will require a future conditional use permit.

L. Summary of Comments:

All written comments received up to and including the April 22, 2009 Planning Commission hearing are included as part of the Planning Commission's record.

M. Exhibits:

1. Proposed Comprehensive Plan Amendments
2. Proposed Zoning Ordinance Amendments
3. East Side Elevation Memorandum
4. Future Orchard Road Vacation White Paper
5. County Road Manual: Road Vacation Process
6. Traffic Study, DKS Associates
7. FAA Plan Amendment Memorandum, Century West
8. 2009 Airport Master Plan Update

II. Statewide Planning Goals 1-14 and Hood River County Comprehensive Plan -- Findings of Fact and Conclusions of Law (Review criteria are noted in *italics*.)

A. *GOAL 1 – CITIZEN INVOLVEMENT*

Hood River County's acknowledged application process, which requires public hearings and notice to surrounding property owners and affected agencies, is consistent with Goal 1. Specifically, DLCD was notified of the proposed amendment per ORS 197.610; affected State and Local government and non-government agencies were notified per Article 60 of the Hood River County Zoning Ordinance; all property owners within or proposed to be within the Airport Height Combining Zone were notified per Article 60 of the Hood River County Zoning Ordinance; and notice of the both work sessions and the public hearing before the Planning Commission were published in the Hood River News. In addition, a public hearing before the Hood River County Board of Commissioners will be held before a final decision is made.

Finding: The public hearing process indicated above for the proposed Comprehensive Plan and Zoning Ordinance Amendments will fulfill Goal 1 requirements.

B. *GOAL 2 – LAND USE PLANNING*

Goal 2 requires a local government to establish a land use planning process and policy framework as a basis for all land use decisions. The subject property is located in unincorporated Hood River County, and the airport property is planned for Airport Use and Exclusive Farm Use (runway shift area east of Orchard Road). Adjacent residential property proposed for an Airport Noise Overlay (AN) Zone is designated for Rural Residential Use.

The Comprehensive Plan Amendment Findings are in Section III of this report. The procedures adopted by the Board of Commissioners in the acknowledged Hood River County Comprehensive Plan and Zoning Ordinance implement measures to establish a land use planning process and framework to act on the proposed Comprehensive Plan Amendment application.

Finding: This application, required notices, findings and quasi-judicial public hearings all combine to meet the requirements of Goal 2.

C. *GOAL 3 – AGRICULTURAL LANDS*

A 30-acre portion of the property located east of Orchard Road is designated Exclusive Farm Use. Use of the property for an airport runway does not require an exception to Goal 3, based on OAR 660, Division 12; the Oregon Transportation Planning Rule (TPR). OAR 660-012-0065(3)(n) allows

"...alterations of public use airports that do not permit service to a larger class of airplanes...". The applicant proposes to maintain the 3,040' runway and visual approach status of the airport – no larger class of airplane is accommodated by the runway shift. To ensure consistency with the TPR, an amendment to the County's EFU zone is proposed to allow airport alterations per OAR -660-12. Note also that the Port plans to remove only that portion of orchard use currently located on this part of the airport as required to install and protect the runway, with the balance of orchard use maintained as agricultural lease land.

Finding: The proposal is consistent with Goal 3 based on Transportation Planning Rule provisions found in OAR 660-012-0065(3)(n) that allow airport alterations on EFU-zoned land where they do not accommodate a larger class of airplane.

D. GOAL 4 – FOREST LANDS

Finding: The subject parcel is not located in a designated Forest Use area. Goal 4 is not applicable to this request.

E. GOAL 5 – NATURAL RESOURCES

The following is excerpt from the Airport Master Plan, Environmental Check list, Table 7-3. Findings are given per applicable environmental consideration.

Potential Impact Category	*KEN JERNSTEDT AIRFIELD ENVIRONMENTAL CHECKLIST* **Existing Conditions / Comments**	**Further Action Needed?**
Water Quality	Any wastewater distributed to a septic drain field may require application for an Underground Injection Control (UIC) permit from DEQ. DEQ requires surface storm water runoff be contained, treated, prior to discharge to any natural drainage system, water body. NPDES Permit; maintaining maximum physical separation between construction and sensitive waterways, adherence to FAA Advisory Circular 150/5370-10 required. Document to DEQ any chemicals stored on site. For fuel or agricultural chemical storage, see Water Quality section of this Environmental Checklist, observe compliance with DEQ requirements. Cedar Creek water quality is of concern. **Finding: DEQ permits may be needed for new development. In addition, the Windmaster Sanitary Sewer District will make City sanitary sewer available to the site sometime**	YES

Potential Impact Category	*KEN JERNSTEDT AIRFIELD ENVIRONMENTAL CHECKLIST* Existing Conditions / Comments	Further Action Needed?
	during 2009. Finally, this project proposes to adopt the recommended 30' setback from Cedar Creek for any new buildings.	
Special Land Uses, DOT Act Section 4(f)	No parks, recreation areas, or refuge areas are affected per this section.	NO
Historic, Architectural, Archaeological, and Cultural Resources	Records no longer provided by SHPO. Significant cultural resources possible on-site. Please see above discussion. Halt construction if resources discovered, notify identified tribes, SHPO of all development plans. **Finding: Notice to SHIPO and Tribes is required for new development that may impact cultural resources.**	POSSIBLE
Biotic Communities	ODFW is concerned primarily with water quality impacts as they relate to the tributary to Hood River, Cedar Creek, which originates on site. See Construction Impacts, Water Quality sections of Environmental Checklist narrative. **Finding: this project proposes to adopt the recommended 30' setback from Cedar Creek for any new buildings via proposed amendment to Article 33 Airport Development (AD) zone.**	YES
Endangered and Threatened Species	Several Threatened, Endangered, and Species of Concern were identified as occurring in vicinity. A Biological Evaluation or Assessment is recommended by USFWS prior to major construction or similar undertakings. Please see narrative. **Finding: the Port is aware of the USFW recommendation for a Biological Evaluation or Assessment prior to any major construction that may impact Endangered or Threatened Species.**	YES

Potential Impact Category	*KEN JERNSTEDT AIRFIELD ENVIRONMENTAL CHECKLIST* Existing Conditions / Comments	Further Action Needed?
Wetlands	According to National Wetlands Inventory Maps produced by the USFWS, Cedar Creek is a jurisdictional wetland. Other on-site resources are possible. Wetlands Determination / Delineation are recommended. **Finding: The Port is aware of Cedar Creek's status as a wetland. No impacts are anticipated by ALP improvements; and a 30' building setback from the creek is being proposed as an amendment to Article 33 Airport Development (AD) zone to ensure protection. Any projects that may impact wetlands will require a wetland determination and delineation, and approval from the Division of State Lands .**	YES
Floodplain	No flood plain affected by the project.	NO
Shoreline Management	Not Applicable to this facility.	NO
Coastal Barriers	Not Applicable.	NO
Wild and Scenic Rivers	Not Applicable. Finding: There are no floodplain, shoreline, coastal or wild and scenic river impacts presented by AMP projects.	NO
Energy Supply and Natural Resources	No adverse impacts anticipated. **Finding: There are no energy impacts, and natural resource impacts are evaluated throughout this section of the report to show compliance with Goal 5.**	NO
Solid Waste Impacts	Cedar Creek and other surface and ground water systems must be considered and protected from contamination during the handling of waste materials. Development under the Preferred Alternative would not considerably increase	NO

Potential Impact Category	*KEN JERNSTEDT AIRFIELD ENVIRONMENTAL CHECKLIST* Existing Conditions / Comments	Further Action Needed?
	production of waste at the facility, except during construction phase. **Finding: Reasonable construction safeguards will be required during construction to avoid impacts to Cedar Creek.**	
Construction Impacts	Temporary impacts will accrue during construction phase. Of particular concern is any runoff which might make its way to Hood River via the Cedar Creek tributary. Adherence to the provisions of FAA Advisory Circular 150/5370-10 should preclude foreseeable adverse impacts. **Finding: Adherence to FAA Advisory Circulation 150/5370-10 during construction will ensue against impacts. This FAA AC includes construction-related safety measures including "Runway Safety Area", "Taxiway Safety Areas/Object–Free Areas"; "Overview"; "Marking Guidelines for Temporary Thresholds"; and "Hazard Marking and Lighting".**	YES

Finding: There are documented Goal 5 resources located on or near the subject parcel. Protective measures outlined in the above findings will help the Port to avoid any adverse impacts to Goal 5 resources during future construction projects.

F. GOAL 6 – AIR, WATER AND LAND RESOURCE QUALITY

Goal 6 seeks to maintain and improve the quality of the air, water and land resources of the state. This Goal is administered locally through adopted Comprehensive Plan Goals, Policies, Strategies and Land Use and Development Standards. Note that in Hood River County, water resources are addressed under Goal 5 (above). Applicable Comprehensive Plan provisions relating to air and land resources include:

i. Goal 1. Ensure protection, maintenance and orderly restoration of air and soil qualities.

The proposed levels of use at the airport are not intended to change as a result of relocating the runway 550' east and across Orchard Road. The AMP (Page 7-12) states that the local area is in compliance with applicable air quality standards for all pollutants. If projects are expected to produce greater volumes of air or automobile traffic, the Oregon Department of Environmental Quality (DEQ) request close coordination to avoid impact to air quality within the Columbia River Gorge. Please refer to the attached traffic study, showing very minimal impacts to automobile traffic. None of the improvements within the AMP are intended to accommodate additional air traffic, so no impacts to air quality are anticipated.

Soils within the subject area include Agriculture Capability Classifications ranging from VIIs to IIw. The Class VIIs soils are severely limited due to stone content, and class IIw soils are highly capable, yet somewhat limited by wetness. The proposed runway shift to the east of Orchard Road will remove some existing orchard uses as needed to ensure safe operations. This improvement is found to be compatible with Goal 3, farm lands via the Transportation Planning Rule. In addition, there are no federal lands involved with the AMP preferred alternative, so the Farmland Protection Policy Act (FPPA) does not apply, and no further action is required to demonstrate compliance with NEPA.

Finding: The proposal maintains the same 3,040' runway and visual approach, and does not accommodate larger airplanes or significant surface traffic increases. Impacts to farmlands are limited and accepted under federal and state guidelines. In summary, AMP projects pose no significant threat to air or soil quality.

G. GOAL 7 – NATURAL HAZARDS

Finding: There are no inventoried or known natural hazards on the site. Natural hazards include features such as floodplains and geologic hazards (rockfall, unstable slopes, mud and debris flow areas, etc.). There are no Goal 7 resources to be considered as part of this request.

H. GOAL 8 – RECREATIONAL NEEDS

Finding: The site is not identified as existing or potential recreational land or open space and the proposed Airport Master Plan adoption will have no affect on recreational resources currently existing in the county. There are no Goal 8 resources to be considered as part of this request.

I. GOAL 9 – ECONOMY OF THE STATE

Goal 9 seeks to provide opportunities throughout the State for a variety of economic enhancement activities. This is accomplished through development of inventories, planning for an adequate supply of suitable development sites and

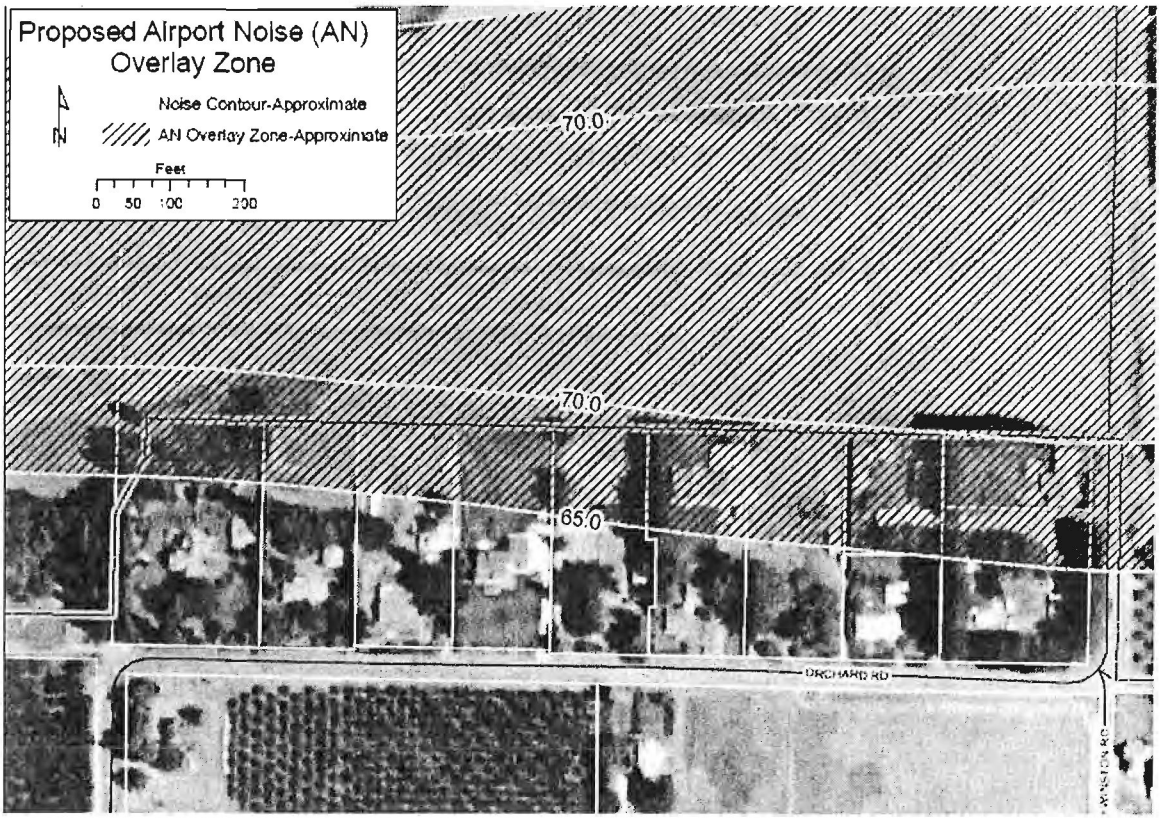
other preparatory measures to proactively foster economic development. This Goal is administered locally through adopted Comprehensive Plan Goals, Policies, and Strategies. Applicable Comprehensive Plan provisions include:

Policy 1a. Necessary support services (water and sewer, and transportation facilities) to encourage economic growth consistent with the Comprehensive Plan shall be provided.

Finding: The airport is an integral part of the County's transportation system, and is a support service needed for economic growth, consistent with the Comprehensive Plan.

J. GOAL 10 – HOUSING

The subject airport property is planned and zoned for Airport Use, and Exclusive Farm Use. While residential use is not allowed or planned on the 132-acre airport site, compliance with the State Airport Planning Rule, OAR 660, Division 13 requires that the County administer an Airport Noise Overlay (AN) Zone in order to mitigate noise impacts to nearby residents. The proposed AN overlay impacts approximately 11 residential properties located SE of the airport (see below) by requiring improved sound insulation for new residential construction.



The provisions will have an impact on housing costs by requiring new construction to enhance sound insulation (i.e. greater insulation R-values; block construction; higher R-value windows), but will not curtail residential development where such standards are met. There are however, two homes that will be impacted by the east side RPZ with the proposed runway shift. The RPZ will not allow these homes within the RPZ and so they will need to be removed or relocated outside of the RPZ before a runway shift can occur. The AMP does contemplate additional land acquisitions, including the homes east of the airport and within the proposed RPZ.

Finding: The proposal will have minimal impact on the County's housing stock, as it proposes a reduction in housing availability by 2 units. Goal 10 resources will also be nominally impacted by the Airport Noise (AN) zone, wherein 11 properties SE of the airport must adhere to higher noise reduction levels via greater building standards for new construction and additions.

K. GOAL 11 – PUBLIC FACILITIES & SERVICES

The airport is served by public water, but currently utilizes on-site private septic system(s). The airport is located within the Windmaster Health Hazard zone, and is to be served by available public sanitary sewer at some point during 2009. This means that new airport development will have access to public sanitary sewer. The new area east of Orchard Road that will accommodate the runway shift and RPZ (30 acres) is proposed to remain as EFU land and as a result will be restricted to runway and orchard lease uses. It will not be zoned to accommodate future growth. Therefore significant impacts to public facilities and services are limited to the proposal for the future vacation of a portion of Orchard Road. Please see attached Future Orchard Road Vacation White Paper regarding the proposal and potential impacts to traffic and emergency response times.

Finding: The proposed adoption of the Airport Master Plan includes no impacts to public facilities and services beyond the proposed vacation of a segment of Orchard Road, which is planned in order to enhance airport safety. The proposal is consistent with Goal 11.

L. GOAL 12 – TRANSPORTATION

Adoption of the Airport Master Plan Update, 2009 is a key step in the longevity of the airport, which is protected under Goal 12. Applicable provisions include:

Policy A.6(a)(2). In order not to preclude future expansion of the airport, new residential and commercial land use that is not airport-related shall be controlled in the Airport Approach Zone "overlay zone".

The proposal includes provisions to ensure compatibility of non airport-related uses. These include new "no build" provision within the RPZs and a new Airport Noise (AN) overlay zone to ensure noise reduction levels meet state law.

Policy A.6.(b)(xi). The "Hood River Airport Master Plan, 1977-2000: (Century West Engineering Corporation)" shall be used as a guideline when decisions are made regarding land uses in and around the airport.

This policy should be updated to reference the "2009 Airport Master Plan Update (Century West Engineering Corporation and Port of Hood River)".

Policy A.6.(b)(xii). The Airport Approach Overlay Zone shall be used to administer land use and height restrictions on lands in the Columbia Gorge Area adjacent to the Cascade Locks Airport and in the area adjacent to the Hood River Airport to comply with Federal Aviation Regulation #77.

With respect to the Hood River Airport, this policy is administered through Articles 33, Airport Development (AD) zone and Article 34, Airport Height Combining (AH) zone. The proposal includes revisions to these articles and proposes a new Article 37, Airport Noise Overlay (AN) zone in order to regulate land use and airspace consistent with Part 77 of the Federal Aviation Administration's Regulations.

Policy B.1(b). Provide an interconnected network of local streets (alternate routes) in urban and rural centers as development occurs.

The Airport Master Plan (AMP) will develop land east of Orchard Road for a proposed runway shift that is designed to enhance safety by moving the runway east and away from Highway 281. It is necessary to vacate a section of Orchard Road east of the airport in order to achieve the runway shift. Although the road vacation process is separate, the Port has completed a traffic study in order to accurately project impacts of a future vacation on the traffic system. The traffic study shows no change in current, acceptable Levels-of-Service (LOS), and finds one pre-existing sight distance problem at the Orchard Road (north)/Tucker Road intersection. There will be some impacts to connectivity, however the airport is not within an *urban area or rural center* which would raise a higher level of scrutiny for a road vacation under Goal 12. Clearly, the proposal will mitigate an identified safety concern.

Policy E.1(a). Identify and implement safety measures to enhance transportation user safety and reduce accident rates.

The AMP update (2009) is primarily aimed at improving known airport safety concerns. The central project within the AMP is a shift in the runway 550' east and away from Highway 281. Additional projects, including relocation of the

taxiway north and relocation of fueling and services to the north side to avoid taxing across the runway are also designed to enhance safety, consistent with this policy.

Finding: The proposed Airport Master Plan Update adoption will ensure proper overlay zone protection for airport longevity; and it will impact connectivity, but in a manner acceptable under Goal 12 given the airport's rural location. Finally, the AMP will address a safety concern by shifting the runway east and away from Highway 281. This airport safety enhancement must be weighed against the impacts of vacating Orchard Road, which reduces response times for emergency vehicles (see Fire Marshal memo).

M. GOAL 13 – ENERGY CONSERVATION

Goal 13 states that *"Land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles."*

Finding: The proposed airport runway shift will not allow the airport to accommodate a larger class of airplane, so no increases in fuel consumption are anticipated. The proposal includes new building code standards to mitigate noise impacts inside homes near the airport, which will nominally increase energy conservation through higher sound-insulating values.

N. GOAL 14: URBANIZATION:

Finding: Goal 14 specifically applies to issues dealing with the transition from rural to urban land use. The airport is not within the Hood River Growth Area, and the master plan adoption does not impact Goal 14, Urbanization policies.

III. Hood River County Zoning Ordinance -- Findings of Fact and Conclusions of Law (Review criteria are noted in *italics*.)

ARTICLE 60 – ADMINISTRATIVE PROCEDURES:

1. Section 60.10 – The Burden of Proof: The burden of proof is placed on the applicant seeking an action pursuant to the provisions of this ordinance. Unless otherwise provided for in this article, such burden shall be to approve the following:

(a) Granting the request is in the public interest; the greater departure from present land use patterns, the greater the burden of the applicant.

The request is to adopt and implement the Airport Master Plan, including safety enhancements and achieve regulatory compliance with OAR Division

13, the Airport Planning Rule. The Findings in Section II above indicate compliance with the County's Comprehensive Plan and with the Statewide Planning Goals, which is required to find the proposal is in the public interest. In addition, this documents and attachments clearly identify airport safety concerns acknowledged by the Port of Hood River, the Airport Committee and the FAA in adopting the AMP in 2004. This process will protect the public interest by including the AMP in the County's Plan and Ordinances; resulting in implementation and enhanced airport safety.

The proposed land use pattern for the airport will experience some changes with adoption. Specifically, the runway will shift east across Orchard Road, and 30-acres of airport-owned, EFU land will be committed to a runway improvement and a Runway Protection Zone (RPZ). The applicant accepts its burden of proof, which is demonstrated within the findings of this report.

Finding: Based on the findings within this report and attachment, the proposal is in the public's interest as it addresses airport safety concerns, and has minimal impact on land use patterns. This criterion is met.

(b) The public interest is best carried out by granting the petition for the proposed action, and that interest is best served by granting the petition at this time.

Finding: The proposal best meets the public interest in enhanced airport safety through Airport Master Plan (AMP) adoption at this time. Related Airport Planning Rule compliance (discussed below) ensures code amendments that further protect people and property on the ground, thereby serving the public interest in a timely manner. This criterion is met.

(c) The proposed action is in compliance with the Comprehensive Plan.

Finding: As determined in Section II of this report, the proposal is in compliance with applicable Comprehensive Plan provisions.

(d) The factors set forth in applicable Oregon Law were consciously considered.

The applicable state laws have been thoroughly considered. This includes the Oregon Transportation Planning Rule, OAR 660-012; and the Oregon Airport Planning Rule, OAR 660-013. Findings below as supported by this report demonstrate that the proposal is consistent with applicable Oregon Law.

<u>Oregon Transportation Planning Rule Compliance, OAR Division 12</u>

The Transportation Planning Rule (TPR) outlines the process of developing and maintaining local transportation system plans (TSPs). Hood River County presently has an acknowledged TSP. The proposal includes adoption of the Airport Master Plan (AMP) into the County's Comprehensive Plan and TSP, which is required and is consistent with the TPR.

The primary consideration for this project is the runway shift which is proposed on 30-acres of EFU-zoned land east of Orchard Road. OAR 660-012-0065(3)(n) Transportation Improvements on Rural Lands, Subsection states:

(3) The following transportation improvements are considered consistent with Goals 3, 4, 11 and 14 subject to the requirements of this rule:
(n) Expansion or alteration of public use airports that do not permit service to a larger class of airplanes....

The proposed AMP update is driven by safety improvements and does not represent an expansion that would service a larger class of airplane for two key reasons. Please refer to the AMP, Sheets 1-5 for graphics.

1. Same Runway Length. The proposal includes an alteration that will enhance safety by shifting the existing 3,040' runway east 550' and away from Highway 281/Tucker Road. This shift will bring the RPZ away from developed property on the west side of Tucker Road and place it entirely on airport property. The primary impact is on 30-acres of land east of Orchard Road, where the runway and RPZ for the eastern approach will be located primarily on airport-owned land. There are no plans to extend the runway to accommodate a larger class of airplane because:
    a. The Airport is serving smaller planes and antique planes and it plans to maintain this same patronage.
    b. There is not ample space to safely extend the runway to serve larger planes; and
    c. The Columbia Gorge Regional/The Dalles Municipal Airport located 20 miles east of Hood River accommodates larger planes with its 5,000' runway(s).
    d. Topographic constraints to the east.

2. Same Visual Approach. The AMP will remain as a visual approach airport. This means there are no plans to eventually install an instrument approach system because:
    a. The eastern hills make it very difficult to alter the approach angle from its present 20:1 (visual) to the required 34:1 (instrument approach).

Finding: The proposed AMP adoption will become a part of the County's adopted Transportation System Plan, consistent with the Oregon Transportation Planning Rule (TPR). A key provision within the TPR allows the runway shift onto EFU (farm) land, finding it consistent with Statewide Goal 3, Farm Use as long as the alternation does not accommodate a larger class of airplane. The proposal maintains the present 3,040' runway and visual approach, so it does not accommodate a larger class of airplane. This proposal includes a new policy provision to support the runway shift, and an amendment to Article 7, EFU to allow a runway as permitted by OAR-660-12-0065(3)(n).

Oregon Airport Planning Rule Compliance, OAR Division 13

The Oregon Airport Planning Rule (APR) outlines the requirements for developing a coordinating aviation plans. OAR 660-013-0160(5) Applicability, states in part:

.....amendments to acknowledged comprehensive plans and land use regulation, including map amendments and zone changes, require full compliance with the provisions of this division, except where requirements of the new regulation or designation are the same as the requirement they replace.

The proposal includes new plan and zone changes, so full compliance with the APR is required. The applicant has coordinated extensively with the Oregon Department of Aviation (ODA) in determining what areas of APR compliance need to be addressed.

OAR 660-013-0070(1)(a) requires an overlay zone to *promote aviation safety by prohibiting structures, trees, and other objects of natural growth from penetrating airport imaginary surfaces.* The ODA acknowledges Article 34, Airport Height Combining Zone as the County's existing overlay zone consistent with APR requirements, but has advised of two deficiencies:

1. Runway Protection Zone. The APR defines this as *an area off the runway end to enhance protection of people and property on the ground.* For visual approach runways, the RPZ extends 1,000' beyond the runway, and its trapezoidal shape is determined by the type of airplanes it serves. Note that when the runway is rebuilt 550' east, the RPZ on the west side of the runway will shift almost entirely onto airport property. This will eliminate the existing RPZ impact on adjoining land (i.e. Twin Peaks Restaurant and Highway 281). However, once the runway is shifted, the RPZ plan "B" will automatically take effect, and will impact additional property to the east of the airport. This shift will make two existing homes nonconforming, and they will need to be acquired by the Port as proposed in the AMP.

OAR 660-013-0080(1) goes on to list airport compatibility requirements, including:

(a) Prohibit new residential development and public assembly uses within the Runway Protection Zone (RPZ)....

The RPZ is shown on the AMP airport layout plan. The County must amend Article 34 to ensure that no development or public gathering occurs in the RPZ. The Planning Commission record includes the proposed code language to ensure compliance. The County zoning maps must also be amended to implement the RPZ zone standards within the existing provisions of the "AH" Airport Height Combining Zone.

2. Noise Contour Provisions. The very next provision within the APR states:

(b) limit the establishment of uses identified in Exhibit 5 within the noise impact boundary that has been identified pursuant to OAR 340, division 35 consistent with the levels identified in Exhibit 5.

This provision does not allow residential use in areas exposed to Day-Night Sound Levels (DNL) greater than 70, and allows residential uses for 65-70 DNL only as follows:

Where the community determined that residential or school uses must be allowed, measures to achieve an outdoor to indoor Noise Level Reduction (NLR) of at least 25dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows all year round. The use of NLR criteria will not, however, eliminate outdoor noise problems.

In this case, the required Noise Contours of 65 dB to 70 dB impacts all or portions of eleven non-airport parcels adjacent southeast of the airport along Orchard Road, which are primarily built-out with existing residences. Please refer to the "AN" zone detail to review the relationship of developed property to the proposed zone. The remainder of this contour is located on airport property where residential use is not allowed or planned. This proposal establishes the new Airport Noise Overlay (AN) zone, and includes the required language to ensure new construction is reviewed to include higher noise reduction standards.

The planning office will administer the "AN" overlay and the Building Official will ensure clear and objective NLR standards are met.

OAR 660-013-0070(2) allows local governments to permit structures that penetrate the regulated airspace, but are not in the approach or transition surfaces, at up to 35' in height. The FAA and ODA notification rules apply, and the agencies may comment and require mitigation (i.e. re-siting a structure elsewhere on the parcel or installing a light, etc), however the home or allowed structure would be permitted. The County has expressed interest in adopting this safeguard for development, because certain land on Portland Road and Markham Road is within the AH Zone, and certainty is desirable where home site development is allowed. The proposed revisions to Article 34 include this local option provision to ensure 35' homes in non-critical regulated airspace.

Finding: The proposal includes revisions to the Comprehensive Plan and Zoning Ordinances that ensure compliance with the Oregon Transportation Planning Rule (TPR) and the Oregon Airport Planning Rule (APR). These include adopting the AMP, into the TSP; addition of an Airport Noise Overlay (AN) zone; amending the zoning map to reflect the RPZ being added to the AH zone; and revisions to ensure the Runway Protection Zone does not allow development or public gathering. In addition, amendments to Article 34, Airport Height Combining (AH) zone will allow structures that are not in the approach or transition surfaces at up to 35' in height. The proposal is consistent with state law.

Also, consideration will be given to the following factors:

(i) The characteristics of the various areas of the County.

The Hood River and Cascade Locks airports are the only two public airports in Hood River County. They are both located to serve urban population centers. The Hood River Airport is located in unincorporated Hood River County and the Cascade Locks Airport is within the Cascade Locks City Limits. A review of the Hood River Airport Master Plan (AMP) shows the airport was originally located in west Hood River in 1928 and moved south to its present location in 1945. It has served the County for 64 years, developing slowly along with compatible, low density rural residential and farm uses in the Orchard Road area. The site is served by Highway 281/Tucker Road, and the master plan proposes to move the runway east 550' in order to separate it from the highway and better protect the traveling public.

Finding: The airport was established in its current location in 1945, and is designated on the 1984 Comprehensive Plan map. The proposal will adopt the 20-year AMP to guide

future development of the airport. The plan envisions safety improvements to the rural airport and projects a similar patronage without expansion during this time frame. The proposal has considered the characteristics of various areas of the County, and is located per the Comprehensive Plan Airport designation. The proposal meets this criterion.

(ii) The suitability of the subject area for the type of development in question.

Finding: The above discussion regarding character together with this report and attachments show that the proposal is suitably located on land designated for airport use on the comprehensive plan. Where the proposed runway shift crosses east of Orchard Road onto land designated EFU, the alteration is found to be consistent with Goal 3 by the Oregon Transportation Planning Rule, OAR-660-012-0065(3)(n).

(iii) Trends in land development.

Finding: The proposal supports adoption of the AMP, which guides development of the airport in its current location, which is appropriately designated for the use. The proposal includes compliance with the Airport Planning Rule, which results in proposed new ordinance provisions that help to keep the airport and adjacent residential uses compatible, including Noise Level Reduction measures, and RPZ standards to disallow development or public gathering. These measures together with the AMP safety provisions ensure operations will continue at enhanced levels of safety both on and near the airport as this rural area develops. The proposal is consistent with this criterion.

(iv) Density of development.

Finding: The proposal has no direct impact on development density because none of the proposed changes allow uses not already allowed under present zoning. The AMP helps to direct where airport-related development should occur, with future development meeting the established Airport Development (AD) standards, including density. This criterion is met.

(v) Property values.

Finding: The proposal has no direct impact on property values. Once the AMP is implemented and Orchard Road is vacated, there may be some intangible value gained through Orchard Road area properties being located on cul-de-sacs versus a through-route. Conversely, the application of the Airport Noise Overlay (AN) zone which requires greater noise insulation standards for new construction has a cost and could potentially impact values. These potential property value influences would be difficult to measure; and no appreciable change in property value is anticipated. This criterion is met.

(vi) The needs of economic enterprises in the future development of the County.

Finding: Approval of this application will contribute to on-going airport-related economic development for the County. Maintaining a viable and safe airport that can accommodate growth in airport–related businesses is significant in assisting economic development agencies working to attract new business to Hood River County.

(vii) Access.

Finding: The proposal does not impact the primary access to the airport via Highway 281/Tucker Road. It does however have an impact on the future of Orchard Road via a proposed partial vacation, and will eventually impact neighborhood traffic patterns. As indicated in the attached traffic study, there are no changes to levels of service (LOS) with an Orchard Road vacation. There will be impacts to connectivity and emergency response time. The key determination the Board must make is whether the public is best served by the improved airport safety even though the vacation of Orchard Road will have some impact on emergency response times (see Fire Marshal's comments). Provided impacts to emergency response times are acceptable, the access concessions are more than off-set by the safety enhancements to be gained via approval of the proposal. This criterion requires Board consideration in order to be met.

(viii) Natural resources.

Finding: As determined earlier in this report, there are known natural resources on or near the subject parcel that could be adversely impacted by the proposed request. Most notable is protection of Cedar Creek through the proposed adoption of a new 30' setback for buildings. In addition, several state and federal agencies have advised the Port of needed steps to safeguard resources prior to and during construction (i.e. potential wetland delineation and biological assessment as outlined earlier in this report). With these code updates and safeguards in place, this criterion is met.

(e) Proof of change in a neighborhood or community or mistake in the planning or zoning for the property under consideration are additional relevant factors to consider.

Finding: The subject site has been planned and zoned for airport use for the past 25 years; and has been used as an airport for 64 years. The adoption of the 20-year AMP will address safety and internal operational concerns. The proposal is not responding to measurable change in the neighborhood and there is no mistake in the appropriate airport comprehensive plan and zoning for the airport.

The only additional relevant factor involves the application of a new Airport Noise Overlay (AN) zone to approximately 11 adjoining parcels on Orchard Road that comprise roughly 9 acres. Because the plan and ordinance amendments are being

proposed, the County must fully comply with the Airport Planning Rule. While APR compliance includes some on-site RPZ regulations for the airport, and provides some off-site (AH) zone building assurances up to 35', its most notable impact is on the adjoining owners who will need to meet higher Noise Level Reduction standards for future construction. In short, this is a standing state law that must now be met. The overall impact is in the public interest, and this criterion is met.

IV. Recommendation:

Based upon the above findings of fact and conclusions of law, the Planning Commission recommends that the Board of Commissioners approve the Port of Hood River's request for adoption of the Airport Master Plan, including proposed comprehensive plan and zone changes.

Ken Jernstedt Airfield Airport Master Plan
2009 Update

Hood River County Comprehensive Plan Revisions:

Plan Designation Summary Revision (Airport Noise Overlay Zone)
Policy Document Revision – Goal 3 (Agricultural Land)
Policy Document Revision – Goal 12 (Transportation)
Background Document Revision – Goal 12 (Transportation)
Transportation System Plan Revision (Section 6.4.6 – Air Service Plan)

COMPREHENSIVE PLAN DESIGNATION SUMMARY REVISION:
SECTION IV, PLAN DESIGNATION DEFINITIONS – (H) AIRPORT

H. **Airport:** Applied to lands to recognize and maintain the existing airport, its related uses, and to allow future expansion.

Lands designated Airport include: (1) areas justified as being built upon or committed to airport and related uses including additional areas to allow expansion or infilling; and (2) in or adjacent to areas where surrounding lands are resource lands lacking high density development.

The minimum size for a new parcel or lot is not specified; however, development standard provisions outlined in the Airport Development Zone must be met.

The Airport Plan designation is implemented with the Airport Development Zone (AD), the Airport Noise Overlay Zone (AN) and the Airport Height Combining Zone (AH).

I. **Farm:** Applied to lands to preserve and maintain the County's agricultural economic land base.

Lands designated Farm include: (1) lands of predominantly Class I, I I, 111 and IV soils as identified in the Soil Capability Classification System of the Soil Conservation Service (Soil Survey of Hood River County, prepared by the U.S.D.A., SCS, in cooperation with the Oregon Agricultural Experiment Station, January, 1981); (2) other lands which are suitable for farm use taking into consideration soil fertility, suitability for grazing, climatic conditions, existing and future availability of water for farm irrigation purposes; existing land use patterns, technological and energy inputs, required or accepted farming practices; (3) lands in other classes (V, VI, VII, etc.) which are necessary to permit farm practices to be undertaken on adjacent or nearby lands included as agricultural land in any event; and (4) areas which are not generally located within medium or multifamily residential, commercial and industrial land-use - designations.

The minimum size for a new parcel or lot for a dwelling shall be 20 acres. Justification for the minimum 20-acre lot size is presented in the County Background Document.

The Farm Plan designation is implemented with the Exclusive Farm Use Zone (E FU).

J. **Forest (F-1) and Primary Forest (F-2):** Applied to lands to preserve, protect and maintain timber production, harvesting and related uses and to recognize that commercial forest lands are necessary for the continuous production of

PROPOSED AMENDMENT TO HRC POLICY GOAL 3

Adopted January 15, 1996
Hood River County Ordinance #201

GOAL 3 – AGRICULTURAL LANDS

A. GOAL:
To preserve and maintain agricultural lands.

B. POLICIES:

1. Agricultural land shall be preserved and maintained for agricultural uses, consistent with existing and future needs for agricultural products.

2. Forest land and open space are consistent with agricultural land uses and can be used to accommodate future agricultural growth.

3. The County through the Zoning Ordinance may authorize farm uses and those non-farm uses allowed by LCDC rules that will not have significant adverse effects on accepted farm or forest practices.

4. Efforts will be made to curb the decline in cropland acreage, especially for orchard land.

5. Efforts will be made to curb the conversion of agricultural land to other uses.

6. Agricultural lands and existing agricultural uses will be protected from conflicting uses.

7. Redevelopment and improvement of existing communities and other developed area (s) is favored over development which will utilize existing agricultural lands.

8. Diversity of agricultural crops and enterprises is allowed.

9. Access management and other transportation related land use controls will be used to help protect the rural nature of agricultural lands.

~~9.~~10. Support airport runway alterations where required for safety purposes, as detailed in the 2009 Hood River Airport Master Plan Update, and when the runway use on EFU land does not permit services to a larger class of airplanes, consistent with OAR 660-012-0065(3)(n).

C. STRATEGIES

1. Lands identified as agricultural land shall be zoned Exclusive Farm Use (EFU) pursuant to ORS Chapter 215 and OAR 660, Division 33.

2. A "Reasons" exception to Goal 3 shall be based on consideration of the following:
   a. Reasons justify why the applicable goal should apply;

   b. Areas which do not require a new exception which cannot reasonably accommodate the use;

   c. The environmental, energy, social and economic consequences are not significantly greater than at other areas.

   d. The proposed uses are compatible with other adjacent uses.

   e. The retention of :

      i. Class I, II, III and IV soils;

      ii. The better soils in comparison; and

      iii. Tree fruit acreage.

3. Agricultural land is defined as: Land of predominantly Class I, II, III, and IV soils as identified in the Soil Survey of Hood River County prepared by the USDA, Soil Conservation Service, January, 1981, and other lands which are suitable for farm use taking into consideration soil fertility, suitability for grazing, climatic conditions, existing and future availability of water for farm irrigation purposes; existing land use patterns, technological and energy inputs required, or accepted farming practices. Lands in other classes which are necessary to permit farm practices to be undertaken on adjacent or nearby lands shall be included as agricultural land in any event.

   Land in capability classes other than I-IV that is adjacent to or intermingled with lands in capability classes I-IV within farm unit, shall be inventoried as agricultural lands even though this land may not be cropped or grazed. Agricultural land does not include land when acknowledged urban growth boundaries or land within acknowledged exception areas for Goal 3 or 4.

   More detailed soil data to define agricultural land may be used if such data permits achievement of Goal 3.

4. Agricultural land shall be identified as it is defined in Goal 3, when designating zoning and when processing specific proposals.

5. Some steep hillsides may be suitable as agricultural land.

6. The Floodplain Zone and Environmental Protection Zone shall be considered as overlay zones whenever they are adjacent to EFU zoned lands. In such instances, the base zone shall be the EFU Zone.

7. Value added farm products should be provided for because of their contribution to the County Ag economy.

8. Forest land that has been converted to farm use should be considered for a plan and zone change to EFU.

9. Farm-related uses designed to sort, box and store (i.e., cold storage and packing) agricultural products, if in conjunction with an on-premise farm use are considered as a farm use and are permitted.

10. Equine facilities are considered as a farm use and are permitted in the EFU Zone if siting standards are met.

11. Zoning applied to agricultural land shall limit uses which can have significant adverse effects on agricultural and forest land, on farm and forest uses, or on accepted farming or forest practices.

12. Farm dwellings, non-farm dwellings, and non-farm uses are not permitted outright and shall only be approved if adopted criteria are met.

13. Non-farm uses permitted by the State statutes and rules shall be minimized to allow for maximum agricultural productivity.

14. Buffers, deed notices, conditions of approval, restrictions or prohibitions on the encroachment of non-farm uses, and consideration of cumulative effects should be used to minimize land use conflicts.

15. Non-farm uses should be denied if conditions of approval which are necessary to mitigate conflicts cannot be created or reasonably enforced.

16. When a provision of the Comprehensive Plan pertaining to a non-farm use is open to interpretation, the more restrictive interpretation should be used.

17. Due to factors inherent in the County's farm lands, the creation of additional non-farm parcels is discouraged and shall only be approved under very limited circumstances as specified in the Zoning Ordinance.

18. The EFU Zone has been protected with even greater restrictions on non-farm uses that required by the State, to assure protection of agricultural lands which play such an important role in the County's economy.

19. Land uses must meet both State and County provisions regarding EFU lands.

20. Urban growth should be separated from agricultural land by transitional areas of open space.

21. Plans providing for the preservation and maintenance of farm land for farm use should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.

22. The County supports the "Right to Farm" clause as it is stated in the County Background Report. The clause shall be included in Article 7 – EFU Zone to serve as a notice.

23. High Value Farmland (HVF) is defined as:

    a. Land in a tract composed predominantly of soils that are irrigated and classified prime, unique , Class I or Class II; and

    b. Tracts growing specified perennials as demonstrated by the most recent aerial photography of the agricultural Stabilization and Conservation Service of the United States Department of Agriculture taken prior to November 54, 1993, or by the aerial photography taken by the Western Aerial Corporation on May 28, 1995; and

    c. Small blocks of land surrounded or nearly surrounded by HVF that are designated during the mapping of such land.

24. Lot of Record dwelling are a non-farm use. Such provisions are intended to provide certain owners of less productive land an opportunity to build a dwelling on their land.

25. Pre-existing dwellings that are to be replaced on a completely different site shall comply with setbacks and buffer requirements.

26. Golf courses approved by the Board of Commissioners and constructed at the time of adoption of this ordinance should be provided for by the Comprehensive Plan regardless of any restrictions due to the HVF designation.

27. Destination resorts are listed as a prohibited use in the EFU Zone because there is not any EFU zoned land that would meet State Siting criteria.

28. The minimum parcel size in the Exclusive Farm Use Zone shall be 80 acres, unless the County adopts a lower minimum that is approved by the LCDC. The minimum parcel size shall be appropriate for maintaining the existing commercial agricultural enterprise within the area.

29. Services that need to pass through agricultural lands shall not be connected with any use that is not allowed under State statutes or rules, and shall be limited in capacity to serve specific service areas and identified needs. Such services shall comply with State law and County Goal 11.

30. Extensions of sewer and water and other public services into designated agricultural areas shall be designed to accommodate the needs of farm and related uses agricultural, farm and non-farm uses allowed by State statutes and rules.

31 Extension of new sewer trunk lines into areas designated "Farm" on the Plan Map shall not be allowed without prior approval by the Planning Commission. At a minimum, the following criteria must be met: (a) the sewer line is necessary to correct a state documented health hazard;; or (b) extending the sewer line through an area designated "Farm" is the only reasonable means of providing sewer service to a justified exception area which lies within the boundaries of a legally created sewerage entity and which is designated for residential, commercial, industrial, or light industrial on the plan Map; and (c) the proposed facilities are shown to be ;appropriate for and limited to the exception area. Assessments and levies for sewer service land designated "Farm" by the County shall comply with *ORS 308.401.

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* ORS 308.401:
(1) Except as otherwise provided in subsection (2) of this section, the assessments and levies of the following taxing units and special districts shall not be imposed while such lands remain qualified for special assessment for farm use under ORS 308.370 (1):

32. New sewer lateral lines may be extended within a legally created sewerage entity from existing sewer trunk lines into resource lands (i.e., farm and forest) to provide service to either **pre-existing residential, commercial, industrial or light industrial uses or new uses approved by a County land use action or a County building/land use permit in accordance with the County Comprehensive Plan and Land Use Code. Such pre-existing and new uses may also be served by existing laterals and trunk extensions. The following conditions shall apply to new lateral extensions.

(a) The lateral is sized only to service the uses approved for sewer service in the is Section.

(b) The lateral will not cause additional residential, commercial, industrial or light industrial development to occur in the resource land it enters. (Reference OAR 660.04.028(6) (c) (A): Resource and non-resource uses permitted within a resource zone, i.e., an agricultural zone, cannot be relied upon at a future time to justify an exception to a resource Goal.)

33. Sewers shall not extend beyond the urban growth boundary or a legally created sewerage entity except to service a documented health hazard situation.

(a) Sanitary districts formed under ORS 450.005 to 450.245.
(b) Domestic water supply districts formed under ORS chapter 264.
(c) Water supply authorities and sanitary authorities formed under ORS 450.675 to 450.980

(2) Subsection (1) of this section does not apply to:
(a) Benefit assessments or special ad valorem tax levies imposed prior to October 5, 1973
(b) Benefit assessments or special ad valorem tax levies imposed upon homesites situated within a parcel of farm use land. As used in this paragraph, "homesite" means not more than one acre of land upon which are constructed non-farm dwellings and appurtenances.
(c) Benefit assessments or special ad valorem tax levies imposed subsequent to disqualification of lands for farm use assessment under ORS 308.370 (1).

** Pre-existing uses are those improvements that generally use or require sewage disposal systems and were in existence prior to July 21, 1980.

PROPOSED GOAL 12 POLICY DOCUMENT AMENDMENTS

GOAL 12 – TRANSPORTATION

A. **GOAL A: Transportation Balance.** To design a balanced transportation system that maximizes the efficiency of the existing system, provides transportation options at appropriate minimum service standards, reduces reliance on the single occupant automobile where other modes or choices can be made available, and takes advantage of the inherent efficiencies of each mode, while providing a safe, convenient, and economic transportation system to serve area needs that is in harmony with the County's land uses.

1. **Automobile**
   a. Policies
      i. Establish a network of arterials, collectors, and local streets that are interconnected, appropriately spaced to meet needs, and minimize out-of-direction travel.
      ii. Provide a county road system that meets the needs for travel between and through the county, recognizing the needs for both local and through travel, with OR 35 and the Hood River Highway (281) as the primary through routes.
      iii. Identify solutions to address the need for westside north-south circulation to accommodate westside growth.

   b. Strategies
      i. Accommodate needs for all modes of travel through Transportation Demand Management (TDM) strategies and other measures.
      ii. To improve westside north-south circulation, investigate improvements to the existing road system, construction of a new westside access, TDM measures, and other alternatives.
      iii. Accommodate increased tourist traffic through better access to attractions, improved signage, and other measures.
      iv. Promote strategies that increase average automobile occupancy.

2. **Bicycles and Pedestrians**
   a. Policies
      i. Provide a network of safe and convenient bicycle and pedestrian facilities that connects residential areas to parks, school, commercial centers, and other areas and is integrated into the overall transportation system.
      ii. Locate and design recreational and bicycle pathways so as to balance the needs of human use and enjoyment with resource preservation in identified Natural Resource areas.
      iii. Develop a safe, complete, attractive, and efficient system of pedestrian and bicycle ways, including bike lanes, shared roadways, off-street pathways and sidewalks. Road standards shall address bicycle and pedestrian paths.

iv. When development or redevelopment of land occurs, provide bike and pedestrian facilities that are consistent with standards and policies of the County TSP.

v. Provide connectivity to each area of the County for convenient multi-modal access.

b. Strategies

i. Recognize both local and through travel needs in designing bicycle and pedestrian facilities.

ii. Improve signing of bikeways, particularly destination signing.

iii. Require bikeways along arterials and major collectors.

iv. Add or improve bike lanes or widen shoulders as part of improvements to the roadway system, including improvements to roads used to access recreational bicycle areas.

v. Locate and design recreational and bicycle pathways to balance the needs of people with resource protection in identified Natural Resource protection areas.

vi. Create alternative routes to specific destinations to avoid conflicts with other modes; provide signage to direct bicyclists to alternative routes.

vii. Investigate opportunities to site services, e.g., parking and camping, for cyclists.

viii. Investigate alternative funding sources, use of volunteer groups, and other methods for off-highway bikeway maintenance.

ix. At a minimum, provide five-foot shoulders to accommodate bicycle use on state highways and local arterial streets, and a minimum 4' shoulder on major collector streets where warranted.

x. Provide connections to local bicycle and hiking systems where feasible; provide signage or other means to facilitate access, as appropriate.

xi. Improve the safety of pedestrian crossings in rural centers, e.g., AGA and Davis Roads in Odell.

xii. Improve signing and lighting of pedestrian crossings in rural centers to improve pedestrian safety.

xiii. Develop an interconnected pedestrian system that includes Trail 400, HCRH, and Chinook Trail (loop hiking trail).

xiv. Promote strategies that increase the share of bicycle and pedestrian trips as a percentage of all trips.

xv. Access should be provided to the following trailheads: Perham Creek (Wygant Trail), Mt. Defiance Trail (No. 413), Herman Creek Trail (No. 406), Wyeth Trail (No. 411), Ruckle Creek Trail (No. 405), Cabin Creek Trail, and the trail leading to the Old Dalles-Sandy Wagon Road on Shellrock Mountain.

xvi. The construction and maintenance of the Columbia Gorge Trail and other State and Federal hiking, horse, and bicycle trails shall be supported.

xvii. Update the Draft Hood River County Bicycle and Pedestrian Plan.

3. **Public Transit**

a. Policy

i. Promote the increased use of transit as a current and future alternative to automobiles and to serve the needs of the transportation disadvantaged in all areas of the County.

b. Strategies

i. Ensure the continuity of transit services.

ii. Investigate the feasibility of transit services to Washington communities to reduce commuting.

iii. Utilize public transit as a primary means to ensure transportation accessibility for the transportation disadvantaged.

iv. Incorporate public transit service needs in land use decisions.

v. Investigate opportunities to provide shuttle services to ski areas.

vi. Establish a multi-modal transportation center.

vii. Encourage the Transit District to conduct an education campaign on available transit services.

viii. Work with public transit providers to develop "Park and Ride" and "Park and Pool" lots and additional bus stops and shelters, as needed.

ix. Promote strategies that increase the transit trips as a percentage of all trips.

x. The provision of bus service connecting at least the communities of Parkdale, Mt. Hood and Odell with the City of Hood River shall be encouraged.

xi. A local service organization or other group should be encouraged to promote carpooling.

4. **Rail Service**

a. Policies

i. Accommodate the movement of freight and excursion uses on rail.

ii. Ensure interconnection of rail with other modes.

b. Strategies

i. Make infrastructure improvements (railroad, streets, utilities, etc.) needed to enhance the investment climate for rail users.

ii. Upgrade rail crossings in conjunction with other roadway improvements.

iii. Maintain historic access points across the railroad to the river and to recreation sites. Develop additional formal crossings to allow recreational access to the Columbia River.

iv. Promote excursion tourism uses on the Union Pacific Railroad (UPRR), with connections to the Washington side of the Gorge.

v. Explore opportunities for dedicated service to ski areas from Portland via railroad/buses.

vi. Provide additional signage, flashing lights at railroad crossings, e.g., at Government Rock.
vii. Investigate opportunities for grade-separated crossings to replace at-grade crossings.
viii. Explore railbanking opportunities if the Mt. Hood Railroad is closed.
ix. Consistent with environmental constraints, promote double-tracking of UPRR sections to provide more capacity.
x. Maintain active rail service to Parkdale for both freight and excursions.
xi. Target industrial recruitment on rail shippers.
xii. Promote passenger rail service to Hood River and Cascade Locks.

5. **Truck Freight**

a. Policy

i. Ensure accommodation of truck freight to serve the farming and forestry sectors of the county's economy.

b. Strategies

i. Address conflicts between farm vehicles and autos in the upper valley through signage and increased highway shoulder widths.
ii. Improve truck access to industrial sites, including turn and acceleration/deceleration lanes where appropriate.
iii. Develop a management plan for truck refuge during I-84 emergency and weather closures.
iv. Review and modify if needed, the current hazardous materials response program. Identify potentially unsafe locations (e.g., access/egress points to industrial sites) and develop necessary improvements to accommodate customary freight transport needs.
v. Participate in efforts to explore the need for and feasibility of long-term improvement to the bridge between Hood River and White Salmon/Bingen, Washington.

6. **Other Modes (e.g., air service, water transport, pipelines, telecommunications)**

a. Policies

i. Promote transportation modes that reduce the reliance upon automobiles as the primary transportation mode.
ii. Review, adopt and implement the 2009 Airport Master Plan Update and subsequent amendments.
iii. In order to not preclude future expansion of the airport, new residential and commercial land use that is not airport-related shall be controlled in the Airport Approach Zone "overlay zone."
iv. Barge service facilities will be expanded where warranted by industrial needs.

v. Cascade Locks Airport will be maintained as an important emergency landing facility for the Columbia Gorge Area.

———Placement of new utility routes on existing transportation rights-of-way will be encouraged.

b. Strategies

i. Implement land use regulations to protect against land use encroachments adjacent to airports.

ii. In lieu of developing new airports, protect existing public use airports.

iii. Investigate means to address conflicts associated with the proximity of private airports to highways, e.g., signage, land use controls, etc.

iv. Improve access to port facilities.

v. Identify means to reduce conflicts among commercial and recreational waterway users.

vi. Accommodate pipelines in highway rights-of-way.

vii. To the extent feasible, utilize pipeline rights-of-way as bicycle and pedestrian pathways and wildlife corridors.

viii. Promote telecommunication technologies and programs that reduce vehicle miles traveled.

ix. Coordinate the installation of fiber optics with highway improvements.

x. Coordinate with the Department of Transportation to implement the highway improvements listed in the Statewide Transportation Improvement Program (STIP) that are consistent with the Transportation System Plan and comprehensive plan.

xi. The "Hood River Airport Master Plan, ~~1977-2000~~2009: (Century West Engineering Corporation and Port of Hood River) shall be used as a guideline when decisions are made regarding land uses in and around the airport.

xii. The Airport ~~Approach~~ Height Combining ~~Overlay~~ Zone shall be used to administer land use and height restrictions on lands in the Columbia Gorge Area adjacent to the Cascade Locks Airport and in the area adjacent to the Hood River Airport to comply with Federal Aviation Regulation #77.

———Apply the protected airspace and Runway Protection Zone (RPZ) standards depicted in the Article 34, Airport Height Combining (AH) zone exhibit entitled "Airport Zones Current and Future" based on present runway configuration, and apply the newly located airspace and RPZ standards in this same exhibit to Article 34 when the runway shift identified in the 2009 Airport Master Plan is completed.

B. **GOAL B: Connectivity.** To provide a transportation system with connectivity among modes within and between the County's urban areas and rural service centers, with ease of transfer among modes and between local and state transportation systems.

1. Policies
   a. In lieu of major capacity expansions, strive to maintain existing travel times for both autos and freight through high levels of facility management (acceleration/deceleration lanes, turn refuges, coordinated signals, and access management).
   b. Provide an interconnected network of local streets (alternate routes) in urban and rural community centers as development occurs.
   c. Extensions and improvements of existing roads will be considered as a means to help alleviate high traffic volume areas and mismatched streets.
   d. The alternatives recommended in the Hood River County, Westside Area North-South Feasibility Study will be taken into consideration when developing the County's transportation system (Spanovich-McFarlane and Associates, June, 1982), including the possibility of re-routing Hwy 281 from the west freeway exit to Windmaster Corner.

2. Strategies
   a. Construct additional passing/climbing lanes as appropriate to maintain travel times, e.g., 13th Street in Hood River, Highway 281, OR 35 north of Neal Creek Road and between US 26 and Mt. Hood Meadows.
   b. Investigate improvements to the Highway 35/Highway 281 junction to promote safety and maintain travel times.
   c. Promote use of parallel routes to reduce reliance on state facilities for local trips.
   d. Improve signage to inform travelers of route choices available. Support development of traveler information systems, especially on the Mt. Hood Loop and SR 14.
   e. Develop an intermodal center(s) in the City of Hood River to improve both regional and local intermodal connectivity.
   f. Investigate opportunities and implications of county assumption of Forest Service roads and state highways.
   g. Investigate the need for improvements to reduce congestion and delay at Button Junction.
   h. Investigate the need for improvements to the Highway 35/I-84 interchange. Participate in other studies that are exploring changes to this intersection.
   i. Investigate the need for a left turn lane from Highway 35 to Cooper Spur Road.
   j. Participate in efforts to explore the need for and feasibility of long-term improvement to the bridge between Hood River and White Salmon/Bingen, Washington.

k. Within the urban growth area of Hood River, implement policies of the City of Hood River regarding local street connectivity as urban development occurs. Policies include:
   - Design local streets to serve local traffic and limit non-neighborhood cut-through traffic.
   - For large developments, require creation of complete blocks bounded by a network of public and private streets.
   - Implement standards for block and cul-de-sac length appropriate for urban areas, as identified in the County development codes.
   - Provide additional pathways for bicycles and pedestrians for large blocks or cul-de-sacs that exceed certain standards as identified in the County development codes.

l. Utilize the City of Hood River's Local Street Connectivity Plan in identifying locations for future local streets in the Hood River urban growth area, recognizing that proposed locations are conceptual in nature and may be modified based on factors such as topography, geography, demand for growth and services, and other conditions.

C. **GOAL C: Highway & Roadway Congestion.** To define minimum levels of service and assure balanced, multi-modal accessibility to existing and new development to achieve the goal of compact, highly livable urban areas and rural community centers.

1. Policies
   a. Access management and other transportation related land use controls will be used to help protect the rural nature of agricultural lands.
   b. Industrial collectors shall be developed to provide for direct routes to industrial areas.
   c. The use of common driveway access from two or more properties onto arterials and collectors shall be encouraged. Additional driveways should be connected to minor collectors and local roads when possible, and connected to arterials only as a last resort.

2. Strategies
   a. Ensure coordination between the County and the State to effectively implement access management requirements as mandated for state highways in OAR 734-051 and to balance state requirements with the needs of specific land uses and property owners.
   b. Ensure consistency in street classifications, and speed and access standards with other jurisdictions in the county.
   c. Consolidate access points in rural centers; encourage creation of shared driveways on state highways, while maintaining existing access to individual properties and land uses where possible.
   d. Adopt and implement access management standards for collector streets in urban growth areas consistent with those implemented by the cities of Hood River and Cascade Locks.

e. Adopt additional access management standards for other roads in the County, as appropriate and needed.
f. Achieve mobility standards for state facilities as established in the Oregon Highway Plan and further described in Chapter 3, Section 3.7 of the Transportation System Plan.
g. Investigate improvements included in Goal D below to improve traffic safety.
h. Develop requirements for special events to effectively manage traffic (e.g., required traffic management plans as part of a special event permitting process).
i. Descriptive direction signs should be placed on arterials carrying traffic from freeway interchanges.

D. **GOAL D: Roadway Conditions.** To ensure adequate roadway conditions to meet goals regarding accessibility, levels of service, and reduced congestion.

1. Policies
   a. Maintain existing facilities as the highest priority for the allocation of resources.
   b. In laying out future road networks, where possible, roads shall parallel existing lots to avoid division of land under one ownership, unless no feasible alternative exists.
   c. Performance standards should be considered as a possible means to help regulate commercial and industrial development.
   d. High capacity road networks shall be developed for expected high growth and high density areas.

2. Strategies
   a. Preserve the roadway by investing in roadbed and pavement reconstruction as needed to minimize maintenance costs.
   b. Maintain state roadway surface conditions pursuant to state pavement management system standards.
   c. Maintain County roadway network Pavement Condition Index at 70 or above.
   d. Ensure that speed limits are consistent with roadway geometry and other factors used to determine and designate appropriate posted speeds.
   e. Improve intersections with limited sight distances by realignment and/or other means.
   f. Target realignment and widening to sections with above average accident rates and to sections with high congestion rates where there is a favorable cost/benefit ratio.
   g. In the short term, target pavement of substandard shoulders to "easy fix"/low cost areas.
   h. Review and modify as needed maintenance priorities to focus on key locations, e.g., steep grade entering into Hood River and between Mt. Hood Meadows and the US 26/OR 35 intersection.

i. Strengthen enforcement of speed and weight restrictions to extend roadway longevity.
j. Upgrade substandard guardrails and shoulders.
k. Require mitigation for storm runoff with new developments.
l. Address drainage problems including those that affect the function and condition of the roadway (e.g., along Clark Creek section of OR 35 and steep downhill into Hood River); water ponding; lack of drainage systems for older highway sections; and drainage from I-84, US 30 and other state facilities onto private property.
m. Explore the use of cooperative agreements between the County and other road jurisdictions as a means to reduce maintenance costs on all agency-maintained roads.
n. Work with the Gorge Commission, ODOT, and Forest Service to identify additional long-term aggregate sources.
o. Explore use of a "green street" standard for use on selected roads to reduce stormwater runoff and impervious surfaces.
p. Investigate long-term solutions to road wash-out problems along Highway 35 between Baseline Road and White River.[1]
q. The State Highway Department should be encouraged to place warning signals at all locations where arterials and collectors cross railways in the County.

E. **GOAL E: Safety.** To integrate safety as a primary consideration in the design, improvement, and maintenance of the transportation system.

1. Policy
   a. Identify and implement measures to enhance transportation user safety and reduce accident rates.

2. Strategies
   a. Target improvements to highway sections with above average accident rates based on Safety Priority Index System (SPIS) accident data compiled by ODOT.
   b. Apply facility management techniques, including access management, to improve safety in congested areas.
   c. Promote cooperative enforcement among police and sheriff offices and target enforcement activities to high-accident locations.
   d. Investigate the need for more deer crossing warning signs in upper Hood River Valley.
   e. Explore the need for larger clear zones to improve ice melt and decrease road kill.
   f. Investigate the feasibility of signage to indicate lane locations when snow-covered.

[1] This action is being investigated as part of the Highway 35 Feasibility Study, due to be completed in 2003.

g. Improve lighting at key locations (e.g., I-84/OR 35 intersection) and maintain delineation (e.g., fog lines, reflector buttons) to be highly visible.
h. Install safety barriers, e.g., guard rails, gabions, in high hazard locations to meet highway safety standards.
i. Install weather condition monitoring devices at strategic locations.
j. Review and modify if needed, the current hazardous materials response program. Identify potentially unsafe locations (e.g., access/egress points to industrial sites) and develop necessary improvements to accommodate customary freight transport needs.
k. Address needed safety improvements at OR 35/Odell Highway intersection, e.g., better signage, more downhill turning storage.
l. Investigate the need for additional school bus stop signage.
m. Investigate the need for and feasibility of reducing lateral grades to safe levels on all corners on Highway 35 between Highway 26 and Mt. Hood Meadows.
n. Encourage ODOT to establish appropriate speed zones on County roads.
o. All dangerous intersections and curves shall be studied by the Public Works Department and needed improvements recommended.
p. Assist the Port of Hood River to address Airport Master Plan safety concerns, including support for the vacation of part of Orchard Road in order to shift the runway east and away from Highway 281/Tucker Road.

q. No shift in the airport runway, as detailed in the 2009 Airport Master Plan update, shall occur if it causes a residence or public gathering place to be located within the Runway Protection Zone (RPZ).

r. No alterations to the airport shall be made to allow the development of an instrument approach runway, unless otherwise adopted as part of a future airport master plan revision.

F. **GOAL F: Environmental and Energy Impacts.** To avoid effects to the natural and built environments in the design, construction, and operation of the transportation system. Where adverse effects cannot be avoided, minimize or mitigate their effect on the environment.

1. Policies
   a. Transportation improvement projects shall avoid impacting identified natural areas, and will seek to rectify previous negative impacts to these resources when possible.
   b. Transportation improvement projects shall minimize impacting identified scenic areas, and will seek opportunities to rectify previous negative impacts to these resources when possible.
   c. The adverse effects of transportation on air quality should be minimized.
   d. Energy efficient and low pollution transportation modes shall be encouraged.
   e. The roadside stabilization role of living vegetation should be recognized.

2. Strategies
   a. Integrate vegetation management measures into road management and maintenance activities to create and protect scenic vistas, e.g., scenic buffers for timber harvests, and to replace or mitigate for vegetation lost to transportation system projects.
   b. Limit use of billboards and signs, particularly in scenic areas, consistent with County sign ordinances and related regulations. Investigate alternatives to billboards, e.g., Oregon Tourism Alliance travel information program.
   c. Identify and construct additional roadside turnoffs at scenic viewpoints.
   d. As part of transportation projects, implement protection measures for scenic resources identified in the Comprehensive Plan, where practical and feasible.
   e. Implement recommendations on road improvement and maintenance practices from the Governor's Salmon Recovery Plan, the Oregon Plan for Salmon and Watersheds, and the Hood River Watershed Action Plan.
   f. Minimize impacts from the transportation system, particularly local roads connecting to OR 35, on wildlife migration routes.
   g. Work with state, federal and local agencies and groups to reduce visual, air and noise pollution impacts related to Interstate 84.
   h. Promote more energy-efficient freight movement by rail and water.
   i. Promote the use of alternative fuels.
   j. Design roadway improvements and new facilities to minimize surface runoff and pollutants.
   k. Identify solutions to resolve existing drainage problems.
   l. Improve the collection of sand and gravel from roadways to avoid/minimize impacts to water courses.
   m. Encourage and implement standards for road construction that minimize pavement width, consistent with other goals and policies related to safety and bicycle and pedestrian mobility.
   n. Investigate use of natural drainage facilities in developing/constructing transportation facilities.
   o. Encourage undergrounding of utilities, where feasible and appropriate.
   p. Minimize noise impacts through enforcement of current County noise ordinances and consideration of other measures (e.g., sound walls).
   q. Transportation systems should be planned to utilize existing facilities and rights-of-way provided that such use is consistent with the environmental and energy policies of the State.
   r. The State shall be encouraged to provide litter cans on all State-funded highways.

G. **GOAL G: Social and Land Use Impacts.** To develop a transportation system that supports planned land uses and balances the expansion of transportation facilities with the protection of social, cultural, and environmental resources.

1. Policies
   a. Encourage efficient transportation services that reduce vehicle miles traveled and promote a live/work balance, e.g., increased densities, infill and clustered development, mixed uses, maximum parking ratios, and circulation systems that reduce out-of-direction travel.
   b. Design transportation system improvements to preserve community livability and to avoid, minimize or eliminate impacts to sensitive cultural resources and other community resources.
   c. Ensure that land use regulations support the provision of efficient transportation services.
   d. Major transportation facilities shall avoid dividing existing economic farm units unless no feasible alternatives exist.
   e. Additional transportation facilities that would detract from the County's scenic beauty should not be constructed.
   f. Recreational opportunities should be served by public transportation.
   g. All area-wide transportation studies and plans should conform with the County's comprehensive plan.
   h. Historical roads should be revitalized for recreational use and historic preservation.

2. Strategies
   a. Integrate transportation system improvements identified through rural community planning efforts into the county Transportation System Plan.
   b. Promote cooperation between ODOT and local governments in planning and project development.
   c. Utilize access management to limit the impacts of new development on highway congestion.
   d. Work with ODOT to ensure that the needs and input of local property owners in the County are balanced with mobility objectives and state requirements in approving or controlling access to properties located adjacent to state highways.
   e. Maintain standards for setbacks adjacent to state rights-of-way.
   f. Take advantage of multi-modal capabilities/capacities to promote development that is not solely auto/truck dependent.
   g. Encourage building siting and design to reduce noise and visual impacts from adjacent transportation facilities.
   h. Encourage compact development patterns in urban areas to reduce infrastructure needs and miles traveled.
   i. Consider the findings of ODOT's draft Environmental Impact Statements and Environmental Assessments as integral parts of the land use decision-making procedures.
   j. Transportation systems should be planned to utilize existing facilities and rights-of-way provided that such use is consistent with the social or land use policies of the State.
   k. The County Planning Commission shall review all local and regional transportation plans to ensure compliance with the Comprehensive Plan.

l. The Public Works Department, Planning Department and interested citizens shall design a plan to improve traffic circulation, parking, and pedestrian safety in Odell.

m. Additional interpretive signs should be provided at rest areas, turnouts and the Old Dalles-Sandy Wagon Road to give travelers a better understanding of the Gorge's geological and cultural characteristics.

H. **GOAL H: Economic Impacts.** To expand and diversify the County's economy through the efficient movement of goods, services and passengers in a safe, energy-efficient, and environmentally sound manner.

1. Policies

a. Recognize Regional Strategies for important County industries such as agriculture, developed and other recreation, tourism and software.

b. Grant high priority to projects that promote efficient transportation system connections to existing and planned industrial and commercial sites.

c. Improve convenient access to a variety of recreational opportunities.

2. Strategies

a. Promote I-84/OR 35 as an alternative route from Portland to Mt. Hood recreation areas. Specific strategies could include signage on I-84 near Troutdale and Hood River identifying OR 35 as an alternative route.

b. Provide connections to recreational trails.

c. Promote the marketing of the Mt. Hood Loop, the "Fruit Loop" and other tour routes within the County.

d. Promote bicycle-related tourism and recreation.

e. Promote excursions, water, and year-round recreation uses.

f. Support projects identified through the Regional Strategies Program and other economic development activities through appropriate transportation system improvements.

g. In coordination with ODOT and the Forest Service, provide adequate sno-parks to meet recreation demand.

h. Participate in efforts to explore the need for and feasibility of long-term improvement to the bridge between Hood River and White Salmon/Bingen, Washington.

i. Transportation systems should be planned to utilize existing facilities and rights-of-way provided that such use is consistent with the economic policies of the State.

I. **GOAL I: Funding.** To ensure adequate funding of needed transportation system improvements.

1. Policies

a. Identify sources and strategies to fund needed transportation system improvements.

b. The transportation system shall provide facilities and services at the least possible cost to the community and the environment, as long as it does not conflict with other goals.

2. Strategies
   a. Allocate resources to highway and roadway projects according to the following priorities:
      i. Maintenance of the existing facility to ensure that it remains safe and functional, e.g., fixing potholes;
      ii. Preservation of the roadway by investing in roadbed and pavement as needed to minimize maintenance costs;
      iii. Safety improvements;
      iv. Managing the existing system to maximize capacity/operation; and
      v. Capacity improvements.
   b. Investigate alternative mechanisms to finance transportation system improvements, e.g., public/private partnerships, tollways, road maintenance improvement districts, systems development charges, etc.
   c. County Planning and Public Works shall establish a Capital Improvements Program (CIP) to implement the Transportation System Plan.

APPENDIX TO GOAL 12 BACKGROUND DOCUMENT
HOOD RIVER COUNTY COMPREHENSIVE PLAN

Hood River Airport Master Plan Update, 2009
Adopted _____, 2009

The Port of Hood River owns the Ken Jernstedt Airfield, and completed an Airport Master Plan (AMP) update in 2004. The Port Commission and the Federal Aviation Administration (FAA) adopted the plan, and it was endorsed by the Airport Advisory Committee in 2004. The Port made further refinements to the plan in 2009 and the County adopted the AMP into its Comprehensive Plan, Transportation System Plan and supporting codes.

The primary purposes of the master plan are to:

- Enhance safety
- Plan for needed facilities
- Ensure the longevity of the airport

Key components of the master plan include the following projects subject to future funding:

- A shift in the runway 550' east and away from Tucker Road/Highway 281. This runway shift maintains the existing 3,040' runway length and visual approach status. The shift requires the future vacation and termination of Orchard Road east of the runway. Fire and emergency vehicle turnarounds will be installed in the new Orchard Road dead end configurations both northbound and southbound.
- Relocating the northern taxiway 35' north to meet requirements for 240' of clearance from the runway to the taxiway.
- Long term plans to relocate the fueling station and services now located on the south side of the airport to the north side in order to avoid planes crossing the runway en route to services from the north-side taxiway.

Oregon Airport Planning Rule compliance required the following Plan and Code updates:

- Adoption of a new Airport Noise Overlay Zone (AN) which requires increased sound insulation for new residential construction or schools near the airport.
- Revisions to the Airport Height Combining (AH) zone to ensure the Runway Protection Zones (RPZs) do not allow development or public gathering, and
- Revisions to the Airport Height Combining (AH) zone to allow the County to permit a 35' structure in areas penetrating the protected imaginary airspace surfaces, but not located within the critical approach or transition surfaces. The County will assist with required FAA and ODA notification, and agency comment can result in mitigation (i.e. re-siting structures or adding obstacle warning lights) as part of a permit approval.
- Shift the AH zone limits east to reflect the corresponding 550' runway shift upon relocation of the runway.

Note: The 2009 Hood River Airport Master Plan Update summarized above is added to the Background Document as Appendix ___, and herein incorporated by reference.

PROPOSED TRANSPORTATION SYSTEM PLAN UPDATE to SECTION 6.4.6

6.4.6 Air Service Plan

There are four airports in the county: Cascade Locks State Airport, Hood River County Airport, Hanel Airport, and a small airport located near Highway 281 northwest of Odell. Cascade Locks State Airport is located within the city limits and is administered by the State Aeronautics Division. With one 1,800-foot paved runway, it is classified as a Level 5 facility (State Aviation designation), because it plays a supportive role to the state transportation systems in terms of agricultural, recreational, and emergency uses. Hood River airport is a general aviation airport located south of Hood River adjacent to Highway 281. It is owned and operated by the Port of Hood River and provides no regular air service, being used primarily by small planes for agricultural, business, and personal uses. Hood River Airport has one 3,040-foot paved runway, and is classified as a Level 4 facility (State Aviation designation), meaning that it provides local support and access and second-tier economic development. The Hanel Airport located near OR 35 south of Odell is a privately operated airport.

There are no commercial flights to any of these airports at this time. The accessibility of Portland Airport and the wide range of services it offers limit the likelihood of significant expansions of the smaller airports in Hood River County.

Projects and associated costs have been estimated for the Hood River Airport Master Plan as shown in Table 6-4.

The 2009 Airport Master Plan Update was adopted by the County in ___, 2009. The plan update was also adopted by the Port of Hood River, the Airport Committee and the FAA in 2004. Several key safety and operational projects are outlined in the plan update, including a shift in the runway 550' east and away from Highway 281. This brings the Runway Protection Zone wholly onto airport property, and involves a planned vacation of a segment of Orchard Road in order to rebuild the runway and taxiway. The plan also proposes to relocate the taxiway further north to meet FAA separation standards, and proposes the Fixed Base Operator (FBO) office, fueling and services be relocated to the north side of the airport over time, to avoid planes taxiing across the runway. The plan update process was funded in part by a DLCD technical assistance grant, involved several public workshops and concluded with hearings and adoption in 2009. The plan is attached by reference to the TSP and the County's Comprehensive Plan Background Document.

6.4.7 Pipeline Service Plan

The northern portion of the county is provided with natural gas service from a Northwest Pipeline Corporation transmission pipeline that extends south from Washington and crosses the Columbia River near the I-5 Interstate Bridge. No oil or natural gas transmission lines traverse the OR 35 corridor, and the southern portion of the county does not receive natural gas service.

The county plans to investigate the feasibility of accommodating pipelines in highway right-of-way. To the extent feasible, it also plans to utilize pipeline rights-of-way as bicycle and pedestrian pathways and wildlife corridors.

6.4.8 Truck Freight Service Plan

As a primary east-west corridor through the state, I-84 carries high volumes of truck traffic and freight movement. Annual freight volumes through Hood River County on I-84 are estimated at between 23 and 32 million tons. Additional modernization projects are not expected to be required on I-84.

Ken Jernstedt Airfield Airport Master Plan
2009 Update

Hood River County Zoning Ordinance Revisions:

Article 4 (Zoning Classifications) – AN Zone Designation Addition
Article 7 (Exclusive Farm Use) – Conditional Use Permit Revision
Article 33 (Airport Development) – General Revisions
Article 34 (Airport Height Combining) – General Revisions
Article 37 (Airport Noise Overlay) – New Zoning Article

ARTICLE 4

Section 4.00 - Compliance with Ordinance Provisions, Classification of Zones and Zoning Map

No structure or lot shall hereafter be used or occupied and no structure or part thereof shall be erected, moved, reconstructed, extended, enlarged, or altered contrary to the provisions of this ordinance provided, however, that a proposed use or structure not expressly listed under "conditional uses" may be considered by the Planning Commission or Planning Director as conditional use if said use or structure is consistent with the subject zone and/or with other conditional uses listed in the subject zone. (Amended January 9, 1978)

Section 4.10 - Classification of Zones	Abbreviated Designation
Forest Zone	F-1
Primary Forest Zone	F-2
Exclusive Farm Use Zone	EFU
Residential Zone	R-1
Residential Zone	R-2
Rural Residential Zone	RR
Mobile Home Parks Zone[1]	MHP
Commercial Zone	C-1
Rural Center Zone	RC
Industrial Zone	M-1
Light Industrial Zone	M-2
Airport Development Zone	AD
Airport Height Combining Zone	AH
Airport Noise Overlay Zone	AN

[1] Mobile Home Parks Zone includes provisions for individual single-wide mobile homes and dependent relative single-wide mobile homes.

Natural Area Zone	NA
Historic Preservation Zone	HP
Planned Unit Development	PUD
Environmental Protection Zone	EP
Floodplain Zone	FP
Geologic Hazard	GH
Surface Mining Zone	SM
Columbia Gorge Combining Zone	CG
Scenic Protection Zone	SP
Health Hazard Overlay Zone	HH
Stream Protection Overlay Zone	SPO

Section 4.20 - Zoning Map

A. The location and boundaries of the zones designated to Section 4.10 are hereby established as shown on the maps entitled "Zoning Maps of Hood River County". The effective date of zoning in an area of the County is the date shown on the zoning maps. The County Board of Commissioners and the engineer or an agent of the Commission shall sign the map. The maps shall hereafter be referred to as the zoning maps.

B. The signed copy of the zoning maps shall be maintained without change or filed in the office of the Department of Records and Assessments and is hereby made a Part of this ordinance.

Section 7.40 - Conditional Uses Permitted

The following uses may be approved only where such uses will not force a significant change in or will not significantly increase the cost of accepted farm or forest practices on lands devoted to farm or forest use; and subject to ORS 215.296:

A. Commercial activities that are in conjunction with on-premise farm use.

B. Aquatic species propagation, cultivation, maintenance and harvesting.

C. Forest product facilities, subject to the following standards:

1. The facility shall not seriously interfere with accepted farm practices and shall be compatible with farm uses;

2. The facility shall only be approved for a renewable period of one year;

3. The facility is intended to be portable or temporary;

4. The facility shall consist of a portable chipper or stud mill or other similar methods of initial treatment of a forest product for shipment to market; and

5. The facility shall only process timber grown upon a tract where the facility is located.

D. Non-Farm Dwellings, subject to the following standards:

1. The dwelling or activities associated with the dwelling will not force a significant change in or significantly increase the cost of accepted farming or forest practices on nearby lands devoted to farm or forest use;

2. The dwelling is situated upon a lot or parcel that is generally unsuitable land for the production of farm crops and livestock or merchantable tree species, considering the terrain, adverse soil or land conditions, drainage and flooding, vegetation, location and size of the tract. A lot or parcel shall not be considered unsuitable solely because of size or location if it can reasonably be put to farm or forest use in conjunction with other land. A lot or parcel is not "generally unsuitable" simply because it is too small to be farmed profitably by itself. If a lot or parcel can be sold, leased, rented or otherwise managed as part of a commercial farm or ranch, it is not "generally unsuitable." A lot or parcel is presumed to be suitable if it is composed predominantly of Class l-IV soils. Just because a lot or parcel is unsuitable for one farm use does not mean it is unsuitable for other farm uses;

3. If the parcel is under forest assessment, the dwelling shall be situated upon generally unsuitable land for the production of merchantable tree species recognized by the Forest Practices Rules, considering the terrain, adverse soil or land conditions, drainage and flooding, vegetation, location and size of the parcel. The lot or parcel is not "generally unsuitable" simply because it is too small to be managed for forest production profitably by itself. If the lot or parcel can be sold, leased, rented or otherwise managed as a part of a forestry operation, it is not "generally unsuitable." The lot or parcel is presumed suitable if it is composed predominantly of soils capable of producing 50 cubic feet of wood fiber per acre per year;

4. The dwelling will not materially alter the stability of the overall land use pattern of the area. In determining whether a proposed non-farm dwelling will alter the stability of the land use pattern in the area, the County shall consider the cumulative impact of non-farm dwellings on other lots or parcels in the area similarly situated;

5. There is no other dwelling on the parcel;

6. Subject to Section 7.60, and Article 50 - Buffer Requirements including a deed notification, and with other applicable requirements of the Comprehensive Plan; and

7. The site is suitable for a residential use.

E. Hardship dwelling for a relative, subject to the following standards:

1. Justification that the relative is dependent upon care by either a relative or a person medically certified to care for such a person on a full time basis;

2. The relative with the hardship, relative providing care, or medically certified person shall be the primary full time resident;

3. The dwelling shall be temporary and when no longer needed will be removed;

4. Medical doctor confirmation of the hardship;

5. The hardship is based on medical care or on the care for an aged or infirm person;

6. The dwelling shall be a single section manufactured dwelling in conjunction with an existing dwelling;

7. Subject to applicable provisions in Article 16;

8. The dwelling shall use the same septic system used by the existing dwelling, if that system is adequate;

9. Compliance with the County Sanitarian or the State Department of Environmental Quality; and

10. The County shall review the permit every two years.

F. Parks, playgrounds, or community centers owned and operated by a governmental agency or a non-profit community organization.

G. Feedlots.

H. Cattle and livestock auctions of a permanent nature.

I. Animal clinics and livestock animal hospitals.

J. Home occupations, subject to Article 53. Home occupations must not unreasonably interfere with other uses permitted in the EFU Zone. Home occupations located on High Value Farmland may not operate from a structure accessory to a resource use.

K. Bed & Breakfast facility in an existing dwelling, for a maximum of five unrelated persons; subject to Article 56.

L. Residential home or facility as defined in ORS 197.660, in existing dwellings.

M. All development[1] within 800 feet of a withdrawal point of a public water supply.

N. Commercial utility facilities for the purpose of generating power for public use by sale. Such facilities shall not preclude more than 20 acres from use (or 12 acres if located on High Value Farmland) as a commercial agricultural enterprise unless an exception is taken pursuant to OAR 660-04.

O. Transmission towers over 200 feet in height.

P. Operations conducted for mining, crushing, or stockpiling of aggregate and other mineral and other subsurface resources subject to ORS 215.298.

Q. Operations conducted for the exploration, mining, and processing of geothermal resources as defined by ORS 522.005 and oil and gas as defined by ORS 520.005 not otherwise permitted.

[1] Develop or Development: To bring about growth or availability; to construct or alter a structure; to conduct a mining operation; to make a physical change in the use or appearance of land; to divide land into parcels or to create or terminate rights of access.

R. Processing of aggregate into asphalt or Portland cement as defined by ORS 517.750. New uses that batch and blend mineral and aggregate into asphalt cement may not be authorized within two miles of one or more vineyards totaling 40 acres or more that are planted as of the date the application for batching and blending is filed.

S. Processing of other mineral resources and other subsurface resources.

T. Transportation facilities and improvements conditionally permitted under OAR Chapter 660, Division 12 and Division 33.

U. Parking no more than seven log trucks.

V. Filming activities subject to compliance with applicable provisions in ORS 215, OAR 660-33, and regulations adopted by the County Board of Commissioners.

W. Home Occupation to Host Weddings and Related Events, subject to Article 73[2].

X. A living history museum related to resource based activities owned and operated by a governmental agency or a local historical society, together with limited commercial activities and facilities that are directly related to the use and enjoyment of the museum and located within authentic buildings of the depicted historic period or the museum administration building, if areas other than an exclusive farm use zone cannot accommodate the museum and related activities or if the museum administration buildings and parking lot are located within one quarter mile of an urban growth boundary.[3]

X-Y. Expansion or alteration of public use airports that do not permit service to a larger class of airplanes.

[2] Hood River County Ordinance #255; adopted June 21, 2004; Effective July 22, 2004.
[3] Hood River County Ordinance #260; adopted 9-20-04; "Living History Museum"

ARTICLE 33 – AIRPORT DEVELOPMENT ZONE (AD)

Section 33.10 - Purpose and Intent

The purpose of this zone is to protect airport facilities from incompatible uses; to provide for future airport expansion; and to preserve lands adjacent to airports for future commercial and light industrial uses which will be directly dependent on air transportation.

Section 33.15 - Uses Permitted

The following uses are permitted subject to issuance of a land use permit:

A. Accepted Farming Practices; including crop dusting and associated activities, such as chemical storage.

B. Customary and usual aviation-related activities including but not limited to takeoffs, landings, aircraft hangars, tiedowns, construction and maintenance of airport facilities, fixed-base operator facilities, a residence for an airport caretaker or security officer, and other activities incidental to the normal operation of an airport. Residential, commercial, industrial, manufacturing, and other uses, except as provided in this ordinance, are not customary and usual aviation-related activities and may only be authorized pursuant to Section 33.20.

C. Air cargo terminals.

D. Aircraft and aviation recreational vehicle sales, repair, service, rental, storage and flight schools relating to aircraft and aviation recreational vehicle operations; and construction and maintenance of airport facilities on the airport property essential for the operation of airports, such as fuel storage, hanger use, fixed-base operator ~~FBO~~ offices, etc.

~~E. Air passenger terminals.~~

E. Public and semi-public buildings, structures and uses essential to the welfare of an area, such as fire stations, pump stations, and water storage.

F. Taxi and bus terminals.

G. Snack-shop for airport clientele with a total floor area of no larger than 1,000 square feet.

H. Other uses where the ongoing operations and the use must be directly dependent upon and directly associated with the Airport.

I. Emergency medical flight services; law enforcement and firefighting activities.

J. Air passenger and air freight terminals and services at levels consistent with the classifications and needs identified in the State Aviation System Plan.

K. Aviation recreation and sporting activities, as defined in Section 34.15.

L. Antique Aircraft and Automobile Museum and related uses such as food service and gift shop specifically intended to accommodate museum visitors.

33.20 - Uses Subject to a Conditional Use Permit

The following conditional uses will be permitted by the Planning Director, providing they meet all the criteria outlined in Section 33.25 and meet the requirements of Article 60:

A. Light industrial, as permitted in the M-2 zone.

B. Truck terminals.

Section 33.25 - Conditional Use Criteria

The Planning Director may grant a Conditional Use Permit for uses described in Section 33.20 if each of the below criteria is met, as determined by the Planning Director. The ongoing operations or the use must be directly dependent upon and directly associated with the airport. The use shall not ~~discharge smoke, fumes, noise, sewage or other nuisances beyond the property on which it is located.~~ create a safety hazard or otherwise ~~The use shall not~~ conflict with any present or planned ~~operations of the~~ airport uses.

Section 33.30 - Limitations of Use

In an AD zone, the following conditions shall apply.

A. Liquid and Solid Wastes:

Storage of animal, vegetable, or other wastes which attract insects, rodents, or birds or otherwise create a health hazard shall be prohibited.

B. Discharge Standards:

There shall be no emission of smoke, fly ash, dust, vapor, gases, or other forms of air pollution that may cause nuisance or injury to human, plant or animal life, or to property, or that may conflict with any present or planned operations of the airport.

C. Lighting:

1. Sign lighting and exterior lighting shall not project directly into an adjoining residential zone.

2. Unless necessary for safe and convenient air travel, sign lighting and exterior lighting shall not project directly into the runway, taxiway, or approach zone.

D. Landscaping:

1. Site plan submitted with an application for a land use permit must include a landscaping plan, which shows the location and type of plant materials.

2. New uses, which abut a residential zone, shall provide and maintain a dense evergreen landscape buffer, sight obscuring fence, or landscaped berm which attains a (mature) height of at least six (6) feet. Should evergreen landscaping be used to meet this standard, only varieties with a mature height limit less than the elevation of the imaginary airspace shall be used.

3. All unused property shall be maintained in native or existing vegetative ground cover or planted grass, shrub and barkdust, or other suitable ground cover in an uncluttered manner.

4. Responsibility for establishment and maintenance of landscaping rests with the property owner.

E. Parking:

1. Site plan(s) submitted with application for a land use permit must include a parking plan which shows the location and number of parking spaces, circulation patterns, and ingress and egress provisions.

2. All industrial uses within an Airport Development zone shall provide at least two parking spaces for every three employees on the major shift during normal season.

3. All Commercial Uses shall follow the Zoning Ordinance for the required number of parking spaces.

4. All parking lots shall have an all weather surface.

5. Adequate provisions for safe and convenient circulation, ingress, and egress shall be provided.

F. Glare and Electro-magnetic Interference:

1. Building materials shall not produce glare which may conflict with any present or planned operations of the airport.

2. No use may produce electro-magnetic interference, which may conflict, with any present or planned operation of the airport.

Section 33.35 - Dimensional Standards

A. Minimum street frontage of lots: Fifty- (50) feet.

B. Vision clearance setback from all street intersections: Thirty-five (35) feet.

C. No building shall be constructed closer to a residential or farm zone than the height of the building ~~in the AD zone~~.

D. All new buildings must be set back at least 30' from Cedar Creek.

E. Maximum height:

i. For a building or structure not equipped with a sprinkler system: Two (2) stories or 30 feet, whichever is less, ~~if not equipped with a sprinkler system~~ unless otherwise restricted pursuant to the height limitations of the Airport Height Combining Zone.

ii. For a building or structure equipped with a sprinkler system approved by the County Building Official and/or Fire Marshal: Three (3) stories or 45 feet, whichever is less, ~~if equipped with a sprinkler system approved by the County Building Official and/or Fire Marshal~~ unless otherwise restricted pursuant to the height limitations of the Airport Height Combining Zone.

iii. Unless otherwise exempt pursuant to Section 34.60(K), structures on the airport property necessary for the operation of the airport may be higher than the above height limitations, subject to submitting a FAA Form 7460-1 to and receiving approval from the Oregon Department of Aviation and Federal Aviation Administration.

ARTICLE 34 – AIRPORT HEIGHT COMBINING ZONE (AH)

Section 34.10 - Purpose and Intent

The purpose of the Airport Height Combining Zone (AH) is to protect the public's safety and welfare and to protect property adjacent to and surrounding both the Cascade Locks State Airport and the Ken Jernstedt Airfield (formerly the Hood River Airport) through the use of height restrictions and other provisions in this ordinance. The AH Zone shall regulate various types of air space obstruction and other hazards which may interfere with safe landing and taking off of aircraft including: (a) the height of structures and objects of natural growth; (b) conditions or activities which may cause electronic interference with air navigation communication systems; (c) lights which may interfere with airport lighting systems; (d) conditions or activities which produce levels of smoke, dust and glare that would interfere with safe operations; and (e) conditions or activities creating bird strike hazards. The AH Zone is an overlay zone to be used in conjunction with any base zone.

The protected airspace and Runway Protection Zone (RPZ) standards depicted in the attached exhibit entitled "Airport Zones Current and Future Conditions" (*see Appendix "C-1"*) will apply to present runway configuration until the runway shift identified in the 2009 Airport Master Plan is completed. Once the runway is shifted east, the newly located airspace and RPZ standards depicted in the exhibit as "future" will automatically apply and supersede the "current" airspace and RPZ regulations.

Section 34.15 – Definitions

A. Aircraft. Helicopters and airplanes, but not hot air balloons or ultralights.

B. Airport. The strip of land used for taking off and landing aircraft, together with all adjacent land used in connection with the aircraft landing and taking off from the strip of land, including but not limited to land used for existing airport uses.

C. Airport Imaginary Surfaces (and zones). Imaginary areas in space and on the ground that are established in relationship to the airport and its runways. The airport imaginary surfaces are defined by the Approach Surface, Transitional Surface, Horizontal Surface, Conical Surface, and Runway Protection Zone, which are described in Section 34.30 and depicted in Appendix "B-2" (Current) and B-3" (Future).

D. Airport Noise Criterion. The State criterion for airport noise is an Average Day-Night Sound Level (DNL) of 55 decibels (dBA or dB) or greater. The Airport Noise Criterion is not designed to be a standard for imposing liability or any other legal obligation except as specifically designated pursuant to OAR 340, Division 35.

E. Average Day-Night Sound Level (DNL). Average day-night sound level is the FAA standard measure for determining the cumulative exposure of individuals to noise. DNL is the equivalent of noise levels produced by an aircraft operations during a 24-hour period, with a ten-decibel penalty applied to the level measured during nighttime hours (10:00 p.m. to 7:00 a.m.).

ARTICLE 34 – AIRPORT HEIGHT COMBINING ZONE (AH)

F. Aviation Recreation and Sporting Activities. Activities, facilities, and accessory structures at airports that support recreational use of aircraft and sporting flight. Aviation recreation and sporting activities on airport property shall be subject to approval of the airport sponsor. Aviation recreation and sporting activities include but are not limited to: fly-ins; glider flights; hot air ballooning; ultralight aircraft flights; displays of aircraft; aeronautic flight skills contests; gyrocopter flights; flights carrying parachutists/skydivers; and parachute/skydiving drops onto an airport, when a minimum 10 acre drop zone, which roughly approximates a square or circle, has been secured from the airport sponsor.

G. Aviation Recreational Vehicle: A type of vehicle, other than planes or helicopters, that are primarily used or intended to be used for recreational flight. Examples of an aviation recreational vehicle include but are not limited to gliders, hot air balloons, and ultralights.

H. FAA. Federal Aviation Administration

I. FAR. Regulation issued by the FAA.

J. FAR Part 77. Regulation, Part 77, "Objects Affecting Navigable Airspace, "establishes standards for determining obstructions to navigable airspace.

K. Height. The highest point of a structure or tree, plant or other object of natural growth, measured from mean sea level.

L. Obstruction. Any structure or tree, plant or other object of natural growth that penetrates an imaginary surface.

M. Other than Utility Runway. A runway that is constructed for and intended to be used by turbine-driven aircraft or by propeller-driven aircraft exceeding 12,500 pounds gross weight.

N. Public Assembly Facility. A permanent or temporary structure or facility, place or activity where concentration of people gather in reasonably close quarters for purposes such as deliberation, education, worship, shopping, employment, entertainment, recreation, sporting events, or similar activities. Public assembly facilities include, but are not limited to, schools, churches, conference or convention facilities, employment and shopping centers, arenas, athletic fields, stadiums, clubhouses, museums, and similar facilities and places, but do not include parks, golf courses or similar facilities unless used in a manner where people are ~~or~~ concentrated in reasonably close quarters. Public assembly facilities also do not include air shows, structures or uses approved by the FAA in an adopted airport master plan, or places where people congregate for short periods of time.

O. Runway. A defined area on an airport prepared for landing and takeoff of aircraft along its length.

P. Structure. Any constructed or erected object, which requires a location on the ground or is attached to something located on the ground. Structures include but are not limited to buildings, decks, fences, signs, towers, cranes, flagpoles, antennas, smokestacks, earth formations and overhead transmission lines. Structures do not include paved areas.

Q. Visual Runway. A runway intended solely for the operation of aircraft using visual approach procedures, where no straight-in instrument approach procedures or instrument designations have been approved or planned, or are indicated on an FAA-approved airport layout plan or any other FAA planning document.

Section 34.20 - Application

The provisions of this ordinance shall apply to all lands in Hood River County under the following surfaces: (a) airport approach; (b) conical; (c) horizontal; and (d) transitional which are shown in Appendix "A", Cascade Locks State Airport Plan, Cascade Locks, Oregon (4/18/83) [1]; ~~and Appendix "B" Hood River Airport, Approach and Clear Zone Plan, Hood River, Oregon, 1977 (12/27/77)~~, and Appendix "~~C~~B" ~~Hood River~~ Ken Jernstedt Airfield Airport Master Plan Sheets 1-5, 2009 (Originals at a larger scale are available in the Hood River County Planning Department.) Dark shaded or diagonal lines and irregular bounded areas as noted in both Appendices show topography penetrating the imaginary surfaces making it difficult to apply provisions of this ordinance.

Section 34.30 - Height Limitations

No structure or tree shall be erected, altered, allowed to grow, or be maintained in the Airport Height Combining Zone to a height in excess of height limitations established by each of the following goals which underlie each designated surface as shown in Appendices "A",~~and~~ "B", and "C":

A. Primary Surface: A surface longitudinally centered on a runway. The primary surface extends 200 feet beyond each end of the runway and is 250 feet wide along each side, as measured from the centerline of the runway.

B. Approach ~~Zone~~ Surface (for Other than Utility Visual Runway): Slopes twenty (20) feet outward for each foot upward (20:1) beginning at the end of and at the same elevation as the Primary Surface and extending to a horizontal distance of 5,000 feet along the extended runway centerline.

C. Transitional ~~Zones~~ Surface: Slopes seven (7) feet outward for each foot upward (7:1) beginning at the sides of and at the same elevation as the Primary Surface and the Approach Surface and extending to a height of 150 feet above the airport

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1. Applies only to lands outside the Cascade Locks Urban Growth Boundary. It is recommended (see County Policy Document and Goal 12- Transportation) that the City of Cascade Locks update their Comprehensive Plan to apply the Airport Height Combining Zone to Cascade Locks State Airport in the UGA and designate the airport in their plan.

elevation~~, which is 301 feet above mean sea level at the Cascade Locks Airport and 780 feet at the Hood River Airport~~.

D. Horizontal ~~Zone~~ Surface: Established at 150 feet above the airport elevation or at a height of 301 feet above mean sea level at the Cascade Locks Airport and 780 feet at the ~~Hood River Airport~~ Ken Jernstedt Airfield. *(Note: The elevation of the Ken Jernstedt Airfield is subject to change should the runway shift to the east as detailed in the 2009 Airport Master Plan.)* The Horizontal ~~zone~~ Surface extends 5,000~~'~~ feet from the ~~end of the~~ center of each runway end, as shown on Appendix ~~C~~ "B-2" (current) and "B-3"(future), and begins where the Transitional Surface reaches a vertical height of 150 feet.

E. Conical ~~Zone~~ Surface: Slopes twenty (20) feet outward for each foot upward (20:1) for 4,000 feet beginning at the periphery of the Horizontal ~~zone~~ Surface and at 150 feet above the airport elevation and extending to a height of 350 feet above the airport elevation.

F. Runway Protection Zone: Extending 1,000 feet from the ends of existing and planned runway termini as shown on attached Appendix C, Sheets 1 though 3. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The inner width of the RPZ is the same as the width of the Primary Surface. The outer width of the RPZ is a function of the type of aircraft and specified approach visibility minimum associated with the runway end.

G. The Plan Diagram in the Appendices shall be utilized to assist in determining any air space obstructions.

Section 34.40 - Permitted Uses
Any permitted use in the base zone subject to compliance with the provisions of the AH Zone, including provisions in Section 34.60 below.

Section 34.50 - Uses Subject to a Conditional Use Permit
Conditional uses listed in the base zone shall be subject to compliance with provisions of the AH Zone, including provisions in Section 34.60 below.

Section 34.60 - Other Conditions to Use and Occupancy: Uses permitted in the base zone will also be governed by the following restrictions:

A. No building, pipe, chimney, tower, steeple, stand, platform, pole, wire or structure or erection or object of natural growth, or obstruction of any kind of nature whatsoever, shall be built, placed, hung, or permitted to grow or allowed to be built, placed or hung which shall at any point project into the zones as delineated in Appendices "A", "B" and "C" to this ordinance.

B. No residential development or uses that promote public gathering are permitted in the Runway Protection Zone, as detailed in Appendix C (Sheets 1 through 3)

~~(Airport Layout Plan)~~. Any residential development or uses that promote public gathering that lawfully existed as of the adoption date of this amendment (***specific date to be added here***) shall be treated as nonconforming uses, subject to the provisions of Article 65 (Nonconforming Uses).

C. No searchlight, beacon light, or other glaring light shall be used, maintained, or operated within one-half mile of said airports, so that the same shall reflect, glare, or shine upon or in the direction of said airports.

D. No glare producing materials such as unpainted metal or reflective glass shall be used on the exterior of any structure located within or below the Airport Height Combining Zone, where glare could impede a pilot's view.

E. Any electromagnetic radiation that would interfere with normal aircraft communication is prohibited.

F. Any land use or activity that produces smoke or haze to a degree that would interfere with normal aircraft operations is prohibited.

G. Any land use or activity that produces excessive bird strike hazard in the designated zones is prohibited.

H. Where a zone is covered by more than one height limitation the more restrictive shall prevail.

I. It is the applicant's responsibility to provide elevation profiles and a site plan, both drawn to scale, including the location and height of all existing and proposed structures, measured in feet above mean sea level to demonstrate compliance with the height limitations of this Article.

J. Except as provided in Subsection K, below, for areas within the airport imaginary surfaces, but outside the Approach and Transition Surfaces, where the terrain is near or higher than the airport imaginary surface elevation such that existing structures and permitted development penetrate or would penetrate the airport imaginary surfaces, structures up to 35 feet in height may be authorized subject to the following standards:

Notice to the Federal Aviation Administration (FAA) is required by Part 77 of the Federal Aviation Regulations where construction and/or alteration of structures may penetrate regulated airspace described within this Section. It is the applicant's responsibility to notify the FAA and the Oregon Department of Aviation (ODA) and secure approvals via FAA Form 7460-1. Once notification has been made, the FAA or ODA will either make a "determination of no hazard" (DNH) or require mitigation through structure relocation on the subject site, aviation safety lighting or other means. The Planning Department will require a

DNH or ensure mitigation is met as part of its approval process.

K. Pursuant to FAA Form 7460-1, FAA notification is not required for any of the following construction activities or alterations:

(1) Any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

(2) Any antenna structure of 20 feet of less in height, except one that would increase the height of another antenna structure.

(3) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device, of a type approved by the Administrator, or an appropriate military service, the location and height of which is fixed by its functional purpose.

(4) Any construction or alteration for which notice is required by any other FAA regulation.

(5) Any other construction activities or alterations deemed by FAA as exempt from notification.

L. Except as provided in Subsection 34.60(J), any person desiring to erect or increase the height of a structure causing it to penetrate into or penetrate further into the airport imaginary surface may apply for a variance, subject to the provisions of Article 66 (Variances) and the following:

(1) Prior to making application for a variance, the applicant shall submit a Form 7460-1 to and receive approval from the Oregon Department of Aviation and Federal Aviation Administration.

(2) An approved variance may be conditioned as to require the owner of the structure to install, operate, and maintain obstruction markers at the owner's expense.

(3) An approved variance may not allow a structure to exceed the height limitations prescribed in the base zone.

M. The following requirements and conditions shall apply to safety risks associated with potential bird strike hazards resulting from new water impoundments proposed in close proximity to an airport identified under ORS 836.610 (1):

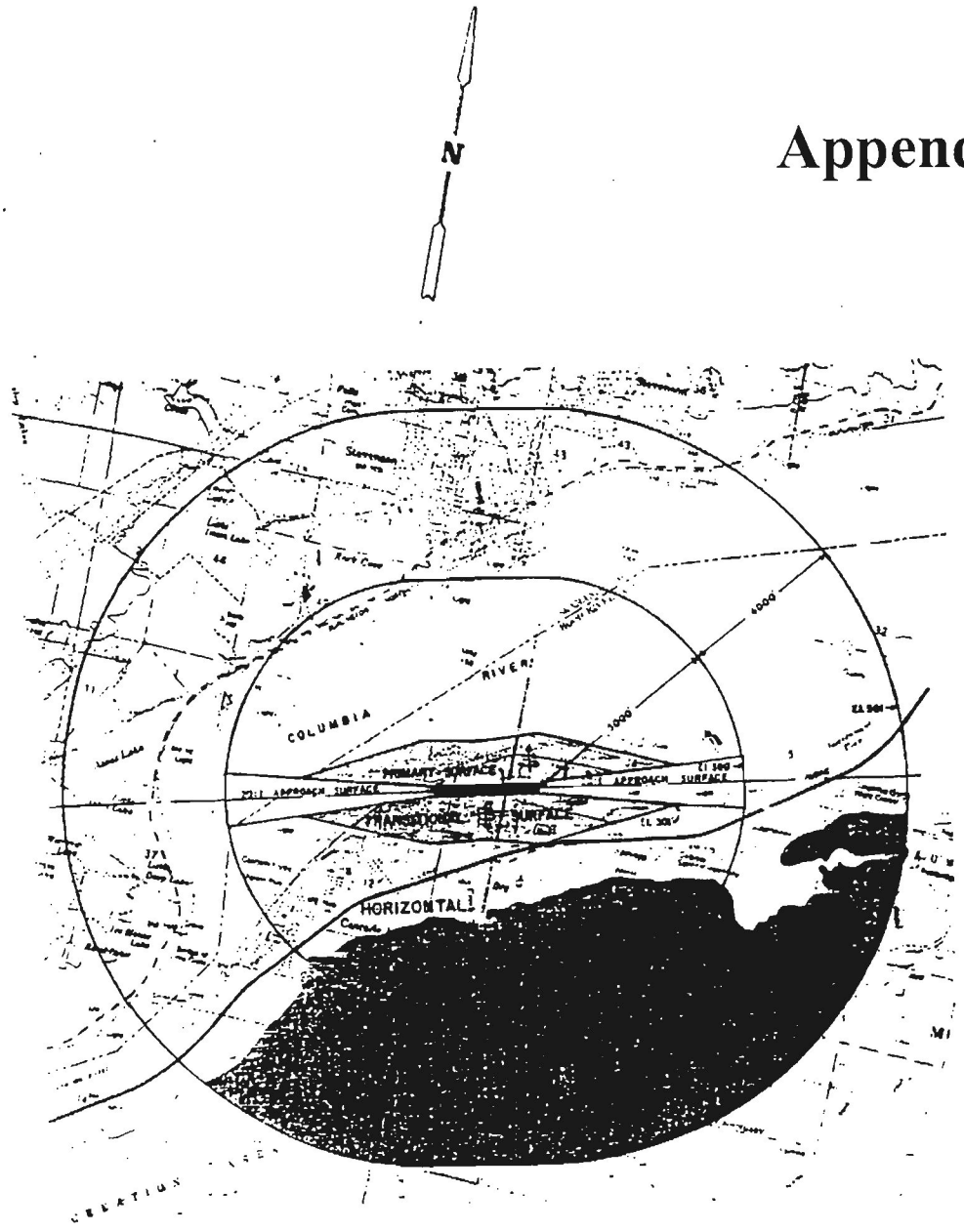
(1) No new water impoundments of one-quarter acre or larger shall be allowed:

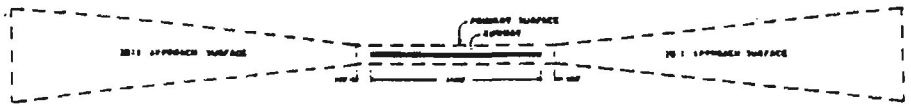
(A) Within an approach corridor and within 5,000 feet from the end of a runway; or

(B) On land owned by the airport or airport sponsor where the land is necessary for airport operations;

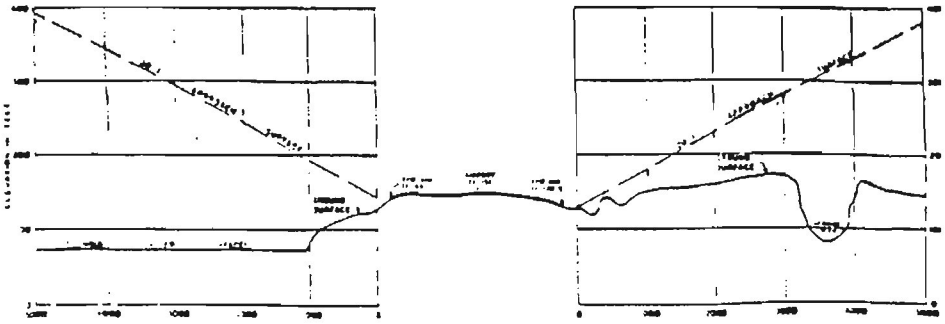
(2) Wetlands mitigation required for projects located within the areas identified in paragraphs (A) and (B) of this subsection shall be authorized where it is not practicable to provide off-site mitigation.

Appendix "A"

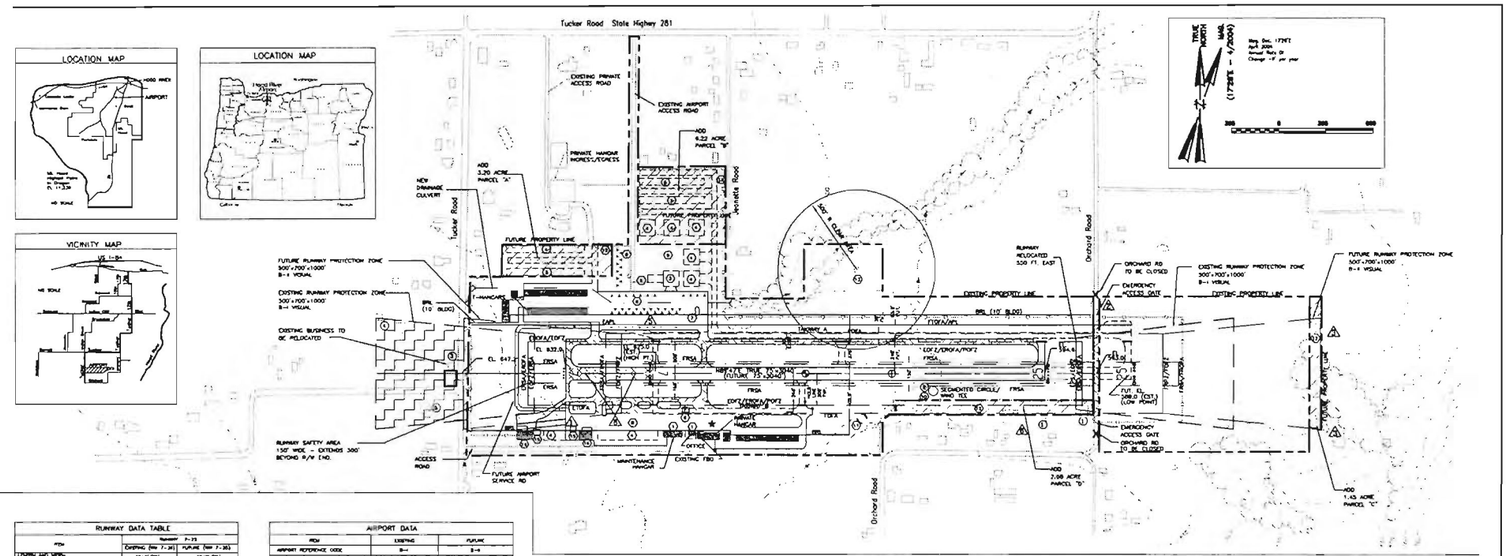




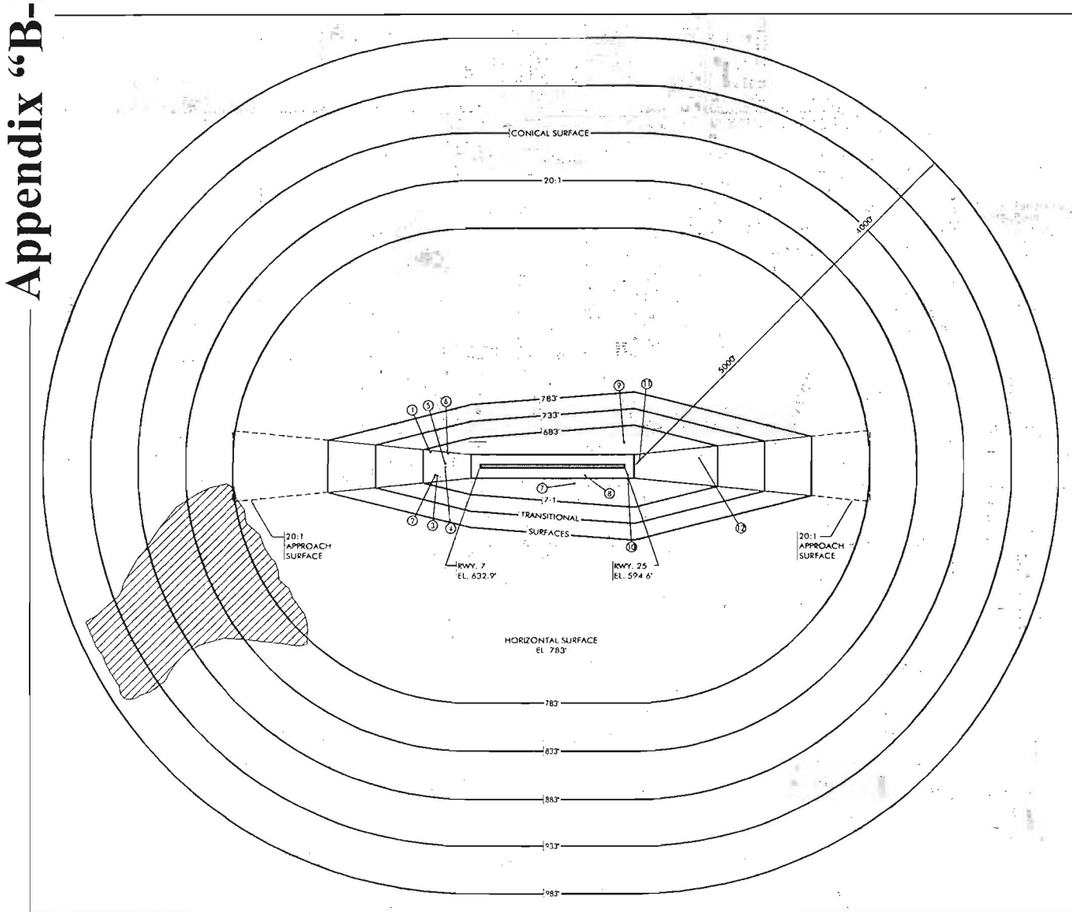
PLAN



Appendix "B-1"


Tucker Road State Highway 281
LOCATION MAP
LOCATION MAP
VICINITY MAP
TRUE NORTH
MAG. NORTH (17.5E)
Dec. 17°E
Ann. Change 0°
Change 17' per year
EXISTING PRIVATE ACCESS ROAD
EXISTING AIRPORT ACCESS ROAD
PRIVATE HANGAR STORAGE/OFFICES
400 8.22 ACRE PARCEL "B"
400 3.20 ACRE PARCEL "A"
NEW DRAINAGE CULVERT
Tucker Road
Jacobs Road
Orchard Road
FUTURE PROPERTY LINE
FUTURE RUNWAY PROTECTION ZONE 500'x700'x1000' B-I VISUAL
EXISTING RUNWAY PROTECTION ZONE 500'x700'x1000' B-I VISUAL
EXISTING BUSINESS TO BE RELOCATED
RUNWAY SAFETY AREA 150' WIDE - EXTENDS 300' BEYOND R/W END.
ACCESS ROAD
FUTURE AIRPORT SERVICE RD.
EXISTING T-HANGARS
EXISTING FBO
MAINTENANCE HANGAR
EXISTING PROPERTY LINE
RUNWAY RELOCATED 500 FT. EAST
GROUND RD TO BE CLOSED
EMERGENCY ACCESS GATE
EXISTING RUNWAY PROTECTION ZONE 500'x700'x1000' B-I VISUAL
FUTURE RUNWAY PROTECTION ZONE 500'x700'x1000' B-I VISUAL
RELOCATED WIND TEE
400 2.98 ACRE PARCEL "D"
400 1.45 ACRE PARCEL "C"
RUNWAY 7-25 7500' x 150' FUTURE 7500' x 150'
EXISTING T-HANGARS
EXISTING OFFICE
EXISTING T-HANGARS
EXISTING FBO
EXISTING MAINTENANCE HANGAR
EXISTING OFFICE
EXISTING T-HANGARS
EXISTING T-HANGARS
EXISTING T-HANGARS

Appendix "B-2"



RUNWAY OBSTRUCTION LEGEND

NO.	OBJECT	ELEV.	PENETRATION		SURFACE	ACTION
			O.C.S. (20:1)[1]	PT 77 (20:1)		
(1)	Tree	690'	5.93'	16	O.C.S. & PT77, RPZ	Relocate Runway
(2)	Tree	662'	4.75'	14.79'	O.C.S. & PT77, RPZ	Relocate Runway
(3)	TV Antenna on House	677'	0'	9.25'	O.C.S., PT77, RPZ	No Action
(4)	Snack Bar	687'	0'	7.3'	IN RPZ	Relocate RPZ & RW
(5)	Beauty Shop w/ Electrical Conduit Pole	681'	0'	1.2'	IN RPZ	Relocate RPZ & RW
(6)	Turner Rd. 647.3' + 15' (Vehicle)	647.3'	0'	0'	PT77 APPROACH & RPZ	Relocate RPZ & RW
(7)	Trees (150 L.F.)	678'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(8)	Tree	643'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(9)	Tree	680'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(10)	Trees (150 L.F.)	639.9'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(11)	Ground Rd.	593'	0'	0'	PT77, RPZ	Remove Road
(12)	Tree w/ Antenna	665'	0'	0'	O.C.S., PT77, RPZ	Monitore

O.C.S. = Obstacle Clearance Surface - See note 1; PT 77 = FAA FAR PART 77 Surface

NOTES:

1. FOR DESCRIPTION OF CLOSE-IN OBSTRUCTIONS AND OBSTRUCTION PLAN SEE RPZ PLANS AND PROFILES DRAWING (SHEET 4-5)
2. HEIGHT RESTRICTIONS ORDINANCE IN EFFECT - HOOD RIVER COUNTY ARTICLE 34.

LEGEND

TERRAIN PENETRATION OF IMAGINARY SURFACE

640' GROUND CONTOUR INTERVAL = 40'

SCALE OF FEET
HORIZONTAL SCALE: 1" = 1000'

NO	DATE	BY	APPR	REVISIONS
2	3/2005	AF	PM	ALP UPDATE
1	8/2004	AF	PM	UPDATED RUNWAY AND TAXIWAY DESIGNATION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION ADMINISTRATION APPROVAL
See approval letter dated: _____
Manager, Seattle Airports District Office

PORT OF HOOD RIVER APPROVAL
APPROVAL DATE: _____
SIGNATURE

CENTURY WEST ENGINEERING CORPORATION
6400 S.W. Macadam Lane, Suite 350
Portland, Oregon 97221
503-419-2100 phone • 503-430-27 10 fax
www.centurywest.com

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
AF	MB	DM	1" = 1,000'

DATE: MARCH 2005 (R) PROJECT: hoodriverALP2a

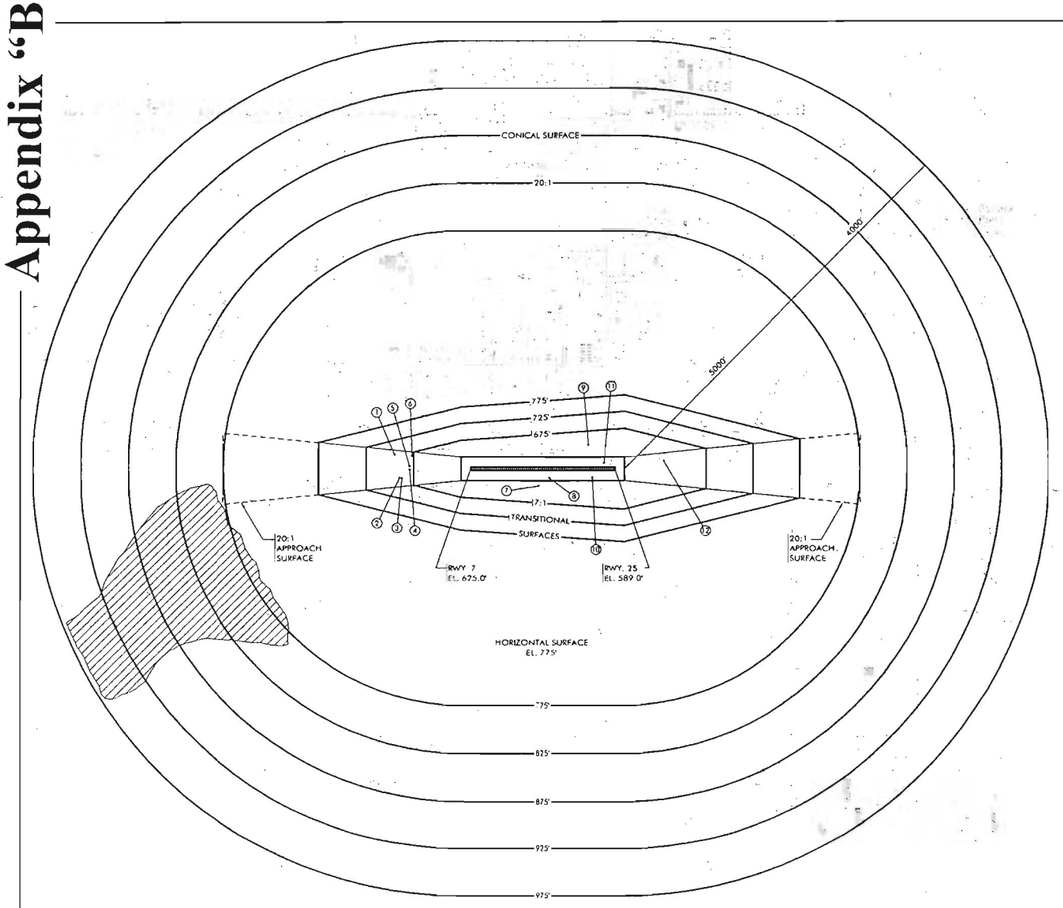
HOOD RIVER AIRPORT
AIRPORT LAYOUT PLAN UPDATE

EXISTING FAR PART 77 AIRSPACE PLAN

DRAWING NO. ALP2a

SHEET NO. 2 of 5

Appendix "B-3"



RUNWAY OBSTRUCTION LEGEND

NO.	OBJECT	ELEV.	PENETRATION Future 20:1 APPROACH	SURFACE	ACTION
(1)	Tree	590'	0'	O.C.S. & FT77	Relocate Runway
(2)	Tree	663'	0'	O.C.S. & FT77	Relocate Runway
(3)	TV Antenna on House	873'	0'	O.C.S., FT77, RPZ	No Action
(4)	Smoke Bar	827'	0'	IN RPZ	Relocate RPZ & RW
(5)	Beauty Shop w/ Electrical Conduit Pole	861'	0'	IN RPZ	Relocate RPZ & RW
(6)	Tucker Rd. 847.2' + 15' (Vehicle)	847.2'	0'	FT77 APPROACH & RPZ	Relocate RPZ & RW
(7)	Trees (150 LF.)	670'	0'	FT77 TRANSITIONAL	Top or Remove
(8)	Tree	845'	0'	FT77 TRANSITIONAL	Top or Remove
(9)	Tree	880'	0'	FT77 TRANSITIONAL	Top or Remove
(10)	Trees (150 LF.)	639.8'	0'	FT77 TRANSITIONAL	Top or Remove
(11)	Orchard Rd.	593'	0'	FT77 APPROACH	Remove Road
(12)	Tree w/ Antenna	885'	0'	O.C.S., FT77, RPZ	Relocate

O.C.S. = Obstacle Clearance Surface - See note 1. FT 77 = FAR FAR PART 77 Surface

NOTES:

1. FOR DESCRIPTION OF CLOSE-IN OBSTRUCTIONS AND OBSTRUCTION PLAN SEE RPZ PLANS AND PROFILES DRAWING (SHEET 4-5)
2. HEIGHT RESTRICTIONS ORDINANCE IN EFFECT - HOOD RIVER COUNTY ARTICLE 34.

LEGEND

TERRAIN PENETRATION OF IMAGINARY SURFACE

640' GROUND CONTOUR INTERVAL = 40'

Mag. Dec. 17.75°E
April 2004
Annual Rate Of Change -0° 6' per year

SCALE OF FEET
HORIZONTAL SCALE: 1" = 1000'

NO.	DATE	BY	APPR.	REVISIONS
2	9/2005	AF	JM	ALP UPDATE
1	8/2005	AF	JM	UPDATED RUNWAY ALP & SUBMISSION

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. 0" 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION ADMINISTRATION APPROVAL

See approval letter dated: _____

_____
Manager, Seattle Airports District Office

PORT OF HOOD RIVER APPROVAL

APPROVAL DATE: _____

_____
SIGNATURE

CENTURY WEST
A TRC COMPANY
2020 SW. Fourth Ave., Suite 300
Portland, Oregon 97201
503-419-2130 phone • 503-439-7710 fax
www.centurywest.com

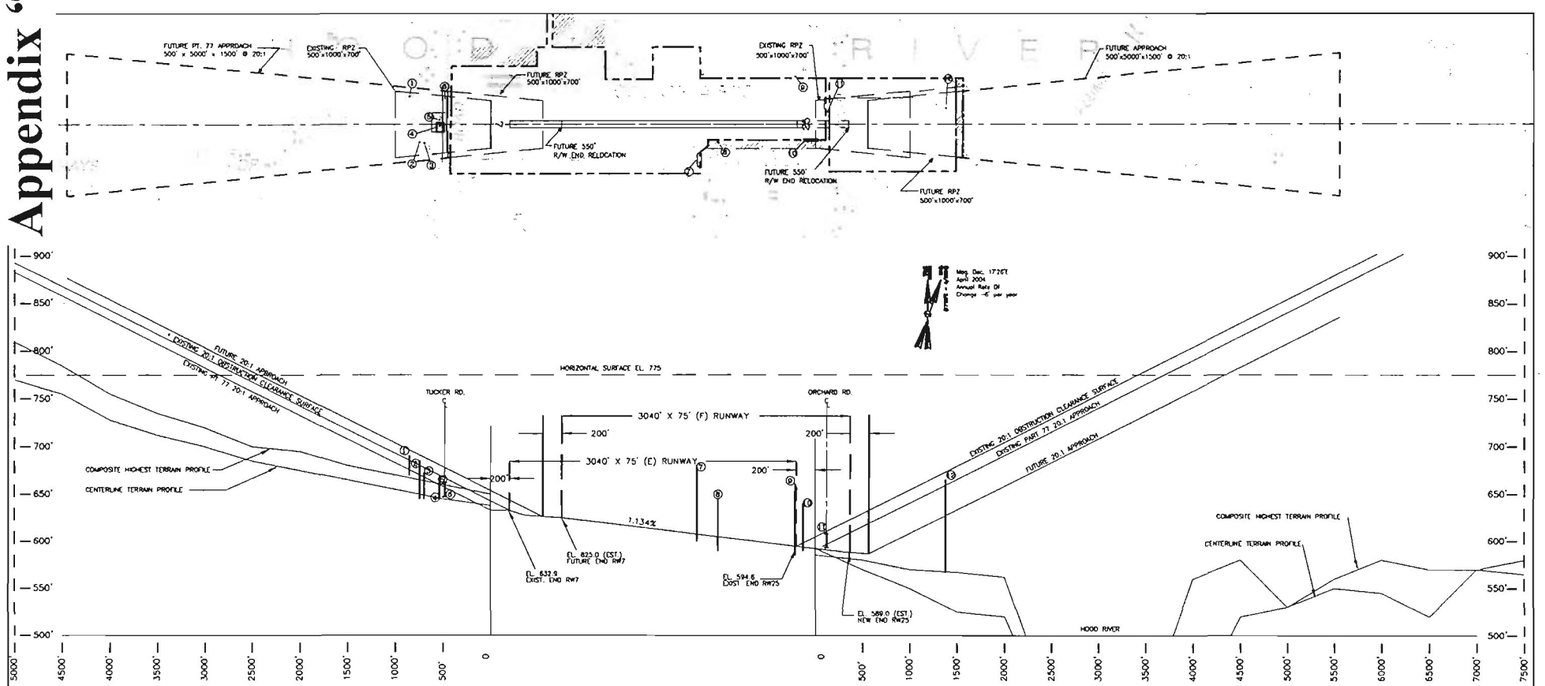
DESIGNED BY: AF | DRAWN BY: MB | CHECKED BY: DM | SCALE: 1" = 1,000'
DATE: MARCH 2005 (R) | PROJECT: hoodriverALP2b

HOOD RIVER AIRPORT
AIRPORT LAYOUT PLAN UPDATE

FUTURE FAR PART 77
AIRSPACE PLAN

DRAWING NO. ALP2b
SHEET NO. 3 of 5

Appendix "B-4"



APPROACH PROFILE RUNWAY 7 – 25

SCALE OF FEET
HORIZONTAL SCALE: 1" = 500'

SCALE OF FEET
VERTICAL SCALE: 1" = 50'

LEGEND

EXISTING AIRPORT BOUNDARY

FUTURE LAND ACQUISITION

NOTES:

ELEVATIONS WERE TAKEN FROM THE 1977 APPROACH & CLEAR ZONE PLAN DONE BY CENTURY WEST ENGINEERING CORP. AS WELL AS WAH PACIFIC DATA FROM 1990. NO FORMAL SURVEY WAS CONDUCTED TO ASCERTAIN EXACT ELEVATIONS OF OBSTRUCTIONS. ALL ELEVATIONS ARE IN FEET ABOVE THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

1. EXISTING 20:1 OBSTACLE CLEARANCE SURFACE (O.C.S.) TO 3040' LONG RUNWAY ARE CLEAR PER FAA ADVISORY CIRCULAR 150-5300-13 CHAPTER 1 APPENDIX 2, APPROACH FOR RUNWAY SERVING SMALL AIRPLANES WITH APPROACH SPEEDS OF 50 KNOTS OR MORE (FIGURE A2-1).
2. EXISTING PART 77 APPROACH TO RUNWAY 7 IS OBSTRUCTED BY TUCKER ROAD. RUNWAY BEING RELOCATED 350' EAST TO CORRECT THIS AND REMOVE ROAD FROM RPZ.
3. EXISTING PART 77 APPROACH TO RUNWAY 25 (3040' LONG RWY.) IS OBSTRUCTED BY ORCHARD ROAD. ROAD OBSTRUCTION TO REMAIN UNTIL THE RUNWAY END IS RELOCATED.
4. NO ACTION RECOMMENDED AT THIS TIME. PENETRATION OF ANTENNA IS 4' AND IS AT THE EDGE OF THE 20:1 APPROACH SURFACE.

NO.	DATE	BY	APPR	REVISIONS
2	3-2005	AS	MB	ALP UPDATE
1	11-2004	MB	AS	UPDATED RUNWAY 7 APP & RUNWAY 25 DEPARTURE

RUNWAY OBSTRUCTION LECEND

NO.	OBJECT	ELEV	PENETRATION Existing O.C.S. (20:1)	PENETRATION Existing PT 77 (20:1)	PENETRATION Future 20:1 APPROACH	SURFACE	ACTION
(1)	Tree	890'	5.85'	15'	0'	O.C.S. & PT77	Relocate Runway
(2)	Tree	880'	4.75'	14.75'	0'	O.C.S. & PT77	Relocate Runway
(3)	TV Antenna on House	878'	8'	4.25'	0'	O.C.S., PT77, RPZ	No Action
(4)	Sheds 'Bo'	867'	0'	7.3'	0'	'B' RPZ	Relocate RPZ & Rd
(5)	Sheeuty Shop w/ Electrical Conduit Pole	861'	0'	1.7'	0'	'B' RPZ	Relocate RPZ & Rd
(6)	Tucker Rd. 843.2 + 15' (Varies)	843.2'	0'	0'	0'	PT77 APPROACH & RPZ	Relocate RPZ & Rd
(7)	Trees (150 L.F.)	878'	0'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(8)	Tree	845'	0'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(9)	Tree	880'	0'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(10)	Trees (150 L.F.)	839.8'	0'	0'	0'	PT77 TRANSITIONAL	Top or Remove
(11)	Orchard Rd.	563'	0'	0'	0'	PT77 APPROACH	Remove, Fixed
(12)	Tree w/ Antenna	845'	0'	0'	0'	O.C.S., PT77, RPZ	Relocate

O.C.S. = Obstacle Clearance Surface - See note 1. PT 77 = FAA FAR PART 77 Surface

THIS DRAWING IS THE PROPERTY OF CENTURY WEST ENGINEERING CORPORATION AND IS NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OTHER THAN THE EXISTING AIRPORT IMPROVEMENT PROJECT FOR WHICH IT WAS PREPARED UNLESS AUTHORIZED BY CENTURY WEST ENGINEERING CORPORATION. ANY UNAUTHORIZED USE OF THIS DRAWING SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO CENTURY WEST ENGINEERING CORPORATION. THE USER OF THIS DRAWING FOR ANY UNAUTHORIZED USE AGREES TO INDEMNIFY AND HOLD HARMLESS CENTURY WEST ENGINEERING CORPORATION FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM. ANY MODIFICATIONS MADE TO THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF CENTURY WEST ENGINEERING CORPORATION SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO CENTURY WEST ENGINEERING CORPORATION.

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FEDERAL AVIATION ADMINISTRATION APPROVAL

See approval letter dated: _____

Manager, Seattle Airports District Office

PORT OF HOOD RIVER APPROVAL

APPROVAL DATE: _____

SIGNATURE

CENTURY WEST ENGINEERING CORPORATION
9600 S.W. Nimbus Ave., Suite 100
Tigard, Oregon 97223
Phone: (503) 620-2700 • Fax: (503) 620-2710
www.centurywest.com

DESIGNED BY: AF | DRAWN BY: MB | CHECKED BY: DM | SCALE: 1" = 500'
DATE: MARCH 2005 (R) | PROJECT: hoodriverALP2c

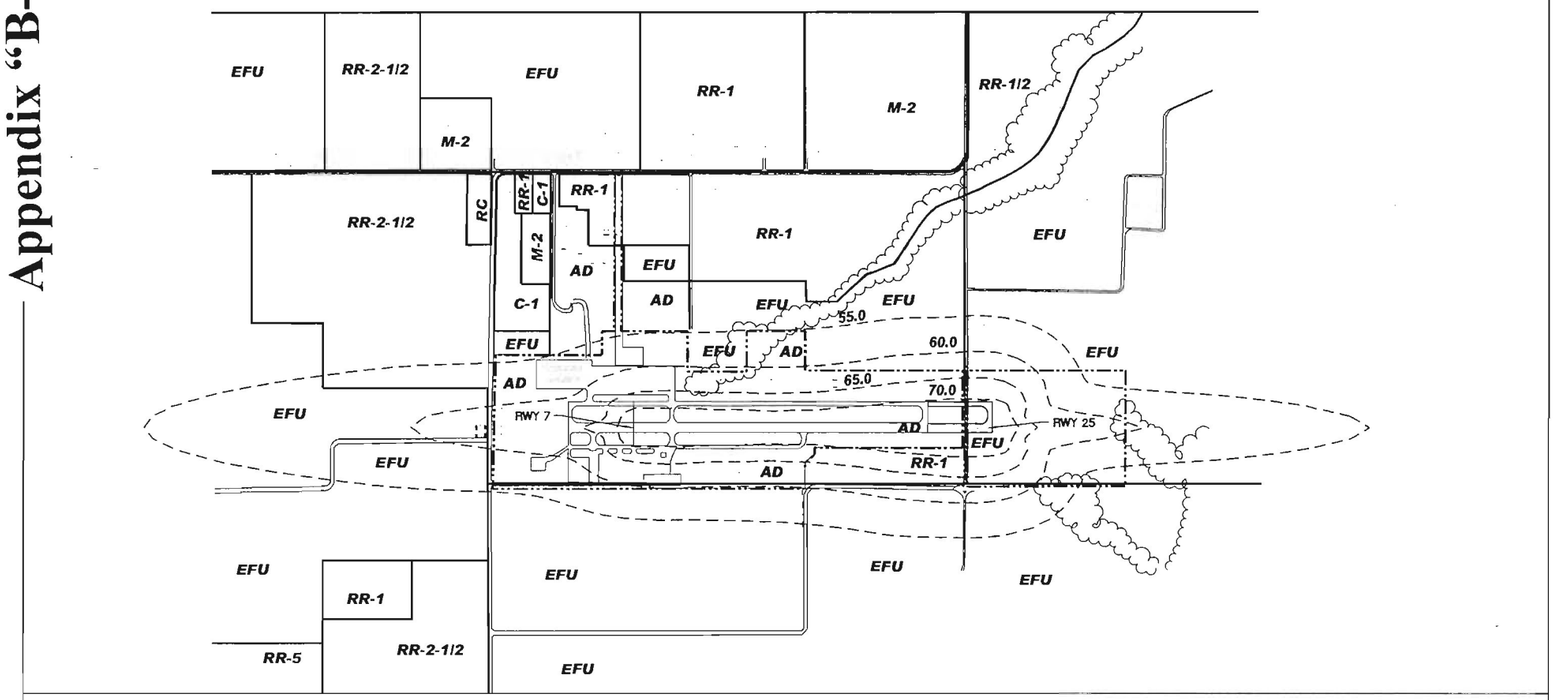
HOOD RIVER AIRPORT
AIRPORT LAYOUT PLAN UPDATE

RPZ AND INNER APPROACH PLAN & PROFILE

DRAWING NO. ALP2c

SHEET NO. 4 of 5

Appendix "B-5"



NOTE
1. PART 77 SURFACES PROTECTED BY COUNTY ZONING ORDINANCE.

LEGEND	
AD	AIRPORT DEVELOPMENT
AH	AIRPORT HEIGHT ZONE
EFU	EXCLUSIVE FARM USE
M-2	LIGHT INDUSTRIAL
RR-ϕ	RURAL RESIDENTIAL (ϕ DESIGNATES MIN. LOT SIZE, EXCEPT FOR RR-1, WHICH IS ACTUALLY SUBJECT TO A 2.00 ACRE MIN.)
RC	RURAL CENTER

Mag. Dec. 17.26°E
April 2004
Annual Rate Of
Change: 0° per year

SCALE OF FEET
HORIZONTAL SCALE 1" = 400'

NO.	DATE	BY	APPR.	REVISIONS
1	6/2005	JG	AF	ALP3 UPDATE
0	6/2004	AF	AF	UPDATE ALP 2 & ALP3

VERIFY SCALES
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0" 1"
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FEDERAL AVIATION ADMINISTRATION APPROVAL

See approval letter dated: _____

_____
Manager, Seattle Airports District Office

PORT OF HOOD RIVER APPROVAL

APPROVAL DATE: _____

_____
SIGNATURE

CENTURY WEST
PROFESSIONAL CORPORATION
Portland, Oregon 97225
www.centurywest.com

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
AF	MB	DM	1" = 400'

DATE: MARCH 2005 (R)
PROJECT: hoodriverALP3

HOOD RIVER AIRPORT
AIRPORT LAYOUT PLAN UPDATE

AIRPORT LANDUSE PLAN WITH 2022 NOISE CONTOURS

DRAWING NO. ALP3
SHEET NO. 5 of 5

APPENDIX C-1

AIRPORT ZONES Current and Future Conditions

2009 Current Condition

- Airport Height Zone Overlay
- Runway Protection Zone (RPZ)

Future Condition (with runway shift)

- Airport Height Zone Overlay
- Runway Protection Zone (RPZ)

- Port Ownership
- Taxlots
- Assessor's Map Index

N

0 0.5 1

Miles

Projection: NAD83 HARN StatePlane Oregon North

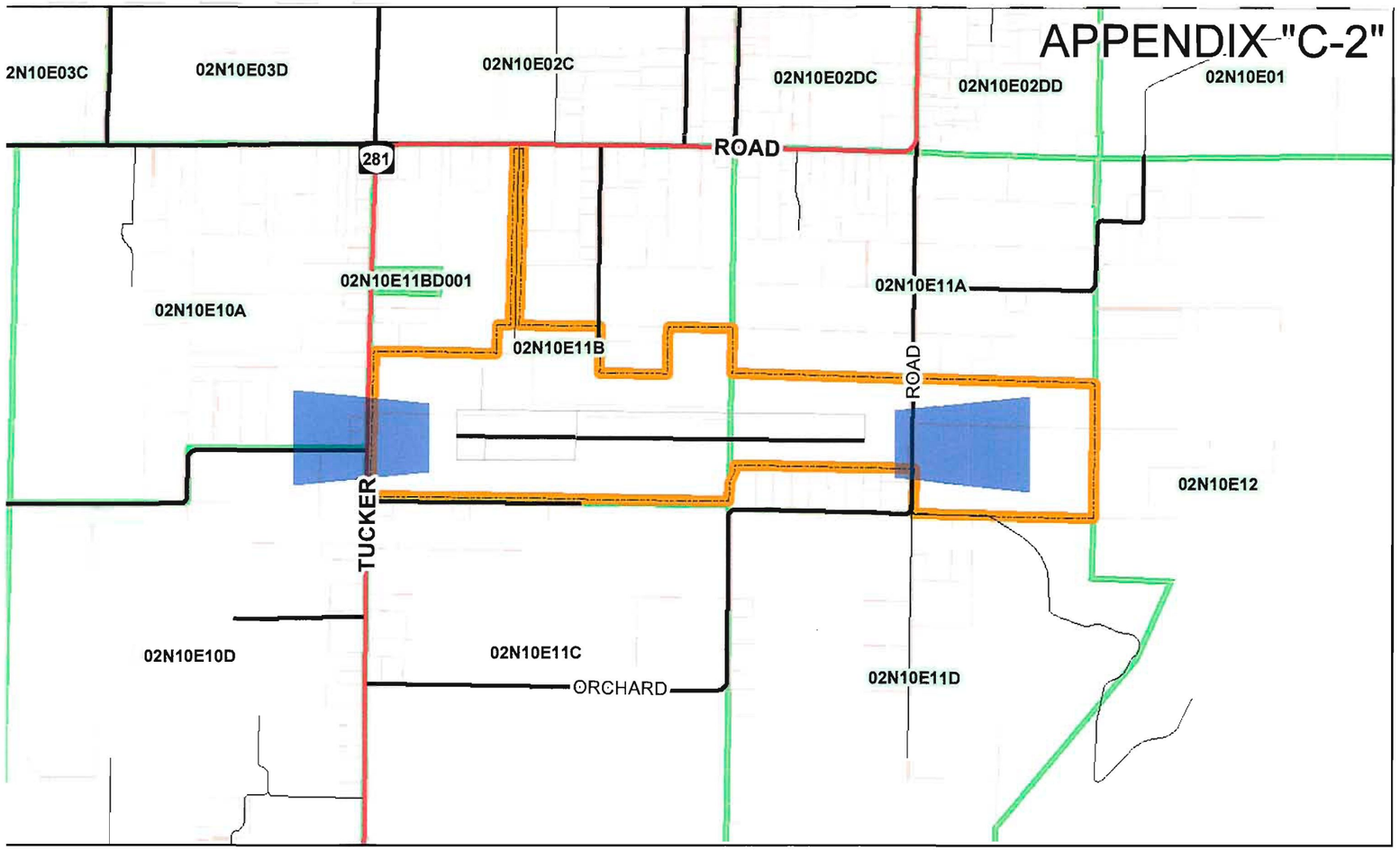
DISCLAIMER: This map product was prepared by Hood River County and is for informational purposes only. It may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Questions pertaining to this map should be directed to the Hood River County GIS Coordinator: (541) 386-2616

APRIL 2009

)72_AirportReZone

APPENDIX "C-2"



RUNWAY PROTECTION ZONE

2009 CURRENT CONDITION

ion: NAD83 HARN StatePlane Oregon North

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ons pertaining to this map should be directed to the Hood River GIS Coordinator: (541) 386-2616

Runway Protection Zone (RPZ)

Port Ownership

Taxlots

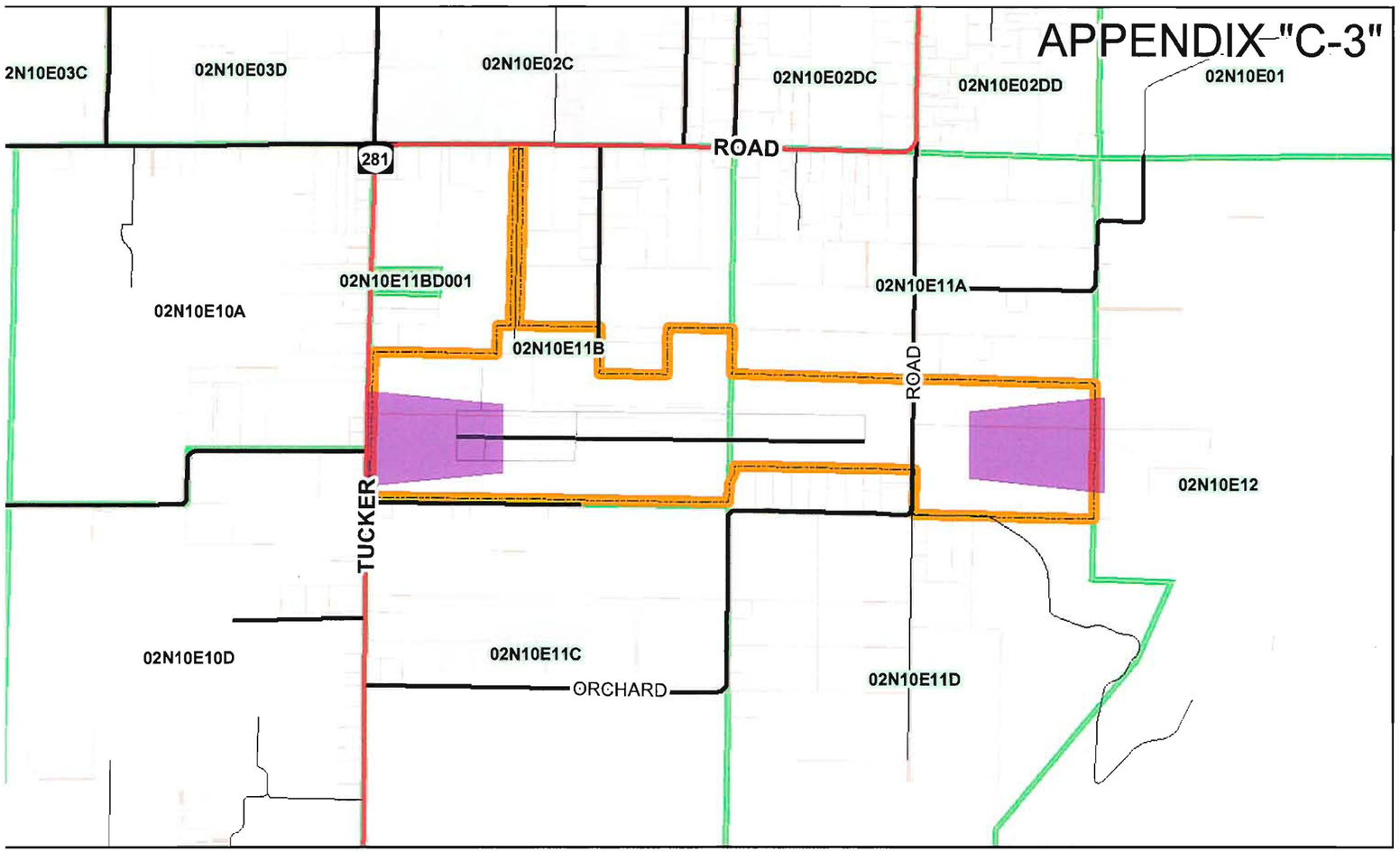
N

0 500 1,000

Feet

APRIL 2009

APPENDIX "C-3"



RUNWAY PROTECTION ZONE
FUTURE CONDITION (WITH RUNWAY SHIFT)

Runway Protection Zone (RPZ)

Port Ownership

Taxlots

0 500 1,000
Feet

lon: NAD83 HARN StatePlane Oregon North

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ons pertaining to this map should be directed to the Hood River GIS Coordinator: (541) 386-2616

APRIL 2000

PROPOSED ARTICLE 37 – AIRPORT NOISE OVERLAY ZONE (AN)

Section 37.10 – Purpose and Intent
The AN overlay zone is intended to be applied to lands within and adjacent to the Ken Jernstedt Airfield that are located in areas of 65 and greater Noise Decibel Levels (NDL), as depicted in Appendix "A" of this Article. The purpose of this zone is to implement OAR-660-013-0080 (1)(b) and to apply Noise Level Reduction (NLR) standards required by the Oregon Airport Planning Rule.

Section 37.20 – AN Zoning on Official Zoning Map
Lands zoned AN on the official zoning map are those lands located on and adjoining the airport and shown on the Airport Master Plan to have Airport Noise Contours at 65 dB (DNL) and greater. Existing dwellings and other uses otherwise prohibited in the AN zone are not subject to the provisions of Article 65, Non-Conforming Uses.

Section 37.30 – Uses Permitted Outright or Conditionally
The AN overlay zone will have no impact on uses allowed outright or conditionally in the underlying base zone, but may require additional construction standards as outlined in Article 37.50 below.

Section 37.40 – Prohibited Uses
The following uses are specifically prohibited within the AN zone:

1. New dwellings, except as otherwise allowed in Section 37.50 ~~(1)~~ (2).

2. New schools, except for flight schools located on airport property.

3. Outdoor music shells, amphitheatres.

4. Nature exhibits and zoos.

Section 37.50 – Limitations on Use
All proposed residential (habitable structures) and other allowed uses occurring within the 65 dB Airport Noise Contour must meet the following noise mitigation provisions:

1. Minimum Construction Standards: Except as provided in Subsection 5, below, noise mitigation is required for new construction located within the 65 dB contour. Typical home construction provides 20 dB indoors assuming vents and windows are closed. New residential construction and replacement dwellings require the applicant use building techniques (wall and window materials, insulating qualities, etc.) shown to enhance the indoor noise level to a range of 25 dB to 30 dB; or exceed standard construction indoor noise reduction by 5 dB to 10 dB as determined by the Building Official. This may require a qualified professional to design the structure, and may require a third party test to ensure that the structure was built to meet noise reduction standards prior to occupancy.

2. Replacement Dwellings. Where an existing dwelling is located entirely outside, partially inside and partially outside, or entirely inside the 65 dB contour, the replacement dwelling may only be allowed to expand into or further into the 65 dB if the noise level reduction standards described in Subsection 1 above are achieved and one of the following is met:

   a. No more than 25 percent of habitable floor area of the existing dwelling is allowed to penetrate into or further into the 65 dB contour; or

   b. More than 25 percent of the habitable floor area of the existing dwelling is allowed to penetrate into or further into the 65 dB contour with an approved variance (Article 66) and justification that shows special conditions or physical limitations on the site make the proposal the most feasible option.

3. Existing Dwellings. Where an existing dwelling is located entirely outside, partially inside and partially outside, or entirely inside the 65 dB contour, the existing dwelling may only be allowed to expand into or further into the 65 dB contour area if the noise level reduction standards described in Subsection 1 above are achieved and one of the following are met:

   a. No more than 25 percent of habitable floor area of the existing dwelling is allowed to penetrate into or further into the 65 dB contour; or

   b. More than 25% of the habitable floor area of the existing dwelling is allowed to penetrate into or further into the 65 dB contour with an approved variance (Article 66) and justification that shows special conditions or physical limitations on the site make the proposal the most feasible option.

4. Additions and Alterations. Where existing construction is altered or additions are proposed, all newly constructed portions of dwellings within the 65 dB contour shall meet the 25 to 30 dB standard, while all remaining unaltered portions of the dwelling are exempt.

5. Exemptions. Non-habitable structures, such as garages and outbuildings, as well as minor repairs to existing dwellings (e.g. broken windows or roof repairs) are exempt from the noise level reduction standards.

6. Non-Residential Uses. Additional uses that are consistent with the base zone may be permitted with limitations as outlined in the Noise Compatibility Table 37.1 below, which was adapted from Exhibit 5 of OAR 660-013, Airport Planning Rule.

PROPOSED ARTICLE 37 – AIRPORT NOISE OVERLAY ZONE (AN)

Noise Compatibility Table 37.1		
Land Use	**Yearly Day-Night Sound Levels (DNL) in Decibels**	
Residential	65-70	70-75
Residential Dwellings	N[1]	N[1]
Mobile Homes	N	N
Transient Lodging (motels and hotels)	N[1]	N[1]
Public Use		
Schools	N[1]	N[1]
Churches, auditoriums, concert halls, hospitals, nursing homes	25	30
Government Services	Y	25
Transportation/Parking	Y	Y[2]
Commercial		
Offices-business and professional	Y	25
Wholesale/retail-materials, hardware and farm equipment	Y	Y[2]
Retail trade-general	Y	25
Utilities	Y	Y[2]
Communications	Y	25
Manufacturing		
Manufacturing-general	Y	Y[2]
Photographic and optical	Y	25
Agriculture (except livestock) and forestry	Y[4]	Y[5]
Livestock farming and breeding	Y[4]	Y[5]
Mining and fishing, resource production and extraction	Y	Y
Recreation		
Outdoor sports arenas/spectator sports	Y[3]	Y[3]
Outdoor music shells, amphitheatres	N	N
Nature exhibits and zoos	N	N
Amusement parks, resorts, camps	Y	Y
Golf courses, riding stables, water recreation	Y	25

Key:

Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
DNL	Average Day-Night Sound Level
25, 35	Land Use and related structures generally compatible; measures to achieve NLR of 25 or 30 dB must be incorporated into design and construction of structure.

PROPOSED ARTICLE 37 – AIRPORT NOISE OVERLAY ZONE (AN)

Table 37.1 Notes:

1. Where a community determined that residential or school uses must be allowed, measures to achieve an outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. The use of NLR criteria will not, however, eliminate outdoor noise problems.

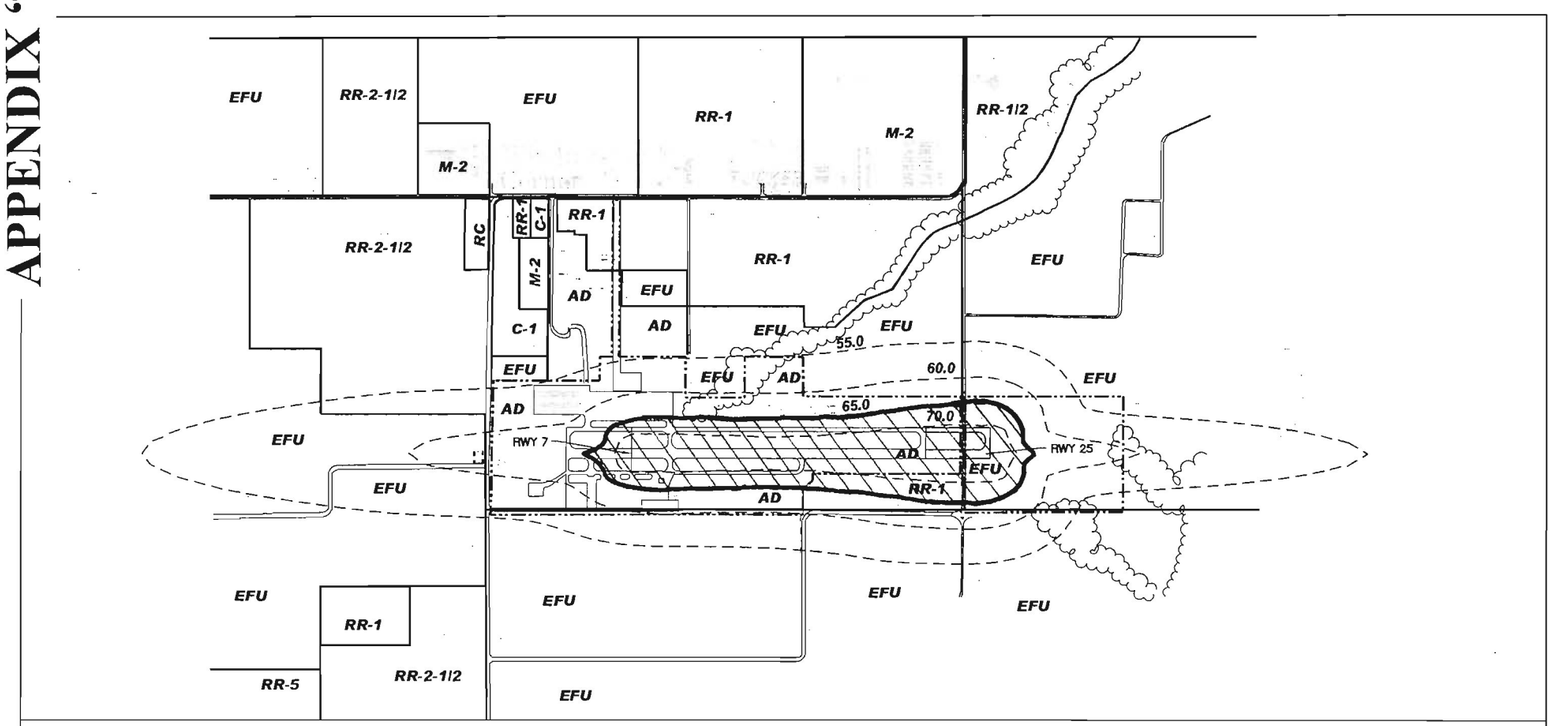
2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Land use compatible provided special sound reinforcement systems are installed.

4. Residential Buildings require an NLR of 25 dB.

5. Residential Buildings require an NLR of 30 dB.

APPENDIX "A"



NOTE
1. PART 77 SURFACES PROTECTED BY COUNTY ZONING ORDINANCE.

LEGEND	
AD	AIRPORT DEVELOPMENT
AH	AIRPORT HEIGHT ZONE
EFU	EXCLUSIVE FARM USE
M-2	LIGHT INDUSTRIAL
RR-#	RURAL RESIDENTIAL (# DESIGNATES MIN. LOT SIZE, EXCEPT FOR RR-1, WHICH IS ACTUALLY SUBJECT TO A 2.00 ACRE MIN.)
RC	RURAL CENTER

Mag Dec. 17.25°E
April 2004
Annual Rate Of Change: +.8° per year

SCALE OF FEET
HORIZONTAL SCALE: 1" = 400'

NO.	DATE	BY	APPR	REVISIONS
2	9.2004	JS	JM	ALP3 UPDATE
1	8.2004	JM	JM	UPDATED TO LATEST AIRPORT SURVEY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

FEDERAL AVIATION ADMINISTRATION APPROVAL
See approval letter dated: _____
Manager, Seattle Airports District Office

PORT OF HOOD RIVER APPROVAL
APPROVAL DATE: _____
SIGNATURE

CENTURY WEST ENGINEERING CORPORATION
9600 S.W. Nimbus Ave., Suite 190
Portland, Oregon 97223
phone • 503-639-2210 fax
www.centurywest.com

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SCALE:
AF	MB	DM	1" = 400'
DATE: MARCH 2005 (R)		PROJECT: hoodriverALP3	

HOOD RIVER AIRPORT
AIRPORT LAYOUT PLAN UPDATE

AIRPORT LANDUSE PLAN WITH 2022 NOISE CONTOURS

DRAWING NO. ALP3

SHEET NO. 5 of 5

Ken Jernstedt Airfield Airport Master Plan 2009 Update

Written Comments Received

Hood River County Planning & Building Services
601 State Street, Hood River OR 97031

MICHAEL BENEDICT, DIRECTOR
(541) 387-6840 • FAX (541) 387-6873
E-mail: plan.dept@co.hood-river.or.us

DEAN A. NYGAARD, BUILDING OFFICIAL
(541) 386-1306 • FAX (541) 387-6878
E-mail: building@co.hood-river.or.us

Hood River Airport Master Plan

Preapplication Conference Summary

1:30PM Thursday, August 21, 2008, Hood River County, 601 State Street, Hood River

Attendees:

Dennis Kindig, Flightline Services	flight@gorge.net
Jeremy Young, Airport Committee	jeremy@waaamuseum.org
Rick Brock, Farmers Irrigation	rick@fidhr.org
Mike Doke, Port of Hood River	mdoke@portofhoodriver.com
Michael McElwee, Port of Hood River	mmcelwee@portofhoodriver.org
Eric Walker, Hood River County	eric.walker@co.hood-river.or.us
Mike Benedict, Hood River County	mike.benedict@co.hood-river.or.us
Scott Keillor, Columbia Planning	scott@columbiaplanning.com

Applicant: Port of Hood River

Request: Adoption of Ken Jernstedt Airfield Airport Master Plan

Introductions
Self Introductions were made. Eric Walker then asked Mike Doke to give an overview of the proposal.

Overview
Mike Doke said the proposal was for adoption of the airport master plan layout plan, which had been approved by the Airport Advisory Committee, the Port and the FAA on completion in 2004. He asked if there was a prior County approved master plan, but Eric Walker said it was a bit unclear if a plan had been approved in the 1970's or simply referenced in the County's Comprehensive Plan. It would be preferable to simply present this as a new master plan adoption, rather than an update simply because the prior record of adoption is unclear. Mr. Doke said the plan is revisited every 10 years and projects needs for 20 years. The plan being considered for adoption is the 2004 to 2024 layout (or master) plan prepared by Century West Engineers.

Mike Doke indicated the primary purposes of the plan are safety, facilities planning and longevity for the airport. He also indicated the plan is required to continue to receive airport funding. The proposed physical upgrades in the plan take care of some deficiencies that allow the airport's reference code to change from a B-1 to a B-2 status – this essentially allows slightly wider wing spans to land. The upgrades do not invite larger aircraft, which have to use The Dalles/Columbia River Gorge Regional Airport.

Primary master plan components and purposes include:

1. Improved taxiway separation from the runway, shifting taxiway north about 25' to improve reference code to B-2 and allow wider wing spans.
2. A shift in the runway 550' east away from Tucker Road/Highway 281 to improve safety. This necessitates a vacation of Orchard Road to accommodate the runway.
3. Relocating Fixed Base Operator (FBO) building, fueling and future facilities from the south side to the north side of the airport. This enhances safety because planes do not have to cross from the taxiway across the runway to fuel.
4. A new grass runway between the existing runway and the taxiway for historic planes that have no tail landing gear. This is needed for to avoid damage to old "tail draggers" not equipped for asphalt runways.

Mike Doke said the planned 20 year use of the airport is much the same as the past 20 years, in that they will continue to serve small planes and historic planes. There is no plan to expand the airport to accommodate larger planes. In response to a question, Mr. Doke indicated that small jets are getting lighter and landing on smaller runways, but often require greater pavement loads (thickness) than the Hood River Airport offers. In addition, the next step in required runway length would be 4,000', which is not achievable for the airport. Note that the "shift" in the runway 550' east result in the same roughly 3,000' runway but the old western extreme will be stripped out with chevrons (paint). Even with an emergency length of 3,500', this is not an expansion and will not handle larger planes. The Dallesport Airport has a 5,000' runway for larger planes.

Mike Benedict asked what the impact of non-adoption would be. Mike Doke said that they would still receive FAA funding, but the runway shift would be delayed until adoption, and that state funds and other pots of money would be foregone. Michael McElwee indicated he thought the actual Orchard Road vacation could proceed without adoption, but it makes sense to adopt the plan upfront to clear the path for funding and construction of the runway shift. The adoption package includes a Comprehensive Plan Amendment and Zone Change from EFU, farm land to AD, Airport Development to allow the runway east of Orchard Road.

Jeremy Young said that the safety concern is real. All of the pilots using the airport and the Airport Committee believe it is just a matter of time before a serious accident occurs. This is due to a "downdraft" or air "sink hole" for approaching westbound planes that has induced landings prior to and across Orchard Road. Dennis Kindig said for the eastbound approach, the pilot's descend (elevation drops from west to east toward the Hood River) and have an optical illusion of being too low. For transient pilots (newcomers), this often means a late touchdown on the runway and potential overruns into Orchard Road.

Mr. Doke again summarized the main three purposes of the master plan: safety, which is the highest priority; facilities planning; and the long term viability of the airport.

Agency Comments

ODOT. Michael McElwee referenced the email from ODOT regarding potential for a traffic study. Mr. Walker responded that ODOT is concerned for impacts to the state system (Highway 281) based on growth that might occur with a rezone from EFU to AD for the 30 or so acres east of Orchard Road. Scott Keillor indicated that the newly zoned area would not be used for anything but a runway shift, and so no new traffic impacts are presented. Eric indicated that this could be handled by a condition requiring no further use of the rezone area, but that rezones are not typically given such conditions. It was generally agreed that if there was a major problem in the preferred rezoning

strategy, that the Port may be able to accomplish adoption without a rezone. However, it is in the Port's best interest to rezone the eastern portion of the site with plan adoption to keep its master plan area and use clear. This means having to deal with the State Transportation Planning Rule and dealing with compatibility with farm use.

Mike Doke said there would be some loss of orchard trees to clear for the runway and immediate approach zone.

Rick Brock indicated that any areas that are developed will lose their water rights. After discussion, it became evident that the new taxiway would replace the old one and in removing it, the water rights would credit and be retained. In general, the determination on net balance of pervious area and hence, water rights impacts will be determined at the time a building permit is presented.

Mr. Brock also indicated that a Farmers has 10" line on the east, crossing to the west side of Orchard Road moving from south to north in the vacation area. There was no clear answer on whether the present depth of cover would allow the pipe to remain, but it was generally considered possible with an easement. The question of how the airport would deal with a repair in the runway easement area was answered by Dennis. The FBO can put our bulletins and answering machine messages – which pilots check regularly – to inform of any temporary repair closures.

Scott Keillor asked if the Fire Department or the Public Works Director have concerns about vacating Orchard Road. Jeremy Young said he spoke to Jim Trammel, West Side Fire, and Jim had studied response times. There is minimal impact and no concern from West Side, but will need to be confirmed. Also, Mr. Young said the neighbors had all signed a petition in support of the vacation. Eric Walker said that he had not yet received input from Don Wiley, County Engineer, so Scott Keillor will want to follow-up with Don as well. Vacation issues include a turnaround need; possible farm road around the perimeter of the runway shift area; and a potential for a traffic study requirement.

The timing of the adoption and the Orchard Road vacation were discussed. It was generally agreed that the adoption process should be the initial policy-level request, followed fairly quickly by a road vacation request in order to terminate roadway travel and enhance safety, as well as to prepare for the runway shift construction project (timing is subject to funding). When the Planning Commission is asked to adopt the master plan, the Issues Paper will advise on all implications, so they will essentially be asked to concur with the road vacation in advance.

Mike Benedict also asked Scott Keillor to check in with Dean Guess to discuss the timing of the Copper Dam removal and whether this could impact vacation and termination of connectivity for Orchard Road.

Planning Process
Scott Keillor gave a brief overview of the planning process. The application includes a Comprehensive Plan Amendment and Zone Change from EFU land to AD airport land. This requires a statewide planning Goal Exception. There is some question as to whether a rezone is needed, as only the runway shift would occur in the EFU zone, but Mr. Keillor will work with the County and DLCD to make this determination early in the process. The process entails multiple opportunities for public input, including:

September (tba): Public Workshop No 1
October 22: Planning Commission Work Session
January 28: Planning Commission Public Hearing
February/March (tba): Public Workshop No 2
March/April: Board of County Commissioners Public Hearing(s)

The preapplication conference adjourned at 3PM.

Respectfully Submitted by: Scott Keillor

HOOD RIVER COUNTY PUBLIC WORKS

DEAN GUESS, DIRECTOR
918 18th Street • Hood River, OR 97031 • (541) 386-2616 • FAX (541) 386-2912

March 5, 2009

To: Eric Walker, County Planning
From: Don Wiley, County Public Works DW
Subject: Airport Master Plan Update – Future Orchard Road Vacation

One component of the Airport Master Plan (AMP) update is a future vacation of approximately 700 feet of Orchard Road. With the proposed vacation, Orchard Road would be broken into two segments of approximately 5600 and 1600 feet. Each segment would have a single outlet to Tucker Road.

Road vacation procedures are established in ORS 368.326 to 368.366. Where road vacations will have transportation impacts beyond the adjacent properties, as appears to be the case here, Public Works will recommend that the county follow the procedures for a vacation with public notice and hearing by the Board of Commissioners. An important element of the vacation hearing process will be a finding that the vacation is in the public interest.

Public Works is aware of the following potential issues or impacts on the transportation system related to the proposed vacation:

1. Airport Safety is enhanced. Pages 4 and 5 of the Columbia Planning and Design (CPD) white paper outline Oregon Department of Aviation requirements and safety improvements related to movement of the Runway Protection Zone fully on to airport property. By closing a portion of Orchard Road and moving the runway away from Tucker Road the potential for conflicts between planes and the users of both roads is reduced. Potential airplane conflicts with private property (Twin Peaks Restaurant) are also reduced by moving it out of the Runway Protection Zone (RPZ). *Positive Impact.*

2. Some Orchard Road residents have expressed concerns with speeding related to through traffic using Orchard Road as an alternate to Tucker Road. The road vacation would eliminate speeding related to through vehicle traffic. *Positive Impact.*

3. Out of direction travel would be substantially increase for many Orchard road residents and farm work forces. The greatest residential impact is on approximately 24 homes near the Copper Dam Road intersection where the round trip to Hood River is increased by about 3.5 miles. *Negative impact.*

4. Emergency vehicle response time to parts of Orchard Road would increase. Westside Fire Department has conducted trials for emergency response times with the vacation of Orchard Road. They have found delays of up to 4 minutes for an ambulance coming from Hood River. Further discussion of emergency vehicle response time is included in the CPD white paper and will be provided by the Fire Department. *Negative impact.*

5. Orchard Road would no longer be available as an alternate route to 1.5 miles of Tucker road. In the event of a closure or extended construction delays on Tucker road, the next closest detours are Brookside Drive/Indian Creek Road and Barrett Drive/Markham Road/Portland Drive. *Negative impact on mobility (probably perceived as positive impact by Orchard Road residents).*

6. Bicycle and pedestrian connectivity is reduced. We have heard concerns from some bicyclist that prefer Orchard Road as an alternate to riding on 1.5 miles of Tucker road. *Negative impact.*

7. Intersection capacity would be minimally affected by the vacation. The Transportation Study by DKS Associates looked at three intersections on Tucker Road (SW Orchard Road, NE Orchard Road, and Barrett Drive/Indian Creek Road) to estimate the impact of a proposed vacation. The study found that in the year 2014 all three intersections would continue to meet operating standards. Marginal increases in delay related to the proposed vacation (less than 2 seconds) were anticipated at all intersections. *Minimal impact.*

8. Orchard Road users would loose the choice of which intersection to use to access Tucker Road. There are potentially three issues with this:

    - The DKS Transportation Study found sight distance at the northeast Orchard Road intersection to be marginal due to a vertical curve on Tucker Road. This is an existing condition and the Study recommended that a survey of the intersection be performed to determine if modifications of the vertical curve are needed. While some residents may object to being forced to use this intersection, it should be noted that the total number of turning movements at the intersection would be expected to decrease with the proposed vacation.

    - Public Works has heard from one farmer that it is difficult to get trailers through the northeast Orchard Road/Tucker Road intersection because of

the hump where Orchard Road intersects the super-elevated curve on Tucker Road.

- There is a length restriction on Tucker Road east of the Barrett Drive/Tucker Road intersection. ODOT requirements limit most truck trailer combinations to a 40 foot trailer and 60 feet overall. We don't know if this would be a problem for any of the farmers that would be limited to access from the northeast Orchard intersection.

Further study of the intersection sight distance and input from Orchard Road users during the vacation process would be needed to determine if this would be a negative impact.

9. Existing utilities in the Orchard Road right-of-way would need to be accommodated. The CPD white paper indicates that existing utilities would be allowed to remain in place with easements. *Minimal impact if existing utility installations can be addressed during the vacation process.*

10. Cul-de-sac turnarounds would need to be provided at the new ends of Orchard Road. These turnarounds would need to be paved and large enough to accommodate trucks, snow plows, and emergency service vehicles. *Minimal impact if cul-de-sacs are provided, but there may be some concerns from residents living next to the cul-de-sacs.*

A future vacation of Orchard Road will have both positive and negative impacts on the transportation system. The final decision on whether to vacate the road will involve weighing the impacts with public comment to assess how the public interest will best be met.

Office:
(541) 386-5551

Fax:
(541) 386-7228

WEST SIDE
RURAL FIRE PROTECTION DISTRICT

1185 Tucker Road
Hood River, OR 97031

RECEIVED MAR 2009

Michael S. McElwee
Executive Director
Port of Hood River

March 10, 2009

This letter is to clarify a previous letter requested by Scott

Scott as part of his information concerning the airport master plan asked me what impact closing Orchard Rd. would have on fire district responses. I explained I could complete a brief time study to compare response times to Winston Rd. in the event Orchard Rd. was closed on the east end. This brief information dated February 17, 2009 (attached) was forwarded to Scott. At the time I obtained this information I was under the impression it was for fact finding and would lead to further discussion, with this in mind I did not elaborate or offer conclusions or opinion. After our discussion it appears I need to further clarify the information provided.

As noted in paragraph 1, when we do time studies we travel at posted speed with the flow of traffic and try to compensate for a true emergency code three responses by allowing a 10% reduction in our overall elapsed time. As noted in paragraph 5, due to time of day, traffic complexities and weather conditions an additional 10 to 20% time reduction could be obtained by a code three response.

In order to determine true code three response times I investigated some City ambulance dispatch logs that indicate response times to Winston Rd (see attached)
These times are true code three responses, and show a time of 6 minutes to the end of Winston rd. traveling south on Orchard Rd. and a time of 7 minutes and 45 seconds if you travel from west end of Orchard Rd. If you note these are in the time frame calculations as indicated by the previous letter. This would indicate an additional 1 minute 45 seconds would be necessary to compensate for the closure of Orchard Rd as noted by these documents. Note even these times can be considered concrete, again response times can fluctuate greatly based on the circumstances previously mentioned.

Response times for the Districts fire engines would be impacted slightly for our back up apparatus, but due to the fact we have fire engines responding from both ends of Orchard Rd. the districts initial attack response times would not be effected. The District would request gates be provided to allow emergency equipment to traverse across the air field if necessary.

This time study does not quantify the impact of our first responders. Their response times cannot be charted due to the fact that they respond from different locations i.e. their residence, place of employment or possible already in transit form other locations. We track their responses by another method which is encompassed in the Districts adopted Oregon Deployment Standard. This document requires the District to maintain a certain response time frame to different areas of the District. The District meets or exceeds these time frames to all our calls and typically we arrive prior to the ambulance in most situations. This is extremely important from the standard of patient care. First responders prior to the arrival of ambulance personnel start the basic life saving processes that are continued once the ambulance arrives.

If you where to chart the response time to Winston Rd. as compared to the top of Binns Hill you would see a difference of approximately 9 to 12 minutes for the ambulance to arrive but initial patient care would already be underway by the Districts first responders.

In conclusion any delay in response time may impact the final outcome of any emergency. I feel the people of this area should be made aware of the difference in response but should also be made aware that the level of response they receive meets or exceeds the standards set by the Fire District.

Jim Trammell
Fire Marshal

Scott February 17, 2009

As per our conversation I have prepared a response time study for our review. Times where recorded for equipment responding from both our stations as well as from the City location to establish response time before and after the proposed closure of Orchard Road. It should be noted these times are recorded proceeding at traffic speed and time reduced for stopped vehicle and a 10% reduction of time to compensate for a code 3 response (lights and siren).

The time study determined the following

Fire engine response time would be increased from 2 minutes 20 seconds to 6 minutes 21 seconds to Winston Rd from our Tucker rd station.

Fire engine response from our Barrett Rd. station would not be impacted to Nunamaker Rd.

The biggest impact would be on Ambulance response time to Winston Rd. from the City Fire station. The Ambulance response time would increase from 5 minutes 10 seconds to 10 minutes 3 seconds.

Note: these times could fluctuate by 10 to 20% depending on time of day and traffic volume.

These times do not reflect First Responder arrival time due to the fact they respond in personnel vehicles from different locations.

Jim Trammell

HRFD

Hood River Fire Department
Station: 1
Shifts Or Platoon: B

Location: **Orchard and Tucker** **Hood River OR 97031** **Orchard and Tucker** Zone: **05 - Westside Fire District** Location Type: **2 - Intersection** Cross Street, Directions or National Grid: **Orchard and Tucker**	Incident Type: **322 - Motor vehicle accident with injuries** EMSID: **00164** Incident #: **2007-1322** Exposure ID: **709958** Incident Date: **11/05/2007**

Report Completed by:	**ID:** D09606/P122959	**Name:** Wells, Devon	**Date:** 11/07/2007
Report Reviewed by:	**ID:** D09606/P122959	**Name:** Wells, Devon	**Date:** 11/07/2007
Report Printed by:	**ID:** D04145/I101297	**Name:** Walker, Jeff	**Date:** 3/9/2009 **Time:** 8:07:14 AM

Type of Service Requested:	**911 Response (Scene)**	**Mass Casualty Incident**	No	Complaint Reported By Dispatch:	**Traffic Accident**
Aid Given or Received:	**Mutual aid received**	Primary action taken:	**33 - Provide advanced life support (ALS)**		
Total # of apparatus on call:	**1**	Total # of personnel on call:	**3**		

NARRATIVE

APPARATUS

Unit	M-3
Type:	ALS unit
Use:	EMS
Response Mode:	Lights and Sirens
# of People	3
Injury Or Onset	-/-/- -:-:-
Alarm	11/05/2007 07:56:00
Dispatched	11/05/2007 07:57:06
Enroute	11/05/2007 07:58:04
Arrived	11/05/2007 08:04:25 AT ORCHARD WEST
Arrived At Patient	11/05/2007 08:06:00 + ADDITIONAL
Cancelled	-/-/- -:-:- 1 MIN 24 SEC
Cleared Scene	11/05/2007 08:20:41 TO WINDSOR
At Destination	11/05/2007 08:27:27
Cleared Destination	-/-/- -:-:- ≈ 7:45
In Quarters	11/05/2007 09:00:00
In Service	11/05/2007 09:00:00
Number Of People not on apparatus: 0	

PATIENT #1 - PCR 271679

Name	**Home Address**	**Gender**	**Pregnancy**
[redacted]	[redacted]	Male	Not Known
Race	**Ethnicity**	**DOB**	**Age**
0	0	[redacted]	[redacted]
SSN	**Drivers License Number / State**	**Primary Phone**	**Secondary Phone**
	/	[redacted]	
Unit Number	**Unit Service Level**	**Estimated Body Weight**	**Pediatric Color Code**
M-3	ALS, Level 1 Emergency	kg	0

PATIENT HISTORY

Primary Symptom:	**What happened to this patient:**	**Condition Code Number:**
Weakness	Treated, Transported by EMS	Not Available [Not Available]

HRFD

Hood River Fire Department
Station: **1**
Shifts Or Platoon: **C**

Location: **1800 Winston RD** **Hood River (County) OR 97031**	Incident Type: **321 - EMS call, excluding vehicle accident with injury**
Zone: **05 - Westside Fire District** Location Type: **1 - Street address**	EMSID: **00164** Incident #: **2009-82** Exposure ID: **1187393** Incident Date: **01/20/2009**

Report Completed by:	**Not Completed**		
Report Reviewed by:	**Not Reviewed**		
Report Printed by:	**ID:** D04145/I101297	**Name:** Walker, Jeff	**Date:** 3/9/2009 **Time:** 11:27:26 AM

Type of Service Requested:	**911 Response (Scene)**	**Mass Casualty Incident**	No	Complaint Reported By Dispatch:	**Stroke/CVA**
Aid Given or Received:	**None**	Primary action taken:	**33 - Provide advanced life support (ALS)**		
Additional actions:	**34 - Transport person, -**				
Total # of apparatus on call:	**1**	Total # of personnel on call:	**3**		

NARRATIVE

Dispatched to residence of 93 yo exibiting stroke like symptoms.

APPARATUS

Unit	M-1
Type:	ALS unit
Use:	EMS
Response Mode:	Lights and Sirens
# of People	3
Injury Or Onset	01/20/2009 17:10:00
Alarm	01/20/2009 17:10:00
Dispatched	01/20/2009 17:13:00
Enroute	01/20/2009 17:14:00
Arrived	01/20/2009 17:20:00
Arrived At Patient	01/20/2009 17:21:00
Cancelled	-/-/- -:-:-
Cleared Scene	01/20/2009 17:49:00
At Destination	01/20/2009 17:54:00
Cleared Destination	-/-/- -:-:-
In Quarters	01/20/2009 18:20:00
In Service	01/20/2009 18:10:00

Number Of People not on apparatus: 0

PATIENT #1 - PCR 461630

Name	**Home Address**	**Gender**	**Pregnancy**
[redacted]	[redacted]	Male	Not Known
Race	**Ethnicity**	**DOB**	**Age**
()	()	[redacted]	[redacted]
Unit Number	**Unit Service Level**	**Estimated Body Weight**	**Pediatric Color Code**
M-1	ALS, Level 1	kg	()

6:00 to Winston

March 8, 2009

Hood River County Commissioners

Dear Sirs,

As the new Port of Hood River contracted operator at Ken Jernstedt Field (affective January 1, 2009), I fully support the relocation of the runway to the East and the closure of Orchard Road.

As currently laid out, the runway safety zones include both Tucker Road and Orchard Road. Tucker Road is a high volume traffic artery with high profile vehicles being a common occurrence. Orchard Road has a lower vehicle usage, though high profile vehicles can be a daily occurrence (primarily school busses). I have not yet been able to accurately measure the height of aircraft crossing these two roads while on final approach, but I do know it is low. I will estimate the height at around 50 feet.

One safety aspect I can definitely pass on for your consideration is in regards to multi-engine aircraft taking off. For every aircraft, there will be some form of a Pilot's Operating Handbook. This will be filled with pertinent information regarding the safe operation of the aircraft. The newer the aircraft, the more detailed this handbook will be. For a typical example of a light twin that would be flying into Hood River, we can look at a six seat Beechcraft 95-B55 *Baron*. In the Operation Handbook for this aircraft, the chapter on Performance has various charts and graphs. One chart covers the accelerate stop distance. This is where the aircraft accelerates to take off speed and then aborts the take off. A copy has been enclosed for your study (Accelerate – Stop Distance, pg 5-26). If we consider the following scenario: an FAA 'Standard Day' (temperature of 59* F, barometric pressure of 29.92), a *Baron* with five people, baggage, and full fuel for a gross weight of 5100 pounds. If this aircraft accelerates to lift off speed (97 MPH) and aborts the take off at that point, the aircraft will come to a stop approximately 3,400 feet from the point at which the take off began. In this scenario, no matter which direction the take off is begun, the aircraft will cross the road at the far end of the runway. In studying the chart, you will see that variations in temperature, barometric pressure, wind, and weight all affect this distance. Very few scenarios result in the aircraft stopping on the runway.

If the pilot lost an engine and elected to continue the take off and climb out on the one engine, his climb gradient will be from 2% to around 7%. A copy of this chart (Climb – One Engine Inoperative, pg 5-31) has also been included for your study. In other words, he might be barely climbing faster than the ground is rising.

Aircraft and engine reliability today is extremely good with failures being rare. Unfortunately accidents still happen, whether it is caused by pilot error or system failure. While we cannot design a 'perfect airport' here in Hood River, nor can we ban operations of some aircraft, we can do what we can to 'stack the deck' in everyone's favor. Having been in the aviation industry since 1980 I have seen my fare share of accidents and incidents, I sincerely believe that closing Orchard Road and shifting the runway east would be a great opportunity to minimize our chances of an accident in the future.

Respectfully,

Scott Gifford, President
Classic Wings Aero Services, Inc
3608 Airport Drive
Hood River, OR 97031

ACCELERATE - STOP DISTANCE

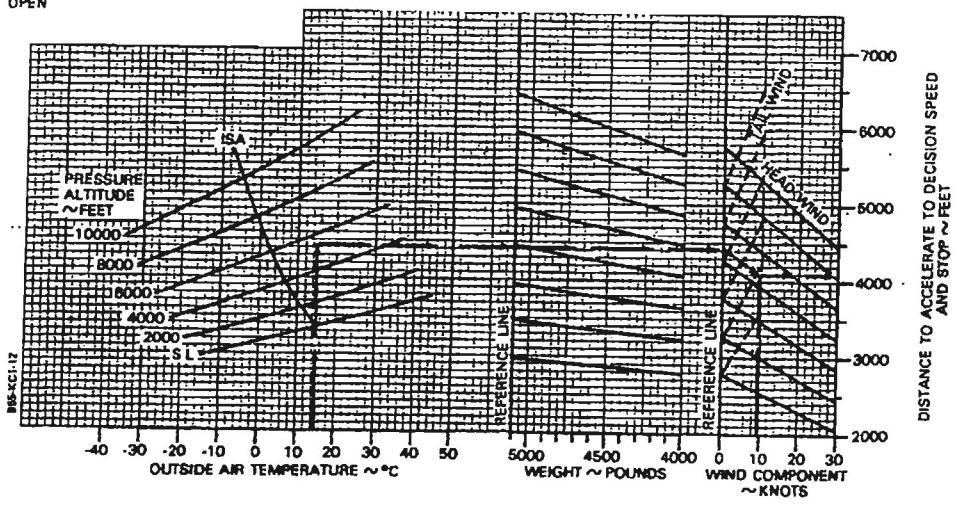
ASSOCIATED CONDITIONS

POWER	1. TAKE-OFF POWER AT 2625 RPM SET BEFORE BRAKE RELEASE 2. ENGINES IDLE AT DECISION SPEED
MIXTURE	LEAN TO APPROPRIATE FUEL FLOW
FLAPS	UP (0°)
RUNWAY	PAVED, LEVEL, DRY SURFACE
COWL FLAPS	OPEN

DECISION SPEED (ALL WEIGHTS)
84 KNOTS/97 MPH

EXAMPLE

OAT	15°C
PRESSURE ALTITUDE	5650 FT
TAKE-OFF WEIGHT	5100 LBS
HEAD WIND	9.5 KTS
ACCELERATE AND STOP DISTANCE	4100 FT
IAS DECISION SPEED	84 KTS/97 MPH



CLIMB - ONE ENGINE INOPERATIVE

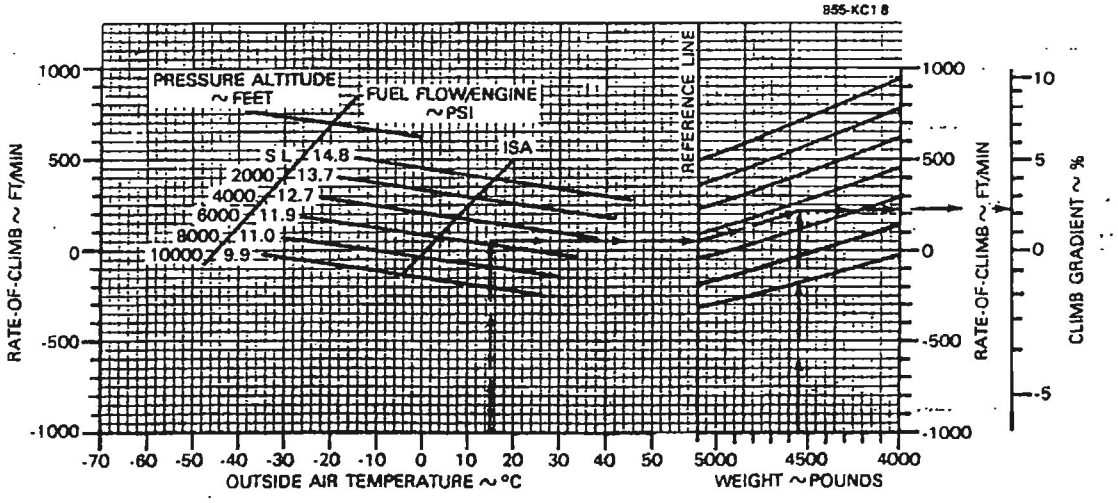
ASSOCIATED CONDITIONS:

POWER	MAXIMUM CONTINUOUS AT 2625 RPM
FLAPS	UP
LANDING GEAR	UP
INOPERATIVE PROPELLER	FEATHERED
COWL FLAPS	OPEN
MIXTURE	LEAN TO APPROPRIATE FUEL FLOW

CLIMB SPEED 100 KNOTS (ALL WEIGHTS)
115 MPH

EXAMPLE

OAT	15°C
PRESSURE ALTITUDE	5650 FT
WEIGHT	4550 LBS
RATE-OF-CLIMB	230 FT/MIN
CLIMB GRADIENT	2.3%



March 18th, 2009

Airport safety at Ken Jernstedt Airfield and safety on Orchard Road in Hood River

To Whom It May Concern,

As a pilot operating out of the Ken Jernstedt Airfield and a resident living on Orchard Road I have become very Interested in the current topic of the Airport Master Plan. For the last year and a half I have sat as Chairman of the Airport Advisory Committee. The Airport Master Plan has been discussed at each meeting for the past 15+ years. It is a very passionate subject among the pilots operating out of the Ken Jernstedt / Hood River Airport. I have also had the opportunity of meeting many of my neighbors on Orchard Road and listening to their concerns and support for the Airport Master plan and more specifically the closer of Orchard Road. I do not believe there has ever been as much positive support for the Master Plan then what exists now among pilots, surrounding airport residents, land owners including orchardists, and local emergency authorities and Port Of Hood River Authorities. All have come together in the cause of safety.

Each pilot takes their responsibility of operating safely in his/her aircraft. Flying out of Hood River can be challenging at times. There are many natural elements working against you, many times all at once. Wind, sink holes, hot weather, rising terrain, and traffic on both Tucker and Orchard Road acting as obstacles are the main culprits. Only a pilot who has experienced the helpless feeling of being caught in a sink hole on final and praying there is enough lift and airspeed to get you to the runway before you fall out of the air can testify to this real fear that exists at the Hood River Airport. The Sink hole off the end of runway 25 can be very severe. By shifting the runway to the east will help dampen this problem. The possibility of an aircraft hitting this sink hole and hitting a car driving on Orchard road is a very real problem. Aircraft have landed in the field east of the runway having been stuck in the sink hole. I fear it is only a matter of time before a vehicle and aircraft collide. Off the end of runway 7 is Tucker Road. Although tucker road is not as close to the runway as Orchard road on the opposite end it still poses a real liability. There is also a small restaurant that is directly in line with the runway. The Runway shift will help eliminate the danger to traffic along booth roads. Low flying aircraft signage along these roads would still be a worthwhile investment.

Orchard road has also become the local "Indy 500". I firmly believe the county could raise the funds in speeding violations along this road to do a large project! I along with my neighbors are very concerned with the high speed traffic along Orchard road. Pulling out of the driveway is a

risk we have to take each day. People have been using Orchard road as a way to circumvent Wind Master Corner, while attempting to get a head of traffic on Tucker road. The inconvenience of closing Orchard road will not affect the people who reside alongside it as much as those who knowingly use it as a "Short Cut" and become part of the ever increasing problem.

On a final note, I wish to express the opportunity we have at this time to secure our airports future. This airport is used in all aspects, booth commercial, educational, recreational, and most importantly as a center for emergency response. For the last three years I know both Hellitack and chase planes have used Hood River to fight wild fires. They save lives, buildings and forest from being able to stage so close to the fire. The County Sheriff's Department also uses the airport on a regular basis for search and rescue, drug spotting, and law enforcement. We are so fortunate to have such an active and well used airport. I fear without the master plan being adopted the airports days will be numbered. Small general aviation airports across the Nation are closing at an alarming rate. The main reason so many are closing is because they do not meet FAA safety requirements. We have the support of the FAA as well as financial support to implement the Master Plan if it is approved. We have the support of the local pilots. We have overwhelming support from the residents along Orchard road as well as the Orchardist whom will be affected the most in their operations. We now need the support from the County to complete the final phase of approval. I hope this Airport master Plan is considered as seriously as it needs to be. The outcome is most important.

Please let me know if I can be of any assistance.

Kind Regards,

Jeremy J. Young
1688 Orchard Road
Hood River, Oregon 97031
503-758-2481

March 19, 2009

Public Interest and Safety at Hood River Ken Jernstedt Airfield

To Whom It May Concern,

We the undersigned all own farm property on Orchard Road. The property is operated as Commercial Orchard, Packing House, and Cold Storage facilities utilizing land on both the North and South sides of the Ken Jernstedt Airfield. As part of our farming activities we use Orchard Road to move equipment and fruit between our different orchard, packing, and cold storage sites.

We are agreed that closing Orchard Road to through traffic would inconvenience our farm operations but an increase in airport safety and a large reduction in high speed automobile traffic on the road would certainly outweigh the operating delays which may occur.

Maintaining a viable and vibrant airport in Hood River is an integral part of our farming activities and we would not be amenable to a reduction or curtailment in the continued presence or operation of this valued asset.

To be blunt, we have been farming around this airport since it was first leased from Gene Wright in 1945; we like it, use it, need it, and want it to prosper.

Sincerely,

John M. Benton

Julie A. Benton

Steve Benton

Mary Sue Benton

Frances Benton

Terry Benton

Charles Benton

Cathy Benton Hamada

Robert Benton

John Benton

Ken Jernstedt / Hood River Airport 4S2

Pilot support for the Airport Master Plan & Orchard Road Residents

**Copy of master plan attached.*

Name	Signature	Address	Date
Jeremy Young		1688 Orchard Rd Hood River, OR	3/20/2009
Brion Brandt	Brion Brandt	1800 country club	3/20/09
David Schneeberg		2426 Reed Rd, HR	3/20/09
Ila Mae Schneeberg		" "	"
Andy Anderson		1160 Multnomah Rd HR	3/20/09
Jean Anderson		1160 Multnomah Rd HR	3/20/09
Kristofer Parks		2640 NW Logan St, Camas, WA	3.20.09
Karla Schaapveld		2640 NW Logan Camas WA	3/20/09
Lois Bowman		Hood River, OR.	3/20/09
Julie Benton		HR 1450 Nunamaker	3/20/09
John Benton		HR "	3/20/09
Bob Lynch		H.R 2325 Reed Rd	3/20/09
Joan Lynch		HR "	"
Dick Clarke		HR 1605 Orchard Rd	3/20/09
Katie Miller		19 Sauter Rd - Lyle WA	3-20-09
Sandra Fritz		303 E. 10th St, The Dalles,	3/20/09
Michael Fritz		303 E. 10th St, The Dalles	3/20/09
Ken Olsson		669 Rand Road H.R.	3/20/09
Robert H. Spielman		PO Box 292 Fairview, OR 97024	3-20-09
Paul Kollas		915 4th St, Hood River	3/20/09
Johnny Young		4074 Barrett Dr. Hood River	3/20/09
Terry Brandt		1615 Tucker Rd	3/20/09
Amit Dagan		776 Saint Charles Place	3/20/09
Scott Efford		3605 Airport Dr.	3/20/09
Karen C Young		1688 Orchard Rd. H.R. OR	3/20/09
Heather Walker		1665 Orchard Road	3/20/09

Ken Jernstedt / Hood River Airport 4S2

Pilot support for the Airport Master Plan & Orchard Road Residents

**Copy of master plan attached.*

Name	Signature	Address	Date	N.10
Joseph Csizmazia	J C Maz	P.Box 102, Underwood, Wa	24/03	N6934K
Bernard M Elkins		87 OAKRIDGE RD. WHITE SALMON, 98672	24/03/09	
DENNIS LINDSEY		P.O. BOX 125, HUSUM, WA 98623	24/03	
Johnny G Roberts		3000 Dee HWY -	N 80558	
Karl G Stein		1330 Sunset Rd	N5472C	
David Nichols		202 Bingen, WA 98605	67RD	
KENNETH D MURPHY		5690 ALDER Rd. HOOD RIVER OR 97031	N44C2	
John Ellen		179 Stockman Dr Trout Lake WA 98650	N2118F	
Michael Cochran		PO Box 219 Parkdale, Or 97041	N6681J	
[illegible]		POB-1153 White Salmon, WA 98672	23L	
Doyle West		8980 Clear Creek Rd. Parkdale, OR. 97041	N7196A	
DAVE HARRIS		3925 PORTLAND DR Hood River OR 97031		
C. R PEPITONE		1658 ORCHARD RD, Hood River	3-25-	
Jon Davies		3409 Brookside Dr. H R OR	97031	
[illegible]		3604 Belmont Dr	25 Mar 09	
Avia Sandercock		2820 Frederick ave H.R.	26 mar 09	N4557X
Kyle Thornton		1690 Orchard Rd	3 26 09	
MAH Bowen		1976 Cherry Hts. Rd	296 5255	
Mary Bowen		" " "	" "	
[illegible]		3064 Portland Dr	399-2005	
DAVE KUEBEL		1310 IVIEMOORST	3/27/09	
TED McGEER		330 OAK RIDGE Husum	29 Mar 09	
Linda Fennyhough		80 Lakeside Dr White Salmon Wash	3/29/09	
[illegible]		[illegible]	[illegible]	
[illegible]		1613 Tucker Rd, Hood River, OR 9031	4/8/09	
Robert H. Spielman		PO Box 292, Parkdale OR 97024	4-8-09	

Ken Jernstedt / Hood River Airport 4S2

Pilot support for the Airport Master Plan & Orchard Road Residents

**Copy of master plan attached.*

Name	Signature	Address	Date
Bill VEATCH		1696 1/2 ORCHARD RD	3-23-09
Becky Veatch		1696 1/2 Orchard Rd	3/23/09
Terri Veatch		1696 Orchard Rd	3/24/09
Dan Darling		3602 airport Dr	3-25-09
Kimberly Gray		3939 Acree Dr. Hood River	3-31-09
James A Wilson	James D Wilson	5176 12th ST The Dalles,	4-4-09
BOB MEYER		34 KALUA MONTESANO, WA	206-972-0722

MAR. 23, 2009
HOOD RIVER, OR.

COUNTY PLANNING SERVICES

DEAR MEMBERS:

I WAS BORN AND RAISED IN HOOD RIVER OVER SEVENTY-SIX YEARS AGO. WE HAVE LIVED ON ORCHARD ROAD FIFTY-FOUR OF THOSE YEARS NEXT TO AIRPORT PROPERTY.

WE ENJOY THE DAILY AIRPLANE ACTIVITY FROM OUR LIVING ROOM WINDOWS.

THE HOOD RIVER AIRPORT HAS ALWAYS BEEN A MECCA FOR AIRCRAFT FLYING DOWN THE GORGE IN ADVERSE WEATHER CONDITIONS, MANY TIMES OVER SEVERAL DECADES I'VE WATCHED PLANES ENTER THE GORGE AT HOOD RIVER ONLY TO SEE THEM RETURN IN A FEW MINUTES AND LAND HERE DUE TO SEVERE WEATHER CONDITIONS.

I BELIEVE, RELOCATING THE RUNWAY TO THE EAST 550 FT. WILL ADD MORE SAFETY TO BOTH APPROCHES, EAST AND WEST.

ORCHARD ROAD USED TO BE A NICE, QUIET RURAL ROAD. IT HAS BECOME A RACETRACK ~~FOR~~ FOR MANY DRIVERS, EVEN UPPER VALLEY COMMUTERS ENTER THE SOUTH END AND HURRY TO THE NORTH END TRYING TO GAIN A FEW CAR LENGTHS AT AT NOBI'S CORNER.

WE WELCOME THE CLOSING OF ORCHARD AT THE EAST END OF RUNWAY 25.

WE BELIEVE ARGUMENTS CONCERNING NOISE ARE EXAGGERATED AND UNFOUNDED. CESSNA CITATIONS

1.

(JET) AND TURB-PROPS LAND WITHOUT US HEARING THEM, THE NEWER AIRCRAFT ARE MUCH QUIETER THAN IN THE PAST.

A VIABLE, SAFE, ACTIVE AIRPORT IS A GREAT ASSET TO ANY COMMUNITY.

LOOKING FORWARD TO A THRIVING, DEVERSIFIED AIRPORT.

SORRY FOR THE HAND WRITTEN NOTE, BUT OUR COMPUTER IS DOWN.

RESPECTFULLY,

Richard Wintle

Oregon
Theodore R. Kulongoski, Governor

OREGON DEPARTMENT OF AVIATION

3040 25th Street, SE
Salem, OR 97302-1125
Phone: (503) 378-4880
Toll Free: (800) 874-0102
FAX: (503) 373-1688

March 24, 2009

Scott Keillor
Columbia Planning and Design
885 Methodist Road
Hood River, Oregon 97031

Subject: Comments on proposed zoning ordinance update

Mr. Keillor,

The Oregon Department of Aviation (ODA) has reviewed the draft zoning for Hood River County and has minimal comments regarding the proposed amendments.

Article 33 – Airport Development Zone

Section 33.30 (D)(2) ODA would like to ensure that any evergreen landscape buffer, sight obscuring fence or landscaped berm which is adjacent to a residential area does not exceed the height restrictions set forth by the imaginary surfaces.

Section 33.35(C) is not clear and should be clarified.

Section 33.35(E) states structures may be higher with FAA approval. It may be helpful to the proponents of construction if you include that the Form 7460 is the appropriate means to request the FAA's approval.

Article 34 – Airport Height Combining Zone

Section 34.15(M) states Public Assembly Facilities do not include places where people congregate for short periods of time such as parking lots. However, the FAA has recently begun to associate parking lots with Public Assembly Facilities. Although people occupy parking lots for short periods of time they are connected to buildings that are considered Public Assembly Facilities such as schools, churches, shopping centers, etc. ODA strongly suggests you consider removing parking lots as not being considered as a Public Assembly Facility.

Section 34.30(C) seems to be somewhat vague as to where the zone begins. It does extend to 5000' from the runway edges, yet it begins when the transitional zone reaches a vertical height of 150' (or the same above mean sea level as depicted for each airport.) Stating that the transitional zone supersedes the horizontal zone until the transitional zone reaches the 150' above the airport elevation may be helpful to the clarity of this section.

Section 34.30(E) – the information in the text is correct given the current approach conditions at both Cascade Locks Airport and Ken Jernstedt Airport. However, if either airport increases their approach to a non-precision or precision approach the runway protection zone will also increase. Enclosed is a recommended definition and image for runway protection zone. Replacing the current definition with the included definition will allow for change and growth at both airports.

Section 34.60(K), ODA suggests you replace "airport **runway** surfaces" with "airport **imaginary** surfaces." Throughout the entirety of the document and in the definitions, the FAR Part 77 surfaces are referred to as the "imaginary surfaces", so for consistency ODA recommends the term be exchanged.

Article 37 – Airport Noise Overlay Zone

ODA has no comments, suggestions or changes to this section of the proposed addition.

Thank you for allowing the Oregon Department of Aviation comment on the proposed zoning update. ODA is very pleased your jurisdiction took the time and initiative to protect your airports and citizens with the proposed updates. Should you have further questions regarding our comments please contact me at (503) 378-2894.

Best regards,

Melinda Fahey

Melinda Fahey
Aviation Planning Analyst

Enc: OAR 660-013 Exhibit #4

March 22nd, 2009

To Whom It My Concern,

I am writing in regards to the topic of the Hood River Airport master plan and more specifically the possible closer of Orchard road.

I, with my family own a home off Orchard road. We love living in Hood River and enjoy our neighbors. One of my biggest concerns; which I know I share with my neighbors is that of the increasingly high volume of both traffic and aircraft activity. The traffic along Orchard road is often unchecked and high speeds are reached on a regular basis. I feel unsafe walking or biking with my children on Orchard Road as it has become a drag strip for people in a hurry trying to "Cut" Wind Master Corner and beat traffic on Tucker road.

I have personally witnessed aircraft on final for the runway come very close to Orchard road as they fly over to land. Some aircraft have even come dangerously close to hitting cars as they pass each other unaware of the extreme danger they are booth in. (I have photos of such instances if you wish to see them) I fear one day very soon, there will be a fatal accident on Orchard road.

The Hood River Airport plays a very important role in our community. It is a place of commerce, a staging point for Forrest fire response helicopters and aircraft, veteran life flight, training, and entertainment. I believe it is our responsibility to keep our airport safe and vital. After reading the airport master plan, I know this is the objective. In order for the master plan to take affect Orchard road must be closed. This will become an inconvenience for me and many of the people living on Orchard road however this is a small price to pay. I would rather take a few extra minuets driving around to Tucker road then have one of my sons killed in a bus that was hit by an airplane trying to land. This is an extreme example, but one that is very real.

The options are simple. One, Close Orchard Road and secure the Airports safety and longevity, or Two, Do nothing and hope no one gets killed. If this is the outcome please be aware that the people along Orchard road were very aware of the chance we had to see our airport and road become safer and nothing was done.

Thank you.

Sincerely,

Kara C. Young
1688 Orchard Road
Hood River, Oregon 97031
503-758-2292

March 25, 2009

To whom it may concern:

The undersigned would like to share his thoughts concerning the proposed Hood River Airport (HRA) improvement plan.

The proposed changes were designed by expert consultants following FAA safety guidelines. Presently the approach phase of the flight to HRA runway requires utmost attention, allowing no room for the slightest disturbance by wind or visual distraction from road traffic. The reason for this potentially dangerous situation is the proximity of the two roads at both ends of the runway. One must land at a low altitude over the very busy Tucker road on the west and Orchard road on the east end of the airstrip. Moving the runway to the east will allow a safer (higher) approach over Tucker road and by closing off Orchard road to the east further enhances safety for air and road traffic. It must be emphasized that the HRA is an important economic asset to the Columbia Gorge communities. It serves an important base for private aviation, pilot training, air museum, forest fire suppression, agricultural spraying, mountain rescue, law enforcement, etc. operations.

Please approve and support the HRA improvement plan for safety & economic reasons.

Joe Csizmazia, pilot
Hanger 10A, HRA
509-493-4209

Bill & Becky Veatch
1696 Orchard Rd.
Hood River, OR.

To whom it may concern:

We are writing in support of the closure of Orchard Road and shifting the runway East.

Our family and has lived in our residence here on Orchard Road for the past nine years. In those nine years we have witnessed so many cars racing down Orchard Road that it is too numerous to count. We have seen cars peel out and wreck on corners of both East and West ends. Most recently the traffic flow has tripled due to construction on Tucker Road and residents of the upper valley using it for a cut off, by-passing Windmaster corner. The cars do not slow down or obey the speed limit even when people, children or animals are present. We are very much concerned for the safety of the young children who live on Orchard road; riding bikes, walking dogs, waiting for the bus or just getting the mail.

In the past year we have personally lost two family pets who were hit by speeding cars on Orchard road. One was our small dog (Nubbie) who was running out to follow us for a walk. And the other was our son's favorite 8 year old cat who rarely left the house. On that night the car who hit him did not stop, left our cat badly injured, yet still breathing. When we went to help, the on coming cars did not even stop or slow down while we were trying to get him off the road.

In addition to supporting the closer of Orchard road for the above reasons we would also like to point out that we have observed low flying aircraft less than 25 feet over Orchard Road. This observation includes both aircraft on departure and approach. We have also witnessed several aircraft landing short, touching down before reaching the runway; which is why the fence along Orchard road at the east end of the runway was removed. It was a safety concern for the aircraft coming in low and hitting it with their landing gear. Motorists take no notice to low flying aircraft except to admire the planes, and speed on by in a hurry for their destination. It is a huge concern for the safety of cars, trucks, buses, pedestrians, airplanes and pilots. In a growing community we will no doubt see more and more air traffic in the future, which will be a great advantage for the businesses and growth of this town. If Orchard Road is left unchanged it is inevitable that we will be faced with a catastrophic accident.

It may be an inconvenience to those who are used to using Orchard road but as residents we are willing to forgo the extra distance in the sake of safety. And wasn't Orchard road originally constructed as a means to get to our residences, not as a thoroughfare?

Thank you for your consideration in this matter.

Sincerely,

William Veatch
And Becky J. Veatch

Oregon
Theodore R. Kulongoski, Governor

OREGON DEPARTMENT OF AVIATION

3040 25th Street, SE
Salem, OR 97302-1125
Phone: (503) 378-4880
Toll Free: (800) 874-0102
FAX: (503) 373-1688

April 7, 2009

Eric Walker
Hood River County Planning Division
601 State Street
Hood River, Oregon 97031

Subject: Comments on changes made to Article 33 & 34

Mr. Walker,

The Oregon Department of Aviation (ODA) has reviewed the subsequent changes to the draft zoning for Hood River County and again has minimal comments regarding the proposed amendments.

Article 33 – Airport Development Zone

The ODA does not have any further comments on the changes made to Article 33.

Article 34 – Airport Height Combining Zone

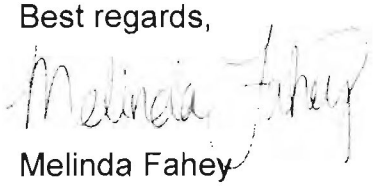
Section 34.15(K) – Why is the definition for height only applicable when the structure, tree, plant or object of natural growth is proposed to penetrate the airport imaginary surface? A structure, tree, etc., has height regardless of its penetration. The definition of height should be applicable to all structures and objects of natural growth.

Section 34.30(A) – Currently, the primary surface for both Cascade Locks and Ken Jernstedt airports is 250', not the 500' which is stated.

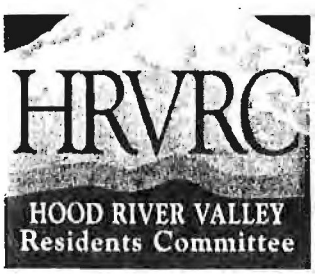
Section 34.30(D) – The last sentence in this definition is confusing and seems to be presented conversely. It would make more sense if the first statement in the second sentence presented the Horizontal Surface's origination point, followed by how far the surface extends.

Thank you for allowing the Oregon Department of Aviation comment on the proposed zoning update. Should you have further questions regarding our comments please contact me at (503) 378-2894.

Best regards,



Melinda Fahey
Aviation Planning Analyst



Promoting a Livable Community

April 13, 2009

Via Email to eric.walker@co.hood-river.or.us

Eric Walker
Senior Planner
Hood River County Planning and Building Services
601 State Street
Hood River County, Oregon 97031

Re: Port of Hood River amending the Hood River County Comprehensive Plan and Zoning Ordinance by adopting the Hood River Airport Master Plan

Dear Mr. Walker:

The Hood River Valley Residents Committee (HRVRC) is a 30-year old non-profit organization composed of 150 dues paying families. Our mission is to protect farm and forestland and the livability of Hood River Valley. One component of a livable Hood River Valley is having safe and effective bicycle and pedestrian routes. Neighbors and supporters who live and work in Hood River County request that the County carefully and fully consider and respond to the following issue regarding the Hood River Airport Master Plan.

Safe bicycle routes in Hood River are key to recreational riders, but also to bicycle commuters. Commuting via bike decreases wear and tear on our roads, is a healthy alternative to driving that doesn't contribute green house gases. In addition, with parking Hood River already problematic, bicycle commuting means one less parking spot required. Recreational cycling is also a key component of tourism in Hood River County.

Today, one of the key safe linkages for bicycles between rural Hood River Valley and the City of Hood River is via Orchard Road. The current proposal to shift the runway east will eliminate this critical safe route and force bicyclist to use the much busier Tucker Road. Busy roads of course increase the likelihood of a collision between car and bicycle.

HRVRC requests that the Hood River Airport Master Plan incorporates a safe alternative for resulting from the elimination of Orchard Road. This might entail developing a bicycle specific trail around the east end of the runway.

Sincerely,

Jonathan Graca
Executive Director

info@hrvrc.org • (541)490-3618 • PO Box 1544 • Hood River, Oregon 97031 • www.hrvrc.org

Eric Walker

From: Kim Paulk
Sent: Monday, April 20, 2009 7:47 AM
To: Mike Benedict; Eric Walker
Subject: FW: Orchard road

-----Original Message-----
From: Jack Sheppard [mailto:jes1andjes2@yahoo.com]
Sent: Friday, April 17, 2009 6:19 PM
To: plan dept
Subject: Orchard road

Mr. Benedict:

I am now mostly retired from farming and don't use Orchard Road to the extent that I used to when I was frequently moving tractors and machinery between Dukes Valley and my place on Tucker Road. My 35 or so years of making those moves convinced me that it was damned dangerous to drive slow machinery on Tucker Road; I always took a side road if I could and Orchard Road was the only option on this side of the river.

The same conclusion extends to bicycles, horses, joggers and pedestrians. They are a lot safer anywhere but on Tucker Road.

I am proposing that some sort of road be included in the airport extension plan to allow slow moving equipment, walkers, horseback riders, cyclists, etc. the option of taking a road, even an unimproved road, around the east end of the proposed airport extension rather than brave Tucker Road between Nobi's corner and the south terminus of Orchard Road.

Thankyou for consideration.

J.E. "Jack" Sheppard
1200 Tucker Rd.

RECEIVED APR 2 2 2009

DAKINE

408 Columbia Street
Hood River, Oregon 97031

(T) 001 541 386 3166
(F) 001 541 386 6199

April 20, 2009

To: Airport Advisory Committee
Port of Hood River

From: Da Kine
William Bottomley, President

RE: Airport Master Plan

Per our review of the contemplated Airport Master Plan we concur with the position whereby the existing paved runway would be extended eastward to enhance safety and general operating conditions pursuant to the Hood River airport.

Our frame of reference on this matter is based upon the cumulative frequency whereby Da Kine utilizes the Hood River airport to conduct business travel. Aviation is predicated upon being a safe and reliable mode of transportation. Per the Airport Master Plan the enhancement of runway and situational safety is a condition precedent to further business development within our community.

Sincerely,

Da Kine
William Bottomley, President

@ PC hearing

Peter B. Cornelison
1003 5th St.
Hood River, OR 97031
541-386-4996
peterc@gorge.net

Hood River County Planning Commission
601 State Street
Hood River, Oregon 97031

April 22, 2009

RE: Hood River Airport Master Plan, Ken Jernstedt Airfield

Dear Sirs and Ms.

My name is Peter Cornelison and I live in the Hood River Heights near May Street School at 1003 5th Street. I am the President of Hood River Valley Residents Committee and I wish to comment on the Hood River Airport Master Plan and more specifically on retaining some connectivity for bicycle and pedestrian traffic on Orchard Road if the runway expansion is approved and the road is closed.

As a bike rider in the Hood River Valley one of the stretches of road I dislike the most - due to heavy, fast traffic and limited road shoulder - is Tucker Road heading north uphill after crossing Tucker Bridge. It poses a safety and traffic hazard for both motorists and bikes and HRVRC is going to work with ODOT to improve this section of highway.

Despite disliking this section of road, I and all other bikers are forced to use Tucker Road if we want to ride between the Middle Valley and Lower Hood River Valley.

If you have not bicycled on this section personally I would like to describe it briefly for you....Imagine squeezing through narrow Tucker Bridge with cars on either side, then road starts to climb around several bends as the hill gets harder. About that time the shoulder narrows to about 2 feet and there are cinders left over from winter on the side of the road where you ride. Cars and trucks are accelerating now to get up the hill as you round another corner... and the road gets steeper. Five minutes later, almost out of breath and asphyxiated from car exhaust you are at the top of the hill, success! As soon as possible you make a very welcome right hand turn on to Orchard Road. There you catch your breath filling your lungs with clean air and relax after the intense traffic assault on Tucker Hill. Another benefit is that Orchard Road lets you avoid Windmaster Corners and all the traffic congestion there. Orchard Road is a lifesaver!

In closing I ask you to specify that if the Port of Hood River wishes to close Orchard Road to vehicle traffic they retain a paved bike path for bikes and pedestrians around the end of the runway expansion. This will help prevent car/bike accidents and will save energy.

Thank you for your consideration and for this opportunity to speak tonight.

Sincerely,

Peter Cornelison, President
www.hrvrc.org

Ken Jernstedt Airfield Realignment

Hood River, Oregon

April 22, 2009

Subject: A historic and farm related perspective on the proposed realignment of the airport runway at the Ken Jernstedt Airfield.

As a young man (in the fifties) I liked to watch Mel Lingren or Jules Stanton fly their spray planes through Gene Wright's big sixty foot field sprinkler to wash them off after a day of work spraying the orchards. The field was grass and used mostly as a landing site for the spray planes. There was also a small open sided hanger which contained several personal airplanes.

Today the field is paved and has several more uses and lots of nonfarm related activity. There are antique airplanes, fire fighting airplanes and helicopters, gliders, personal airplanes of all kinds from light sport to small turbines, and even an occasional jet finds its way onto the field.

The old Stearman bi-wing planes have been replaced by helicopters and turbine Thrushes but the farm community still has a great need for the airfield. The economic return of the airfield to the farm community for aerial application of bactericides, including streptomycin sulfate for Fire Blight control and blowing rain water off cherries in the next few weeks could be in the hundreds of thousands of dollars.

My point is that the airfield at Hood River is as necessary for the farm community today, along with its many other uses, as it was as a grass strip way out in the country in 1955. These days, we must understand that to have a viable airport it has to be made an integral part of the community and operated on a long term basis. It has to be <u>our</u> airfield, it has to be safe, and it has to be sited correctly.

Sincerely,

John Benton

Ken Jernstedt Airfield Airport Master Plan 2009 Update

East Side Elevation Memorandum

Hood River County Planning & Building Services
601 State Street, Hood River OR 97031

MICHAEL BENEDICT, DIRECTOR
(541) 387-6840 • FAX (541) 387-6873
E-mail: plan.dept@co.hood-river.or.us

DEAN A. NYGAARD, BUILDING OFFICIAL
(541) 386-1306 • FAX (541) 387-6878
E-mail: building@co.hood-river.or.us

April 13, 2009

To: Hood River County Planning Commission

From: Eric Walker, Principal Planner

RE: East Side Elevation Inquiry

During the March 25, 2009 work session, questions came up regarding potential encroachments into the imaginary airspace resulting from the proposed 550-foot easterly shift of the airport runway and corresponding modifications to the Airport Height Combining Zone boundary. In response to these questions, staff reviewed USGS topographic maps, worked with the County Surveyor and Bonneville Power Administration (BPA) staff, and conducted a visual roadside inspection of the area. Based on these sources, the following information is provided:

Panorama Point: According to the County Surveyor, the elevation of Panorama Point is approximately 720 feet above sea level. Elevation drawings obtained from BPA (*enclosed*) indicates that the three concrete poles located atop Panorama Point are 68 feet tall each. Based on this information, the top of the power poles on Panorama Point is found to equal 788 feet above sea level. The imaginary airspace elevation above Panorama Point is estimated at 970 feet above sea level, which is approximately 182 feet above the top of the highest structure at this location.

Van Horn Butte: USGS maps show that the top of Van Horn Butte is at approximately 850 feet above sea level. The tallest trees located on the Butte were estimated at approximately 60 feet, which would make the highest point on Van Horn Butte at approximately 910 feet above sea level. The elevation of the imaginary airspace at this location is at approximately 975 feet above sea level. Based on these measurements, the highest point of the tallest trees on Van Horn Butte are determined to be approximately 65 feet below the elevation of the imaginary airspace after the proposed runway shift occurs.

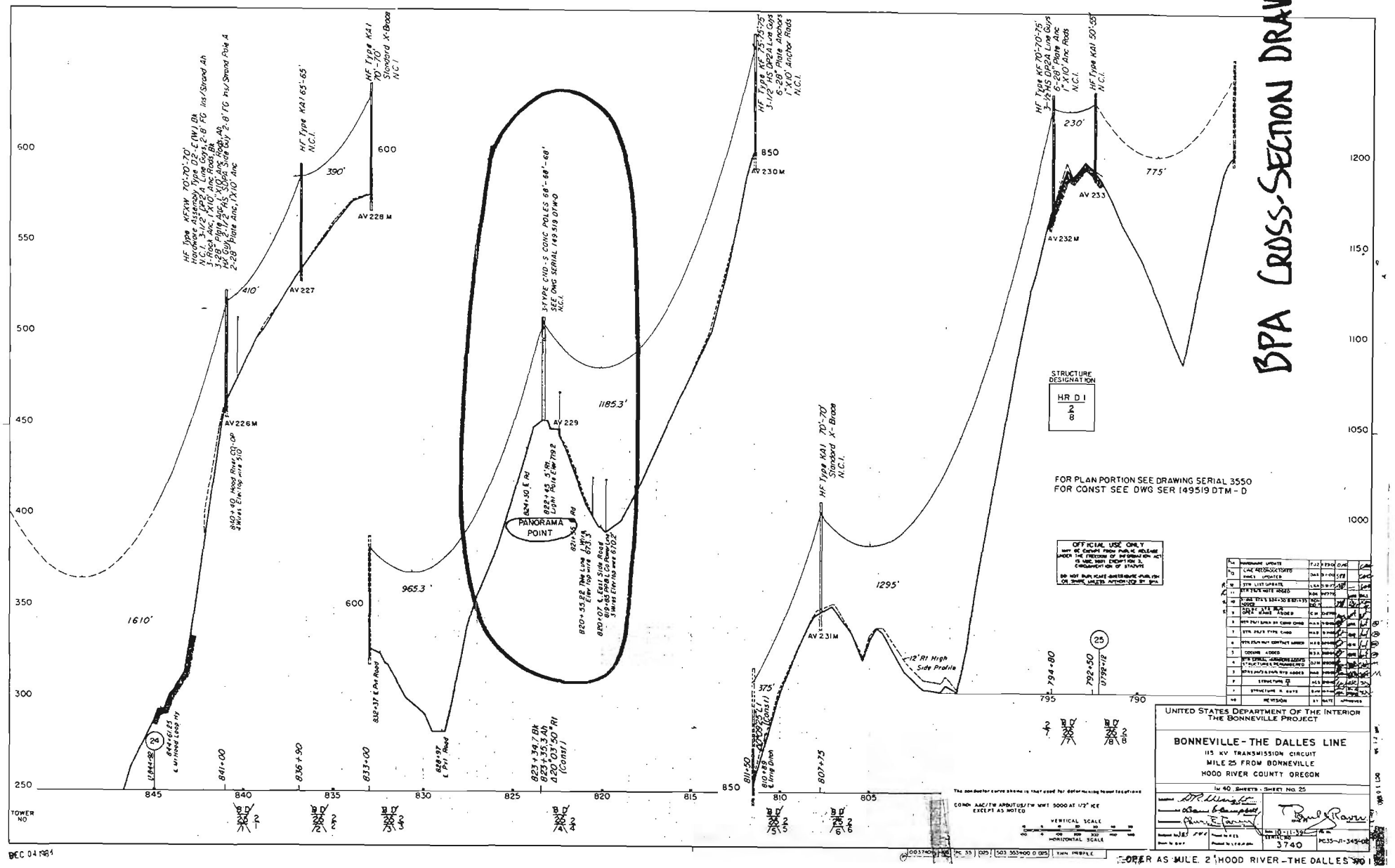
Other High Points: Besides Panorama Point and Van Horn Butte, the highest points within the future imaginary airspace are located approximately 700 feet southeast of Panorama Point, just east of Eastside Road (*±700' in elevation*); approximately 1,100 feet east of the intersection of Eastside Road and Paasch Drive (*±730' in elevation*), and approximately 1,500 feet southeast of the intersection of Dethman Ridge Drive and Gilkerson Road (*±730' in elevation*). [*For more information, see enclosed topographic map and corresponding photographs.*]

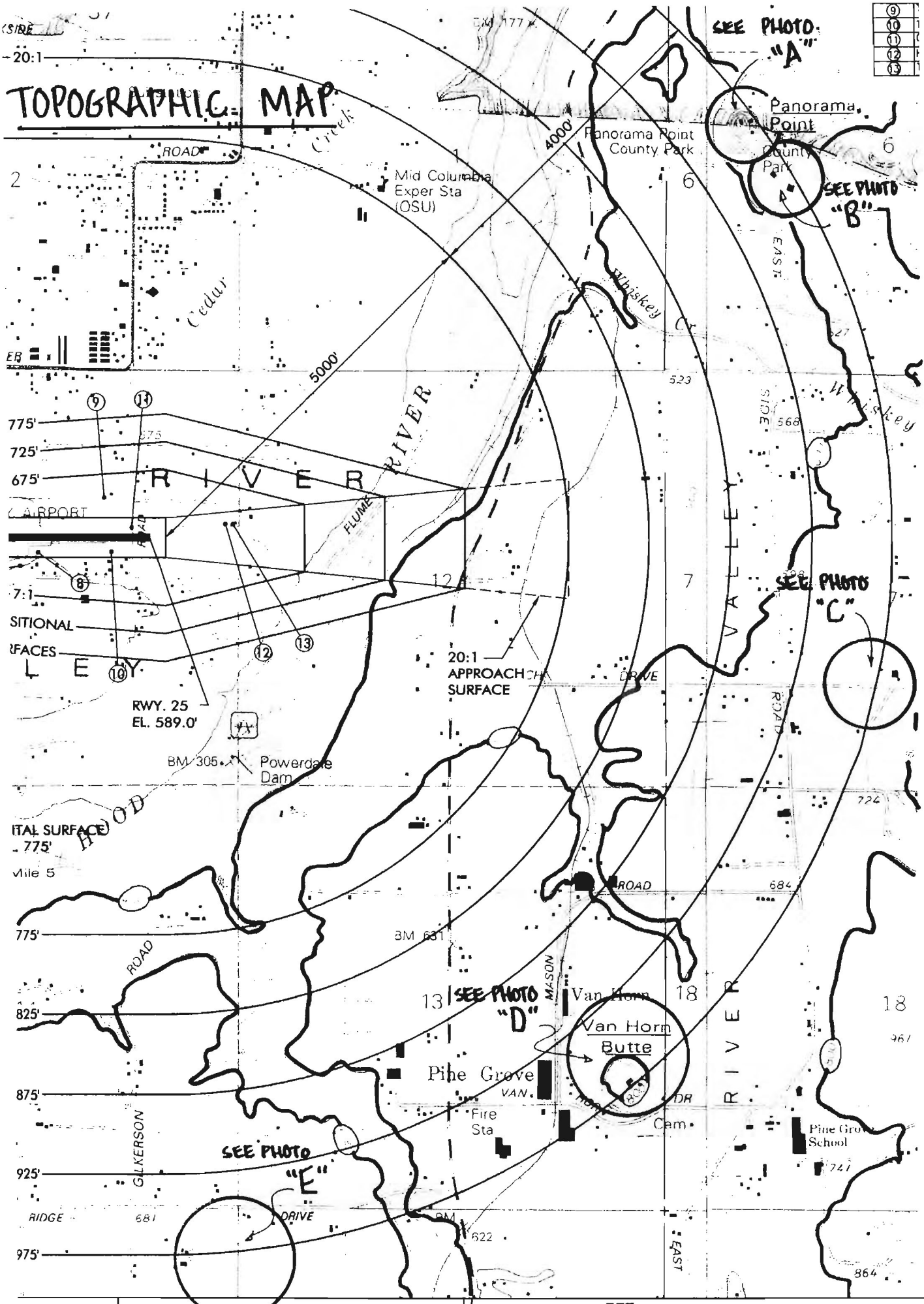
At a 20:1 ratio (*1 foot up for every 20 feet out starting at the edge of the Horizontal Surface*), the elevation of the imaginary airspace between the current and future edge of the Conical Surface will range between approximately 950 and 975 feet above sea level. At approximately 700 to 730 feet above sea level, the difference in elevation between the highest points in the area (*excluding Panorama Point and Van Horn Butte*) and the proposed imaginary surface is about 150 feet. During a visual inspection of these areas (*see enclosed photographs "B," "C," and "E"*), staff was unable to find any structures or vegetation that was more than 150 feet in height and, therefore, capable of penetrating the imaginary surface given the land elevations involved.

Based on the above information, staff concludes that there are no existing structures or vegetation within the proposed shifted airspace area that would penetrate the imaginary airspace in conflict with County requirements.

Enclosures: *BPA Cross-Sectional Diagrams*
Topographic Map with Photograph Index
Photographs of the Areas Discussed (Photos "A" through "E")

BPA Cross-Section Drawing





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CONCRETE UTILITY POLES @ PANORAMA POINT

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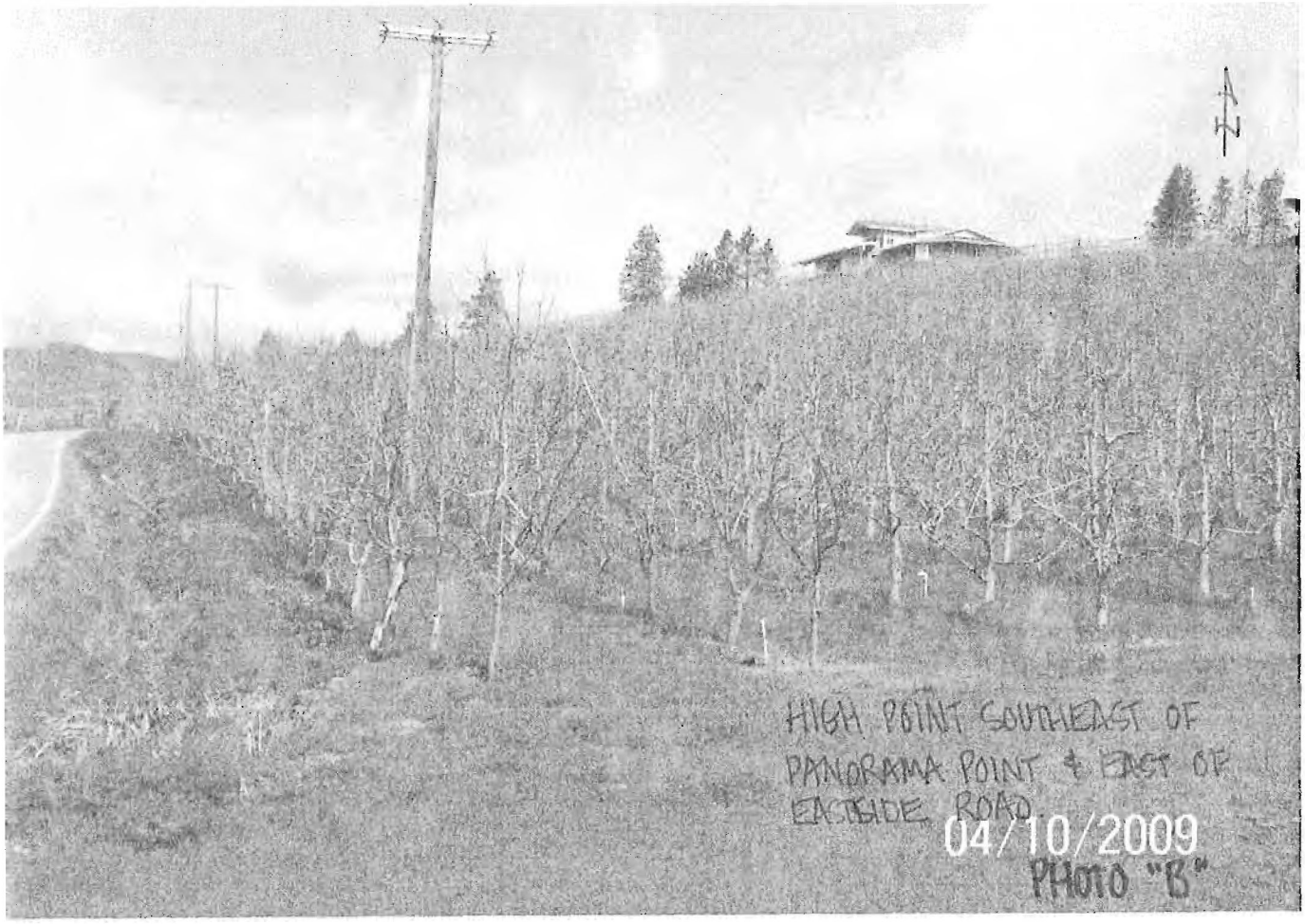

HIGH POINTS EAST OF THE INTERSECTION @ EASTSIDE RD & PAASCH DRIVE

VAN HORN BUTTE

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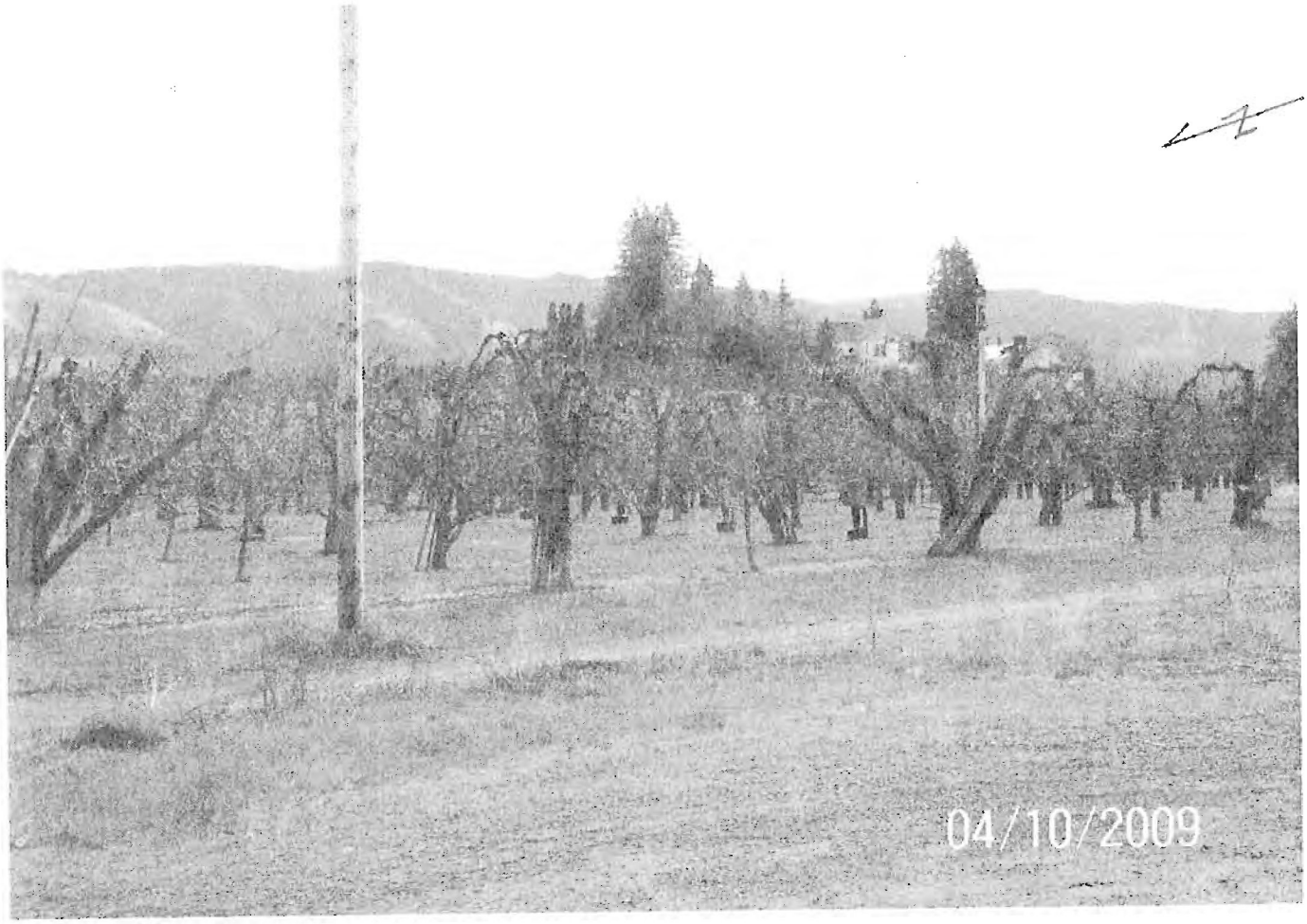

HIGH POINT SOUTHEAST OF THE INTERSECTION AT DETHMAN RIDGE DRIVE & GILKERSON RD.

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Ken Jernstedt Airfield Airport Master Plan 2009 Update

Future Orchard Road Vacation White Paper

COLUMBIA
PLANNING + DESIGN, INC

March 13, 2009

To: Hood River Planning Commission

From: Scott Keillor, AICP

Re: Future Orchard Road Vacation White Paper

I. Background

The Port of Hood River has requested the County adopt its Ken Jernstedt Airfield Master Plan Update, 2009 (Airport Master Plan; AMP) into the Hood River Comprehensive Plan, Transportation System Plan, and Ordinances. The primary purposes of the master plan update are to:

- Enhance safety
- Plan for needed facilities
- Ensure the longevity of the airport

Key components of the master plan include the following projects subject to future funding:

- A shift in the runway 550' east and away from Tucker Road/Highway 281. This runway shift maintains the existing 3,040' runway length, and requires the future vacation and termination of Orchard Road east of the runway. Fire and emergency vehicle turnarounds would be installed in the new Orchard Road dead end configurations both northbound and southbound.
- Relocating the northern taxiway 35' north to meet requirements for 240' of clearance from the runway to the taxiway.
- Long term plans to relocate the fueling station and services now located on the south side of the airport to the north side in order to avoid planes crossing the runway.

At its October 22, 2008 meeting, the Planning Commission asked the Port to prepare a concise, fully updated plan. This involved revisions to the Master Plan to delete all references to a future instrument approach landing system, which avoids a potential expansion of regulated airspace. In addition, the Port was asked to prepare the new comprehensive plan and code update sections. Finally, the Commission requested a white paper on the future vacation of Orchard Road because the vacation is an integral part of the AMP adoption request. The Commission is fully aware that the Board of County Commissioners will make the decision on the future road vacation request.

This memorandum serves as the requested white paper, including the traffic analysis (Exhibit 4). This memo analyzes positive and negative impacts of the road vacation – which would eliminate a 700' section of roadway and break Orchard Road into a 1,600' northern section and a 5,600' southern section. See Figures 1 through 5: Aerial View and Photographs; and Attachment A above for memos from Don Wiley, Public Works Department, and Jim Trammell, Fire Marshal.

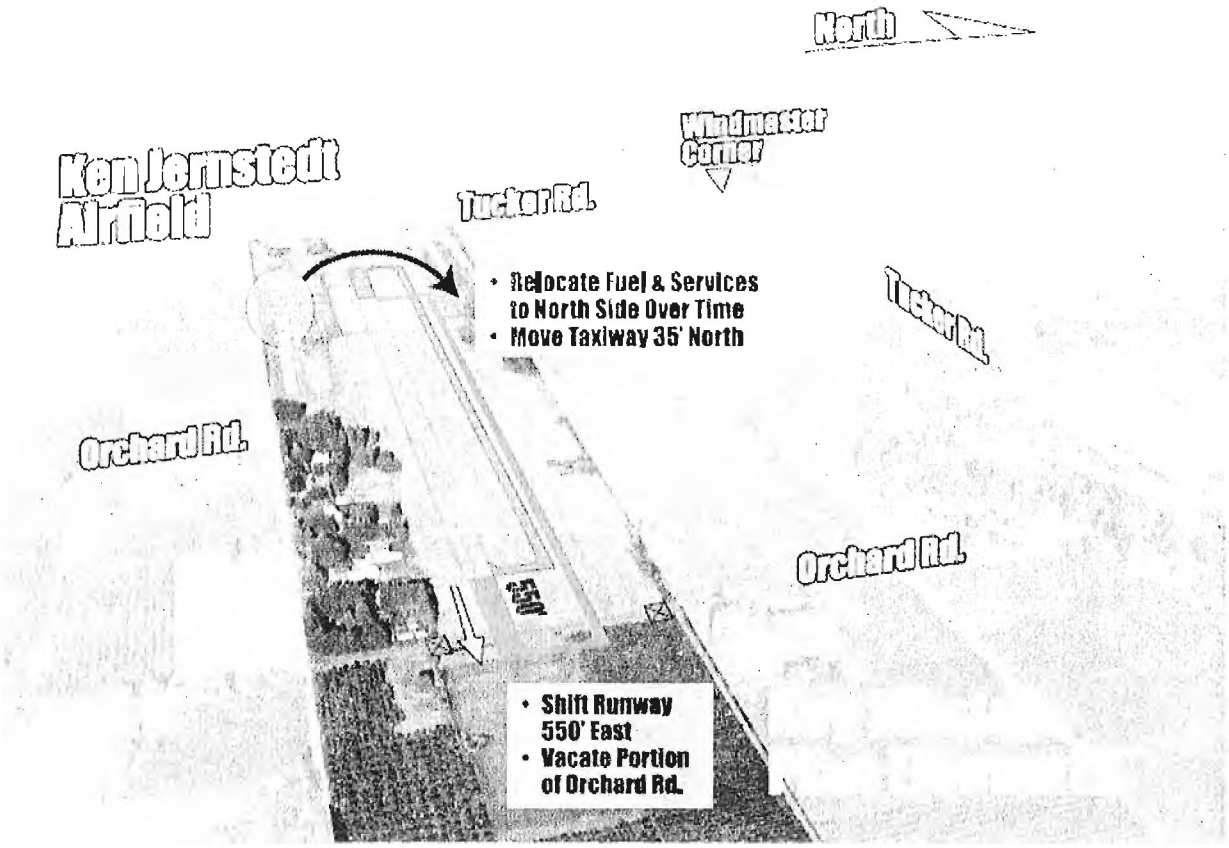

Figure 1. Aerial View of Orchard Road Vacation (area between the red "x" symbols)

Figure 2. View West to Airport Runway

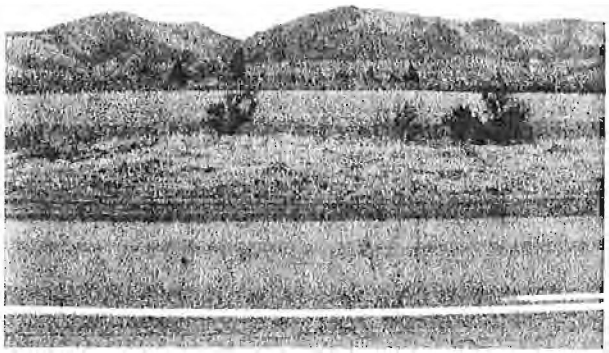

Figure 3. View East at Runway Shift Area

The termination of Orchard Road immediately adjacent east of the airport would eliminate approximately 1,000' of its connectivity between Tucker Road NE and SW of the airport.

Figure 4. View North to Road Vacation Area

Figure 5. View South to Vacation Area

This analysis addresses five areas of concern, weighs the pros and cons or impacts of the vacation and provides a recommendation. Areas of concern include:

1. The Road Vacation Criteria
2. Airport Safety
3. Automobile Traffic Impacts
4. Pedestrian and Bicycle Impacts
5. Emergency Response Time
6. Utility Impacts

Note that local and state Road Vacation standards are summarized below for reference, and a more complete analysis will be required during a future Orchard Road Vacation process.

II. Areas of Concern

1. Road Vacation Criteria

Chapter 7 of the Hood River County Road Manual sets forth the requirements for processing a road vacation, including compliance with ORS 368.326 to 368.366. The County may refine the state process to meet local needs, but its process essentially parallels state law. The state statute generally allows a vacation to be initiated by the governing body or via a petition by adjoining property owners. Where the request is by petition, it must be signed by owners of 60% of the abutting land area (i.e. by owners of 6 out of 10 acres) or by 60% of the ownership of abutting land (i.e. 6 of 10 owners). A report is then completed by the County Road Official, which is

presented at a public hearing to be held only after notice to adjoining property owners. A public hearing is not required where 100% of the land owners sign the petition and the County Road Official files a report finding the vacation is in the public interest.

Observation: The Port owns 100% of the land adjoining the proposed vacation area, and if the County Road Official writes a report that finds the vacation is in the public interest, the vacation could be completed without a public hearing. Alternatively, the County could hold a public hearing on the matter – regardless of the statutory provision allowing action without a hearing.

Road Vacation Process – Options

Option 1. Public Hearing

Pro. A public hearing will provide further opportunity to gather public comment, and help supplement the County Engineer's findings in making a determination regarding whether the vacation is in the public interest.

Con. The hearing approach would add an additional opportunity for input beyond the master plan adoption process, which involves two Public Open Houses, several workshops and public hearings. The process takes time, and is not a negative factor beyond the recognition of staff time, energy and costs required to complete the additional vacation hearing.

Option 2. No Public Hearing

Pro. If the County finds the vacation generally to be in the public interest and the County Road Official agrees, then a future hearing on the matter could be avoided.

Con. If the Planning Commission and/or County Road Official have concerns, then the hearing approach would ensure a forum in which to resolve any outstanding issues to ensure the proposal is in the public interest. In this case, the Planning Commission may want to make a recommendation to the Board of County Commissioners asking them to hold a public hearing on the vacation.

2. Airport Safety

The primary purpose of the Airport Master Plan update is to enhance airport safety. The Runway Protection Zone (RPZ) is located on the ends of each runway. The RPZ presently includes the Twin Peaks Restaurant and both Orchard Road and Tucker Road/Highway 281 within an area that should not allow development. The Oregon Department of Aviation (ODA) has advised that there are two elements of revision required to comply with OAR 660, Division 13, Airport Planning Rule. The first is to enforce a no build in the RPZ; and the second is to mitigate against noise impacts for residential uses within noise contour 65DB and greater.

The master plan adoption process addresses both; and enhancing safety as follows:

- The runway shift moves the runway 550' east and thereby moves the RPZ across Tucker Road and places it entirely on Airport property (no longer impacting the Twin Peaks Restaurant property or Highway 281).
- The runway shift results in a need to vacate Orchard Road, and enhance safety for autos, bicycles and pedestrians. There have been reports of close touchdowns of airplanes on the westbound approach. This is due to an air current phenomenon known as a "down draft" that that has reportedly caused some early landing touchdowns that could endanger the public using Orchard Road.
- The planned future movement of the FBO, fueling and services to the north side of the airport will eliminate the need for planes to taxi across the runway for services. This alignment of taxiway and services on the north side will ultimately ensure less opportunity for conflict between planes using the runway and those taxiing for services.

Airport Safety – Options

Option 1. Vacate Orchard Road

Pro. The Orchard Road vacation would enhance airport safety and safety for the public by shifting the runway away from Highway 281 and across Orchard Road. Factors include movement of the Runway Protection Zone (RPZ) fully onto the western Airport Property; closure of Orchard Road and removing "down draft"- related, early touchdown landing conflicts.

Con. The vacation of Orchard Road will necessarily impact emergency response times. The Fire Marshal has conducted response time trials and the delayed response time results are given in the Draft Staff Report, Attachment A. Please see Emergency Response Time section below.

Option 2. Do not Vacate Orchard Road

Pros. There would be no impacts to emergency response time.

Cons. The AMP update would be undermined, and safety concerns outlined above would remain.

3. Automobile Traffic Impacts

The proposal would require local traffic patterns to reroute around the vacation area, with southbound residential and farm traffic on north Orchard Road and Nunamaker Road having to travel out-of-direction north to Tucker Road/Highway 281 and through Windmaster Corner. Residential and farm traffic on southern Orchard Road, Copper Dam Road and Winston Road would no longer be able to drive directly north through Nobi's Corner, also increasing travel times by diverting trips south to Tucker Road and then north through Windmaster Corner. Although the County's Transportation System Plan encourages connectivity, the Port indicates that any requirement to reroute Orchard Road to circumvent the new runway and RPZ (the eastern 30 acres) would be cost prohibitive. In addition, traffic study findings show that the

proposed Orchard Road Vacation would slightly increase trips but not alter levels of service (LOS) for key intersections. The study also indicated an existing sight distance issue on the north leg of the Nobi's Corner (NE Tucker Road/Orchard Road) intersection based on the existing vertical curve. Bicycle, pedestrian and emergency vehicle impacts are discussed below.

Automobile Traffic Impacts – Options

Option 1. With Road Vacation

Pro. The traffic study shows all key intersections will operate at acceptable levels of service (LOS). Also, reported "race track" – style speeding would be curtailed with a road vacation.

Con. Connectivity will diminish with a vacation, requiring more trips to divert onto Tucker Road/Highway 281. This includes some loss of convenience and greater travel times for some residents.

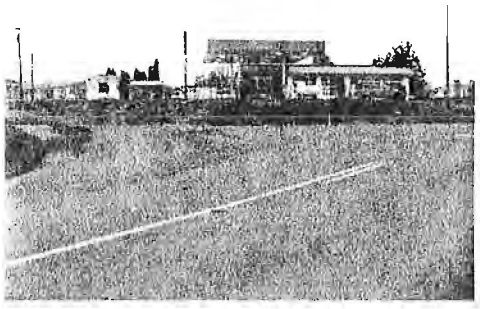

Figure 6. Nobi's Corner

Option 2. With No Road Vacation

Pro. Without a vacation, there would be no impacts to connectivity, traffic patterns would not be altered, and local travel times would not be extended.

Con. Airport operational safety concerns discussed above would not be remedied.

4. Pedestrian and Bicycle Impacts

Vacation of Orchard Road would also impact bicycle and pedestrian connectivity, which is supported by the County's Transportation System Plan. The vacation would require cyclists and those on foot to circulate north or south to Tucker Road/Highway 281. Although there may be a workable option for rerouting a pathway for bicycle and pedestrian traffic to avoid the runway, FAA standards discourage use that encourage public gathering in a Runway Protection Zone (RPZ). For this reason a pathway is not recommended on airport property.

Pedestrian and Bicycle Impacts – Options

Option 1. With Road Vacation

Pro. The vacation would reduce cut-through traffic and speeding on Orchard Road, making bicycle and pedestrian travel somewhat safer.

Con. Approval of the vacation would increase neighborhood travel times; especially for Orchard Road neighbors who now enjoy easy bicycle and pedestrian access north and south of the airport via Orchard Road.

Option 2. Without Road Vacation

Pro. Connectivity would be maintained for pedestrians and bicyclists.

Con. Airport safety concerns would not be remedied; including concerns for pilots and the public using Orchard Road. Reports of early touchdowns for planes on a westbound approach due to "down draft" conditions impair safe travel along Orchard Road immediately east of the runway. Higher automobile traffic volumes and speeding would likely continue, and thereby continue to compromise bicycle and pedestrian safety to some degree.

5. Emergency Response Time

The Orchard Road area is served from two stations: the West Side Station north of the site on Tucker Road; and the Rockford Station on Barrett and Markham, west of the site. According to Jim Trammell, West Side Fire District Fire Marshal, the vacation would impact response times for fire and emergency vehicles (Attachment A above). In summary, the trials conducted in traffic without a siren showed the greatest impact with a road vacation would be to ambulance service to Winston Road from the City Fire Station (estimated to double from 5 to 10 minutes); and for fire engine response to Winston Road from the Tucker Road Fire Station (estimated to increase from 2.5 minutes to 6.5 minutes).

The Fire Marshal said the proposed Fire Gate would be welcome, but that such gates also impact response times. For responses to south Orchard Road, there may be a faster route from Rockford Station via Markham to Portland Drive. This route may also provide an important secondary response route should Tucker Road be blocked or closed for any reason. The Fire Marshal tested the existing and alternative routes with the vacation, reporting projected impacts to response times by traveling without sirens. The response time test results were then reduced by 10% to account for time saved with sirens.

In his memo, the Fire Marsha notes the limitations and use of the trial data, and gives actual response times to Winston Road of 6 minutes and 7 minutes 45 seconds – this would mean response times could be delayed for just under 2 minutes, rather than the 5 minutes estimated by the trial. In addition, he notes that response times to the top of Binns Hill are about 9 to 12 minutes longer than to Winston Road. According to the Fire Marshal, first responders would not be impacted by the vacation, and would be on site to either remote location to administer assistance while the ambulance is in route.

The Fire Marshal also asked about residential growth potential in the area, which is limited by large lot residential and farm use zoning that is primarily developed. Growth pressure for enhanced emergency services in the Orchard Road area is forecast to be minimal.

Emergency Response Time – Options

Option 1. With Road Vacation

Pro. The vacation will impact response times, but new cul-de-sacs, fire gates and alternative response routes help to mitigate these impacts. The Fire Marshal indicates that first responders will not be impacted by the Road Vacation.

Con. Vacation of Orchard Road is expected to have a negative impact on emergency response times. The Fire Marshal conducted trial runs, estimating a doubled response time (from 5 to 10 minutes) for ambulance service and more than twice the fire engine response time (from 2.5 to 6.5 minutes to Winston Road, located just south of the proposed road vacation area. He also stated that actual response times show impacts may be reduced to about 2 minutes when comparing the trial ambulance run at 10 minutes with a vacation to the actual recent runs of 6 minutes and 7 minutes 45 seconds.

Option 2. Without Road Vacation

Pro. There would be no impact to emergency response times without a road vacation.

Con. With no vacation, there will be no safety enhancements as outlined above per the Airport Master Plan (AMP). A major accident involving Highway 281/Tucker Road and/or Orchard Road is possible as a result on non-action on the road vacation. Testimony from pilots and operators expressing airport safety concerns with current configuration is pending, but is expected prior to the March 25th Planning Commission Work Session.

6. Utility Impacts

There is a 10" Farmers Irrigation line and an 8" Ice Fountain water line in Orchard Road within the vacation area, per the preapplication conference notes (Attachment A above). There may be other utilities present (gas, electric, phone, domestic water, etc) within the vacation area that would need to be accommodated. The Port proposes to provide easements so that all public utilities can remain in place. The airport's Fixed Base Operator (FBO) routinely puts out bulletins and answering machine messages that pilots check as part of the flight path planning. This system is commonly used at other airports to advise of any utility repair needs that would close the runway short term.

Utility Impacts – Options

Option 1. With Road Vacation

Pro. The vacation would not impact utilities, which would be placed in easements and allowed to remain in place.

Con. The Airport FBO is confident that pilots will be adequately informed if a utility repair; however this requires a temporary runway closure.

Option 2. Without Road Vacation

Pro. There would be no impacts to utilities without a road vacation.

Con. There is no down side for utilities without a road vacation.

Recommendation

The Planning Commission will want to carefully review the above information together with comments from the Fire Marshal and Public Works Department in Attachment A above in order to weigh the need for airport safety in light of impacts to neighborhood emergency response times. Although the Road Vacation decision is a future decision of the Board of County Commissioners, the Planning Commission recognizes this future action to be an integral part of the Airport Master Plan (AMP) Update, which it is being asked to adopt prior to the vacation proceedings. Based on the above facts, staff and consultant recommend the Commission weigh the Fire Marshal's findings which indicate reduced emergency response times against the facts within the Draft Staff Report and pending testimony by local pilots and operators concerned about airport safety. If the Commission finds the public interest is best served through the future vacation, staff and consultant recommend this element of the AMP be supported, including a newly proposed Goal 12 policy to support the future vacation of Orchard Road.

Ken Jernstedt Airfield Airport Master Plan 2009 Update

Hood River County Road Manual:

Road Vacation Process

CHAPTER 7: VACATION OF PUBLIC PROPERTY

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CHAPTER 7: VACATION OF PUBLIC PROPERTY

7.000 INTRODUCTION. A public area or a public interest in an area under county jurisdiction may be vacated when a county governing body determines the public use is no longer required and that discontinuance of public usage would be in the public's interest. Unless the owner consents, vacation of public lands is not allowed if the vacation would deprive the owner of a recorded property right the access necessary for the exercise of the recorded property right. This principle applies to county roads, local access roads, and other properties.

The vacation procedures outlined in ORS 368.326 to 368.366 may be followed by a county. The county may also refine or improve this procedure to meet local needs, but supplemental county procedures may not conflict with other state laws or constitutional protection.

The vacation procedures apply to all property in the county that is outside cities, including private interests such as subdivision plats. These vacation procedures, if used for vacation of a subdivision, supplement ORS 92.205 to 92.245, which may be used for vacation of an undeveloped subdivision. The county or public interest usually pertains to a road, but could involve a public square, trail, or any other public property. Once vacated, county-owned land, including vacated right-of-way, in which the county has fee title may be disposed of by established sale procedures.

The vacation of most property within a city is up to the city, using procedures of ORS 271.080 to 271.230 and city regulations. However, if property within the limits of a city is under county jurisdiction, the county may act to vacate the property providing the city concurs.

The statutes described in this chapter have replaced previous statutes addressing the vacation of public lands, towns and plats as well as previous statutes addressing the vacation of county roads and county line roads. Persons who were familiar with the road vacation statutes prior to 1981 may notice there no longer is a reference to road right-of-way not being extinguished by adverse possession. Since protecting public land from loss by adverse possession is not directly related to vacation of road right-of-way, the two subjects were separated with the repeal of ORS 368.620 by 1981 c 153, sec. 79. Those having a reason to refer to the law exempting public land from loss by adverse possession should see ORS 275.027.

7.100 STATUTORY SUMMARY. ORS 368.326 to 368.426 contain procedures for vacation of public roads and other property. Vacation may be initiated by resolution of the county governing body or by petition of individuals. If by petition, acknowledged signatures of owners of 60 percent of the abutting land or 60 percent of the owners of abutting land must be included. A report of the proposed vacation must then be made by

the county road official, notice must be given to owners of abutting land, and a hearing must be held to consider the proposed vacation. Notice and hearing are not required if the petition for vacation includes the signatures of the owners of 100 percent of the private property internal to the area to be vacated and owners of 100 percent of the land abutting any public property involved and if the county road official files a written report that the vacation is in the public interest. As used here, a public agency owning property outright should be considered to be within the meaning of owners of private property.

The county governing body determines if the vacation is in the public interest and issues an order granting or denying the vacation. Costs are established and persons liable for payment are determined by the governing body. The order directs payments of established costs by those liable.

Vacation of public land affecting two counties or a county and a city requires coordinated action and individual orders by the governing bodies involved.

The governing body may determine ownership (vesting) of vacated property in the order or resolution vacating the property. Generally, vacated road right-of-way vests in the owner holding underlying title. When not otherwise provided, property usually vests by extending boundaries of abutting property to the center of the vacated property. Vacated public squares vest in the county.

(a) A description of the ownership and uses of the property proposed to be vacated;

(b) An assessment by the county road official of whether the vacation would be in the public interest; and

(c) Any other information required by the county governing body.

(2) Upon receipt of the report under subsection (1) of this section a county governing body shall establish a time and place for a hearing to consider whether the proposed vacation is in the public interest.

(3) Notice of the hearing under this section shall be provided under ORS 368.401 to 368.426 by posting and publication and by service on each person with a recorded interest in any of the following.

(a) The property proposed to be vacated;

(b) An improvement constructed on public property proposed to be vacated; or

(c) Real property abutting public property proposed to be vacated.

(4) During or before a hearing under this section, any person may file information with the county governing body that controverts any matter presented to the county governing body in the proceeding or that alleges any new matter relevant to the proceeding. [1981 c.153 §38]

368.351 Vacation without hearing. A county governing body may make a determination about a vacation of property under ORS 368.326 to 368.366 without complying with ORS 368.346 if:

(1) The county road official files with the county governing body a written report that contains the county road official's assessment that any vacation of public property is in the public interest; and

(2) The proceedings for vacation under ORS 368.326 to 368.366 were initiated by a petition under ORS 368.341 that contains the acknowledged signatures of owners of 100 percent of any private property proposed to be vacated and acknowledged signatures of owners of 100 percent of property abutting any public property proposed to be vacated. The petition must indicate the owners' approval of the proposed vacation. [1981 c.153 §39]

368.356 Order, damages and costs in vacation proceedings. (1) After considering matters presented under ORS 368.346 or 368.351, a county governing body shall determine whether vacation of the property is in the public interest and shall enter an order or resolution granting or denying the vacation of the property under ORS 368.326 to 368.366.

(2) An order or resolution entered under this section shall:

(a) State whether the property is vacated;

(b) Describe the exact location of any property vacated;

(c) Establish the amounts of any costs resulting from an approved vacation and determine persons liable for payment of the costs;

(d) Direct any persons liable for payment of costs to pay the amounts of costs established; and

(e) If a plat is vacated, direct the county surveyor to mark the plat as provided under ORS 271.230.

(3) When an order or resolution under this section becomes final, the county governing body shall cause the order to be recorded with the county clerk and cause copies of the order to be filed with the county surveyor and the county assessor. The order or resolution is effective when the order or resolution is filed under the subsection.

(4) Any person who does not pay costs as directed by an order under this section is liable for those costs. [1981 c.153 §40]

368.361 Intergovernmental vacation proceedings. (1) Notwithstanding ORS 368.326, a county governing body may vacate property that is under multiple public jurisdiction or that crosses and recrosses from public jurisdiction to public jurisdiction if:

(a) Vacation proceedings are initiated by each public body with jurisdiction;

(b) The public bodies proceed separately with vacation proceedings or conduct a joint proceeding; and

(c) Each public body reaches a separate decision about the proposed vacation.

(2) Each public body must reach a separate decision to vacate property under this section before the vacation may be completed. If each public body has determined that the property should be vacated, each public body shall issue a separate order or resolution vacating those portions of the property under their respective jurisdiction.

(3) Notwithstanding ORS 368.326, a county governing body may vacate property that is under the jurisdiction of the county and that is entirely within the limits of a city if that city, by resolution or order, concurs in the findings of the county governing body in the vacation proceedings.

7.120 CITATIONS

Cabell v. Cottage Grove, 170 Or. 256, 130 P.2d 1013 (1942): A municipality may not barricade and close roads without vacation proceedings.

McGowan v. Burns, 173 Or. 63, 137 P.2d 994, 139 P.2d 785 (1943): An owner of land abutting a road has a common law right of access to that land from the road. The abutter's rights, however, do not attach to highways designated as throughways at the time of their initial construction. ORS 374.420(2).

Sweet v. Irrigation Canal Co., 198 Or. 166, 254 P.2d 700, 256 P.2d 252 (1973): An abutting land owner's entitlement to full use of a public easement is a property right and may not be taken without just compensation.

Oregon Investment Co. v. Shrunk, 242 Or. 63, 408 P.2d 89 (1965): Restriction of access to abutting land owner's property along a road is not a taking if adequate access to property remains and the restriction is in the public interest.

Fahey v. Bend, 252 Or. 267, 449 P.2d 428 (1969): When the title of property abutting a road has passed prior to the vacation of that road, it is assumed that the grantor intended that title in the street portion of the lot also passed at the time of the conveyance, unless stipulated otherwise.

Fowler v. Gehrke, 166 Or. 239, 111 P.2d 831 (1941): Prior statutory law adopted the common law rule that unless fee in land previously existed, the vacant land attaches to abutting property equally.

Holmes v. Graham, 159 Or. 466, 80 P.2d 870 (1938): The writ of review is the proper remedy when contesting vacation proceedings.

Harding v. Clackamas County, 89 Or. App. 385, 750 P.2d 167 (1988): Road official must give an affirmative and unequivocal recommendation that road vacation is in the public interest for a vacation without a hearing. A developer in the process of purchasing abutting property cannot petition for a vacation as a property owner. Failure to follow vacation procedures and giving notice when required renders the vacation a nullity.

Wilkins v. Lane County, 65 Or. App. 494, 671 P.2d 1178 (1983): A duly-established public road may not be lost of the public under the doctrine of common-law abandonment, but only pursuant to ORS 368.326 et seq.

Strawberry Hill 4-Wheelers v. Benton County Bd. of Commissioners, 287 Or. 591 (1979): County road vacation proceedings, while having a component of legislative discretion, are quasi-judicial in nature. Once the county governing body decides to conduct such a proceeding, judicial review is possible and is not precluded because of legislative discretionary elements in the decision-making process. Judicial review does not extend to discussion of the utility of a road.

as the measure of benefit. Since the land vacated does not normally become the property of the county,[1] it is not available to sell. Thus, any charge needs to avoid the characteristics that constitute a sale. The following Eugene code sections 7.595 to 7.605 illustrate one charge system.

[Eugene Code] 7.595 Vacation of Streets and Alleys - Deposit of Petitioner. Whenever a petition for the vacation of a street, alley or a part thereof or other public place or part thereof for the vacation of an easement is presented to the finance officer for filing and consideration by the council, the person presenting the petition shall deposit with the finance officer a fee as established by resolution of the council. This deposit will be used to pay the cost of publishing and position notices of the proposed vacation and other expenses as are incurred. In case the cost exceeds the amount of the deposit, an additional sum sufficient to cover the deficiency shall be collected by the finance officer before the vacation is completed.

[Eugene Code] 7.600 Vacation of Streets and Alleys - Grant or Denial of Petition. (1) The council may, upon hearing a petition for the vacation of a street, alley or other public place, grant the same in whole or in part, or may deny the same in whole or in part, or may grant the same with reservations as would appear to be for the public interest; including reservations pertaining to the maintenance and use of all public utilities in the portion vacated, and may make an assessment and provide for the payment to the city a sum of money as the council may find to be just and equitable as an assessment of special benefit on the real property abutting on the street or alley or a benefit to the property which, by reason of the vacation abuts on a street or alley, and the cost of curbs, drainage, paving, sewer or other local improvement already completed or to be constructed upon the property vacated. The assessments, together with all costs shall not exceed the amount of special benefit resulting or inuring to the abutting property by reason of the vacation.

(2) In the event a petition is wholly denied, the deposit shall be retained. Any money retained, and any sum assessed and collected as benefits, shall be paid into the finance office.

[Eugene Code] 7.605 Vacation of Streets and Alleys - Notice of Proposed Assessment. Notice of proposed assessments of benefits shall be given to the owners of the property to be assessed at least seven days before the council meeting at which the assessments are to be considered or made. The finance officer shall cause notice to be given either by publication in one issue of a newspaper of general circulation in the city or by sending by certified mail to the owner of each parcel of real property proposed to be assessed, at the address of the owner as is contained in the assessment records in the office of the assessor of the county. The notice shall contain a statement of the names, addresses and amount of proposed assessment of each landowner alleged benefitted by the vacation and hour, date and place of the meeting of the council which will consider objections to the vacation or to the assessment.

1. See Fowler v. Gehrke, 166 Or. 239, 111 P.2d 831 (1941).

in county ownership until it was sold by the county. An exception to the rule on attachment occurs when vacated property is a public square. In this case, the property vests in the county.

7.520 EASEMENTS OVER VACATED PROPERTY. Because right-of-way serves as the location of various public facilities and utilities, the county's order of vacation may, and often does, reserve easements within the area being vacated. This may be done by a general preservation of easements or by a more specific description of easements to be preserved. As a condition of vacation, formal easements for any continuing uses must be recorded in the county property records. This is necessary to protect both the easements and future buyers of the property.

7.525 VACATION OF UNDEVELOPED SUBDIVISIONS. ORS 92.205 to 92.245 contain procedures for vacation of undeveloped subdivisions. These procedures are to be used predominantly when an undeveloped subdivision that was approved before adoption of a comprehensive plan fails to conform to current comprehensive plan and zoning provisions. The agency or body reviewing the subdivision may, after a hearing, require a revision of the subdivision or vacate the subdivision by adopting an ordinance to that effect. Alternatively, an owner of property within a subdivision may request that the procedures in ORS 368.326 to 368.426 be used by the county to vacate a subdivision or some portions of a subdivision, or the county governing body may utilize its legislative authority to expand subdivision vacation procedures. Vacation of a subdivision normally vacates any local access roads within the subdivision.

7.530 VACATION WITH 100 PERCENT CONSENT. ORS 368.351 allows for procedural simplification when owners of all property to be directly affected by a vacation have signed a petition both seeking and approving the vacation. In this case, the section allows vacation to occur "without complying with [the notice and hearing requirements of] ORS 368.346," if the vacation is assessed by the county road official as "in the public interest." Note that ORS 368.356 requires the county governing body to make the final determination as to whether the vacation is in the public interest. Thus, consideration of a 100 percent vacation proposal is not terminated if the county road official determines that the vacation is not in the public interest. Instead, the road official must complete the report required by ORS 368.346 and the notice and hearing procedures must be followed. The sample forms in this chapter contain an example of 100 percent vacation proceedings supplemented by notice and hearing. As a practical matter, if a county road official is unable to assess a vacation as being in the public interest, it may be well to advise the petitioners before proceeding that there may be added costs under the notice and hearing procedure.

7.702 ORDER SETTING FEE SCHEDULE

BEFORE THE BOARD OF COMMISSIONERS
FOR MARION COUNTY OREGON

In the Matter of Increasing the Fees for Road Vacation Actions.

In the Matter of Increasing the Fees for Road Vacation Actions.) Public Works

ORDER

This matter came before the Board of Commissioners at a regular public meeting on _____, 1994, to receive a request from Public Works to increase the fees associated with road vacation actions.

IT APPEARING to the Board of Commissioners that ORS 368.356 authorizes the Board to recover all costs associated with processing road vacation actions; that the current fee of $125 is substantially below the actual average costs $675 for processing road vacation actions; now, therefore,

IT IS ORDERED that the fee to be collected by Marion County Department of Public Works for filing a road vacation request shall be increased from the current fee of $125 to a fee of $550.

Dated this _____ day of _____, 1994.

BOARD OF COMMISSIONERS

_____
Chair

_____
Commissioner

_____
Commissioner

PROCEDURE FOR A ROAD VACATION

I. Initiating a Vacation

A. Petition by Landowners

A petition can be delivered by Petitioner(s), or their attorney along with the prescribed filing fee of $125.00 plus the $550 cost prescribed by Public Works to the Marion County Department of Public Works. Two checks shall be made out, one to Marion County Department of Public Works for $550 and one to Marion County for $125.

The petition must include:

1. A legal description of the road proposed to be vacated.

2. A statement of the reasons for requesting the vacation of the road.

3. Names and addresses of all persons affected by the road proposed to be vacated.

4. Notarized signatures of either owners of 60 percent of the land abutting the road proposed to be vacated or 60 percent of the owners of land abutting the road proposed to be vacated.

Sample petitions as well as help in writing the legal description are readily available from the Department of Public Works.

II. Reports and Hearings

A. The Board of Commissioners directs the Department of Public Works to prepare a Written report on the proposed vacation.

The report must contain:

1. An assessment of whether the vacation would be in the public interest.

2. A description of the ownership of the road proposed to be vacated.

3. A description of the present use of the road proposed to be vacated.

B. The Board of Commissioners, upon receiving the report, will set a time for a Public Hearing. Also they will cause notice of the Hearing to be posted on the road proposed to be vacated, published in a local newspaper and mailed to each person or utility with a recorded interest in the vacation.

C. The Board of Commissioners may grant a vacation without a Public Hearing if the Public Works Department assesses the vacation to be in the public interest and if the petition contains the notarized signatures of 100 percent of the owners of any private property abutting the road to be vacated.

7.706 ROAD OFFICIAL'S ADMINISTRATIVE GUIDE

ADMINISTRATIVE GUIDE FOR
VACATION OF COUNTY ROADS, PUBLIC ROADS, SUBDIVISIONS,
AND OTHER PUBLIC PROPERTY

I. AUTHORITY:

ORS 368.326 to 368.366 - County Roads

II. BASIC ASSUMPTIONS:

A. A public right-of-way, for a road or other use, is a public trust and should be considered as such prior to any recommendation for approval of its vacation.

B. The fact that abutting property owners are in agreement for a proposed vacation does not necessarily mean that the vacation should be granted.

C. A roadway has not been opened for a use in past years and should not be vacated if probable or possible future area development could result in opening the roadway for use.

III. ITEMS TO BE CONSIDERED IN ANY VACATION INVESTIGATION:

D. Legality of Signers: Are the signers to the petition legally qualified?

B. Terrain: Is it economically possible to construct a road over the terrain that exists?

C. Replacement: Has the right-of-way been replaced or superseded by a nearby road relocation?

D. Location: Is the location in a strictly rural area or is it close to an area that is developing or has potential development? If within Urban Growth Boundary of any City, does that City approve of vacation?

E. Relationship: What is the physical relationship of the right-of-way to other public or County roads? Does it lend itself to the development of the abutting properties into adequately sized lots and blocks?

F. Benefit: What benefit would accrue to the petitioners if the right-of-way were vacated? Is there any benefit to the general public?

G. Development: Does the petitioner have an immediate plan for development which would require vacation?

7.708 RESOLUTION, NOTICE OF HEARING, AND ORDER

IN THE BOARD OF COUNTY COMMISSIONERS OF _____COUNTY

STATE OF OREGON

IN THE MATTER OF INITIATING)	
PROCEEDINGS TO VACATE A PORTION)	RESOLUTION, NOTICE OF
OF _____ ROAD)	HEARING, AND ORDER

WHEREAS, it appears that vacation of a portion of _____ Road, County Road No._____, would be beneficial to the public for the following reasons:

[statement of reasons]

IT IS HEREBY RESOLVED, in accordance with ORS 368.326 to 368.366, that proceedings be undertaken to vacate the portion of said road described as follows:

[legal description]

The legal description of adjacent land and the landowners are:

[list]

IT IS ORDERED that the Director, Department of Public Works, examine said road and file a written report pursuant to ORS 368.346 (1);

IT IS FURTHER ORDERED that ___[date]___ be established for hearing said report and for conducting a public hearing on the proposed vacation, and that such hearing be held at _____[a.m./p.m.] in _____, _____, Oregon; and

IT IS ORDERED that notice of the hearing be provided by the Director, Department of Public Works, in accordance with ORS 368.346 (3).

Dated this _____ day of _____, 20_____.

_____

Chairman, _____ County
Board of Commissioners

7.712 AFFIDAVIT OF SERVICE

AFFIDAVIT OF SERVICE

The undersigned certifies that on _____, 20_____, notice was served of the public hearing on the vacation of _____ to the following persons:

The notice consisted of copies of the Notice of Hearing and Order No. _____ and was served personally or by certified mail on each person found to have recorded interests in:

(a) the property proposed to be vacated;
(b) an improvement constructed on property proposed to be vacated; or
(c) real property abutting property proposed to be vacated.

_____
[name]

Subscribed and sworn to before me this ____ day of _____, 20___.

_____
Notary Public for Oregon

My Commission Expires _____

VII

Names and addresses of all persons owning any real property abutting the property proposed to be vacated: (For this purpose, any property on the opposite side of a public roadway from the property proposed to be vacated is also considered to be an abutting property.)

VIII

Petitioners request that after the giving of notice as required by law, a hearing be held on this petition before the Board of County Commissioners, and that an order be entered vacating the property more particularly described above.

Dated this _____day of _____, 20_____.

PETITIONERS

_____ _____

_____ _____

_____ _____

I hereby certify that I circulated the foregoing petition, that the above petitioners executed the petition in my presence, that all said petitioners are known to me to be the identical individuals described in the petition, (and that petitioners are at the least either owners of 60% of the land abutting the property or 60% of the owners of land abutting the property*).

STATE OF OREGON) ss
COUNTY OF _____)

On this _____ day of _____, 20___, before me, the undersigned, a notary public in and for said county and state, personally appeared the within named _____, known to me to be the identical individual described in and who executed the same freely and voluntarily.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

_____
Notary Public for Oregon

My Commission Expires _____

* To be excluded if all property owners petition.

7.718 COUNTY PUBLISHED NOTICE OF PUBLIC HEARING

PUBLIC NOTICE

BEFORE THE BOARD OF COUNTY COMMISSIONERS FOR _____ COUNTY, OREGON

IN THE MATTER OF THE VACATION)
OF _____)
_____)
_____)

Notice is hereby given that the _____ County Board of Commissioners has received a petition calling for vacation of

_____

_____

_____

More detailed information on this subject may be obtained from:

_____

The preliminary assessment by the county engineer is that:

_____

Notice is hereby given that the _____ County Board of Commissioners, under authority of ORS 368.326 to 368.366, intends to hold a public hearing on vacation of said _____ on _____, 20____, at _____ in Room _____, _____ County Courthouse, _____, Oregon. Any persons wishing to be heard on this subject may attend this hearing and present appropriate information for consideration by the Board of Commissioners, who subsequently will determine whether the request for vacation shall be granted.

Dated this ____ day of _____, 20___ at _____, Oregon.

_____
County Engineer and Director of Public Works

7.722 SAMPLE LETTER TO PUBLIC UTILITY COMPANY

_____, 20_____

_____Electric Co.

_____
_____, Oregon

_____ County has received a petition to vacate the entire unnamed alley in Block ____, Town Plat of _____. Block ____ is bounded on the north by _____Street, on the west by _____ Street, on the south by _____ Street (originally _____ Street) and on the east by the town boundary. The owner of record and present occupant of the block is the _____ Community Church.

If you have existing or planned utilities within the limits of this alley, or wish to make any comments on the proposed vacation, please furnish them to this office not later than _____, 20_____. If you have any questions, telephone _____ _____ or _____ _____ (_____).

Sincerely,

Principal Engineer

case, the entire parcel will revert to the _____ Community Church, owner of all 8 lots within Block _____. Its effect will be to change size of lots from 60 X 100 feet to 60 X 105 feet each.

FISCAL IMPACT

There is no identified fiscal impact. Although vacation will return property to the tax rolls, it appears that ownership will revert to a tax-exempt entity.

RECOMMENDATION

After the public hearing on _____, 20___, if no negative comments are received, it is recommended that the board of commissioners grant the vacation of the unnamed alley in Lot _____, _____, by approving the attached order.

Attachment

utility companies or easements of record, does hereby vest in the owner of the land abutting the vacated property by extension of the person's abutting boundaries to the center of the vacated property, in accordance with Oregon law.

The county surveyor is directed to mark the plat as provided under ORS 271.230 and copies of the order be recorded with the county clerk, county surveyor, and county assessor.

Dated at _____, Oregon, this _____ day of _____, 20____.

_____ COUNTY BOARD OF COMMISSIONERS

_____

_____

_____

APPROVED AS TO FORM

_____

_____ County Legal Counsel

Ken Jernstedt Airfield Airport Master Plan 2009 Update

Traffic Study – Orchard Road Vacation
(DKS Associates)

DKS Associates

MEMORANDUM

TO: Mike Doke, Port of Hood River
Don Wiley, Hood River County

CC: Scott Keiller, Columbia Planning

FROM: Scott Mansur, P.E., P.T.O.E.
Adam Miles, E.I.T.

DATE: March 6, 2009

SUBJECT: **Hood River Airport - Orchard Road Vacation Transportation Study**

P08254-000-000

The Port of Hood River is seeking to shift the Hood River airport runway 550 feet east for safety purposes.[1] The 550 foot runway shift will impact the existing Orchard Road local street connection approximately 2,000 feet south of Tucker Road, thus requiring a street vacation. The proposed street vacation would impact local traffic on Orchard Road by disconnecting the local connector roadway that currently provides access to Tucker Road to the west and north as shown on Figure 1.

This memorandum documents the expected transportation impacts resulting from the Orchard Road vacation. In particular, this memorandum includes sections that cover the existing transportation conditions and the future impacts resulting from traffic rerouting.

Existing Transportation Conditions

Existing study area transportation conditions were analyzed to establish a baseline for estimating the transportation impacts of the proposed Orchard Road vacation. The analysis was based on recent peak hour traffic counts and fieldwork at the study area intersections. The study area is shown in Figure 1 and includes the following three study intersections that were selected based on conversations with Hood River County staff[2]:

- Tucker Road/Orchard Road (SW Intersection)
- Tucker Road-Barrett Drive/Indian Creek Road
- Tucker Road/Orchard Road (NE Intersection)

Existing study area documentation and analysis include roadway characteristics, existing AM and PM peak hour traffic volumes, existing intersection operations, and collision history.

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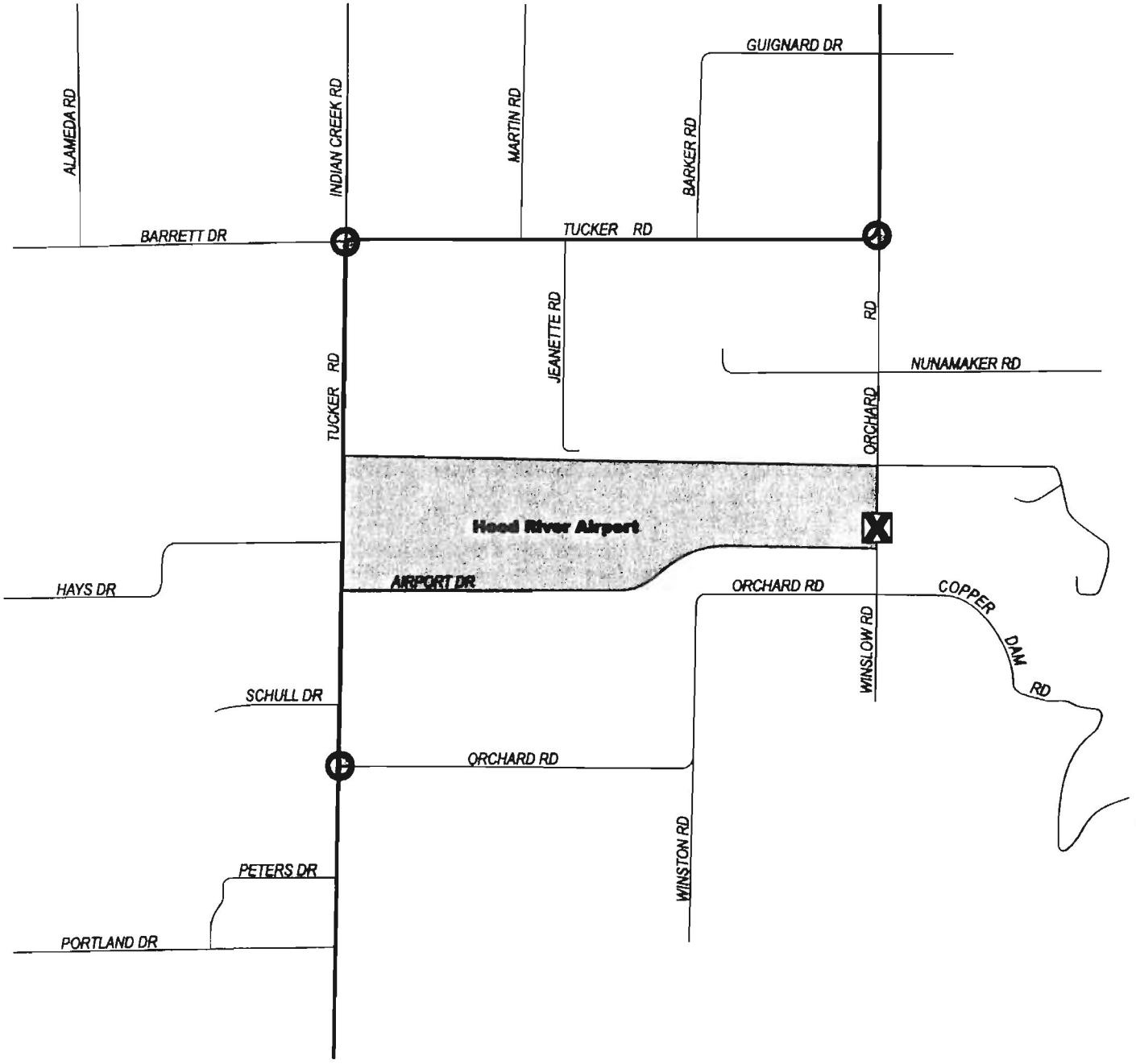
[1] Ken Jernstedt Airfield Airspace Classification Review, Port of Hood River, December 2008.
[2] Phone conversation with Don Wiley and Mike Doke, September 26, 2008.



LEGEND

- O - Study Intersection
- X - Street Vacation

DKS Associates
TRANSPORTATION SOLUTIONS

NO SCALE

Figure 1

STUDY AREA

Roadway Characteristics

The functional classifications and other important characteristics of the key study area roadways are listed in Table 1.

Table 1: Study Area Roadway Characteristics

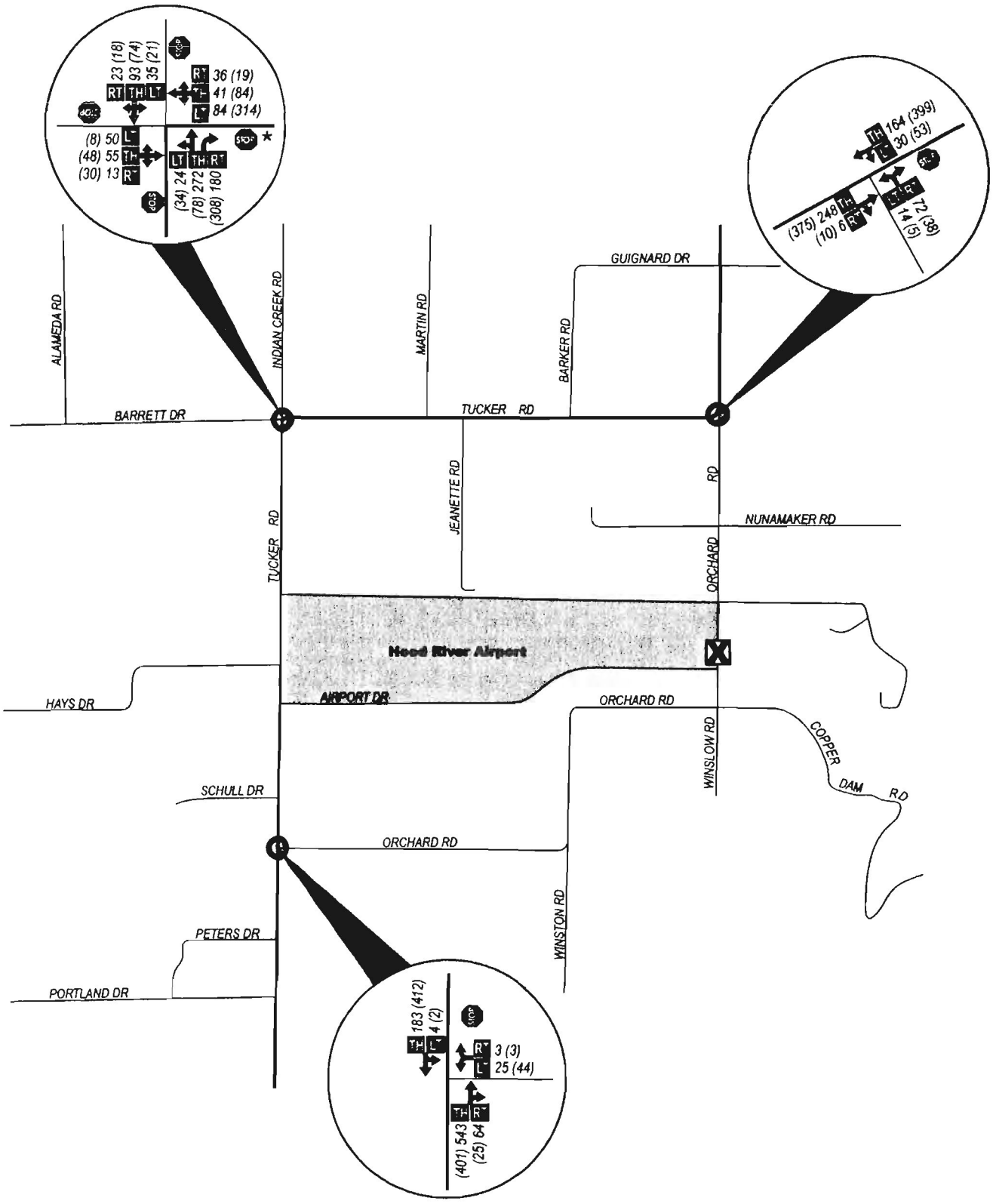
Roadway	Classification		Cross Section	Posted Speed	On-Street Parking	Sidewalks	Bike Lanes
	Agency	*Designation*					
Tucker Rd	ODOT	District Hwy	2 Lanes	40 mph	No	No	No
Orchard Rd	Hood River County[a]	Local Street	2 Lanes	40 mph	No	No	No

[a] Hood River County Transportation System Plan, July 21, 2003.
[b] Oregon Basic Rule of 55 miles per hour applies.

Existing Traffic Volumes

Existing vehicle count data were collected at the study intersections for the AM peak period (7:00 a.m. to 9:00 a.m.) on Thursday December 11th, 2008, and for the PM peak period (4:00 p.m. to 6:00 p.m.) on Wednesday December 10th, 2008. The 30th highest hour traffic volumes were determined by applying a seasonal adjustment factor to the existing traffic counts for the Tucker Road through movements.[3] The resulting peak hour traffic volumes are shown in Figure 2 and the detailed traffic counts are attached in the Appendix.

[3] The December traffic counts were factored by 1.198 to represent 30th highest hour volumes that occur in the month of July.



LEGEND

- Study Intersection
- Street Vacation
- Lane Configuration
- AM (PM) - Peak Hour Traffic Volumes
- LT·TH·RT - Volume Turn Movement (Left-Thru-Right)
- ★ - This approach has a free right turn

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TRANSPORTATION SOLUTIONS

NO SCALE

Figure 2

EXISTING VOLUMES

Existing Intersection Operations

Existing traffic operating conditions at the study intersections were determined based on the *2000 Highway Capacity Manual* methodology[4] for unsignalized intersections consistent with county standards. The performance measures include the estimated average delay, level of service (LOS), and volume-to-capacity (V/C) ratio of each study intersection and are listed in Table 2. Along Tucker Road, study intersections are required to operate with v/c ratios that are at or below 0.75 for unsignalized intersections. The Tucker Road-Barrett Drive/Indian Creek Road does require highway traffic to stop, so the intersection is required to operate with a v/c ratio that is at or below 0.80.[5] As shown in Table 2, operating standards are currently met at all study intersections.

Table 2: Existing Intersection Operating Conditions

Intersection	Operating Standard	AM Peak Hour			PM Peak Hour		
		Delay	*LOS*	*V/C*	*Delay*	*LOS*	*V/C*
Tucker Rd/Orchard Rd (northeast)	V/C ≤ 0.75	11.2	A/B	0.15	11.8	A/B	0.08
Tucker Rd-Barrett Dr/Indian Creek Rd	V/C ≤ 0.80	13.3	B	0.61	12.8	B	0.62
Tucker Rd/Orchard Rd (southwest)	V/C ≤ 0.75	20.3	A/C	0.14	18.9	A/C	0.17

Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement (typically a minor movement)
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement
Bold Underlined values do not meet standards.

Collision History

The collision history at each study intersection was obtained for 2005 through 2007 from ODOT's Crash Analysis and Reporting Unit. During these three years, there were zero reported fatalities and all study area intersections experienced a collision frequency of less than 1.0 million entering vehicles (MEV) per year, which typically indicates there are no significant safety problems. Table 3 summarizes the study intersection collision data, and the ODOT crash reports are included in the Appendix.

Table 3: Study Intersection Collisions (2005-2007)

Intersection	Collisions (by Severity)				Collisions Per year	Collision Rate[b]
	Fatal	*Injury*	*PDO*[a]	*Total*		
Tucker Rd/Orchard Rd (northeast)	0	0	0	0	0.00	0
Tucker Rd-Barrett Dr/Indian Creek Rd	0	0	2	2	0.67	0.21
Tucker Rd/Orchard Rd (southwest)	0	1	1	2	0.67	0.26

[a] PDO = Property damage only.
[b] Collision rate = average annual collisions per million entering vehicles (MEV); MEV estimates based on PM peak hour traffic count.

[4] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.
[5] ODOT, Oregon Highway Plan (OHP) 1F.1

Intersection Sight Distance

Sight distance is defined as the distance needed on either side of an intersection to provide safe turning maneuvers at the intersection. Having sufficient sight distance is an important safety consideration because it allows vehicles on the major roadway to react to a vehicle pulling into or out of a side street. It also allows vehicles on the side street to have a sufficient line of sight to judge when a gap is available to safely pull out onto or to cross the major roadway.

Assuming a design speed of 45 mph on Tucker Road (the posted speed is 40 mph), 500 feet of site distance in both directions would be required at the two Orchard Road intersections with Tucker Road.[6] Based on observations at the southwest Tucker Road/Orchard Road intersection, there are utility poles within the sight distance triangle; however, adequate sight distance is provided. Observations were also performed at the northeast Tucker Road/Orchard Road intersection, and the sight distance at the north leg is marginal due to an existing vertical curve. A detailed survey of intersection sight distance at the northeast Tucker Road/Orchard Road intersection should be conducted to determine if modifications of the vertical curve are needed to provide adequate sight distance.

Future Impacts of Orchard Road Vacation

As previously discussed, the planned Hood River Airport runway shift would require the vacation of the segment of Orchard Road immediately to the east of the airport as shown on the study area map. Because Orchard Road is a connector street that provides access for residential and farm uses, a portion of local and through traffic would be required to use Tucker Road to circumvent the airport. This section discusses the estimated traffic rerouting and intersection operations that would result from the Orchard Road street vacation. It also discusses the future traffic volumes and intersection operations for the following future scenarios:

- 2014 Background (AM and PM peak hours)
- 2014 with Orchard Road Vacation (AM and PM peak hours)

The 2014 scenario year was selected since that is the estimated completion date of the airport's runway shift.

Traffic Rerouting

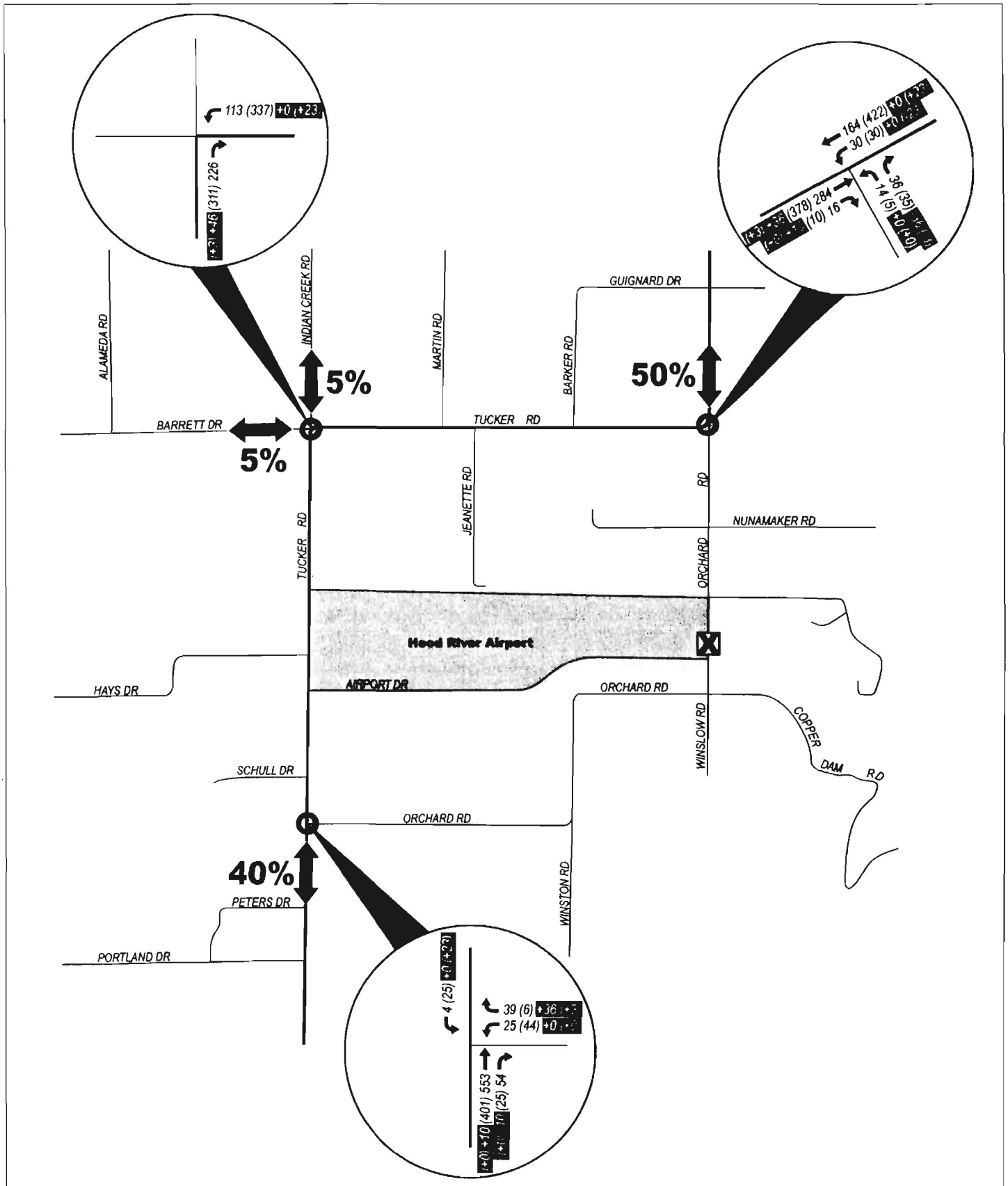
In order to reroute the existing traffic for the Orchard Road vacation it was first necessary to determine the trip generators which produced the existing traffic and their location with respect to the planned street vacation. The residential and agricultural land uses for the Orchard Road area were approximated from aerial photos. Using data provided by the Institute of Transportation Engineers (ITE)[7], the trips generated by land uses adjacent to Orchard Road were calibrated to the current traffic counts.

The existing trip distribution was determined from existing traffic counts and used to reroute Orchard Road trips in all of the traffic scenarios based on the change in roadway connectivity. Figure 3 shows the traffic rerouting assumptions.

---

[6] *A Policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO), Exhibit 9-55 (pg. 661) and Exhibit 9-58 (pg. 664).

[7] Regression equations for trip generation found in the *Trip Generation, 8th Edition*, Institute of Transportation Engineers, 2003.



LEGEND

- Study Intersection
- Street Vacation
- AM (PM) - Rerouted Peak Hour Traffic Volumes
- +AM (+PM) - Rerouting Adjustments

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TRANSPORTATION SOLUTIONS

NO SCALE

Figure 3

TRIP DISTRIBUTION AND REROUTING

Intersection Operations With Orchard Road Vacation

Traffic operating conditions at the study intersections were analyzed for the AM and PM peak hours with and without the planned street vacation. The results of the analysis are shown in Table 4 alongside the existing operating conditions. As shown, operating standards are met at all of the study intersections for all scenarios and the Orchard Road vacation has minimal impact on existing intersection operational performance.

Table 4: 2008 Intersection Operating Conditions with Orchard Road Street Vacation

Intersection	Operating Standard	2008 Existing[a]			2008 w/Orchard Road Vacation		
		Delay	*LOS*	*V/C*	*Delay*	*LOS*	*V/C*
AM Peak Hour							
Tucker Rd/Orchard Rd (northeast)	V/C ≤ 0.75	11.2	A/B	0.15	11.7	A/B	0.10
Tucker Rd-Barrett Dr/Indian Creek Rd	V/C ≤ 0.80	13.3	B	0.61	13.3	B	0.61
Tucker Rd/Orchard Rd (southwest)	V/C ≤ 0.75	20.3	A/C	0.14	19.6	A/C	0.26
PM Peak Hour							
Tucker Rd/Orchard Rd (northeast)	V/C ≤ 0.75	11.8	A/B	0.08	11.8	A/B	0.07
Tucker Rd-Barrett Dr/Indian Creek Rd	V/C ≤ 0.80	12.8	B	0.62	13.6	B	0.66
Tucker Rd/Orchard Rd (southwest)	V/C ≤ 0.75	18.9	A/C	0.17	20.0	A/C	0.19

Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement (typically a minor movement)
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement
Bold Underlined values do not meet standards.

[a] These are the same 2008 Existing operations that were reported previously in Table 2.

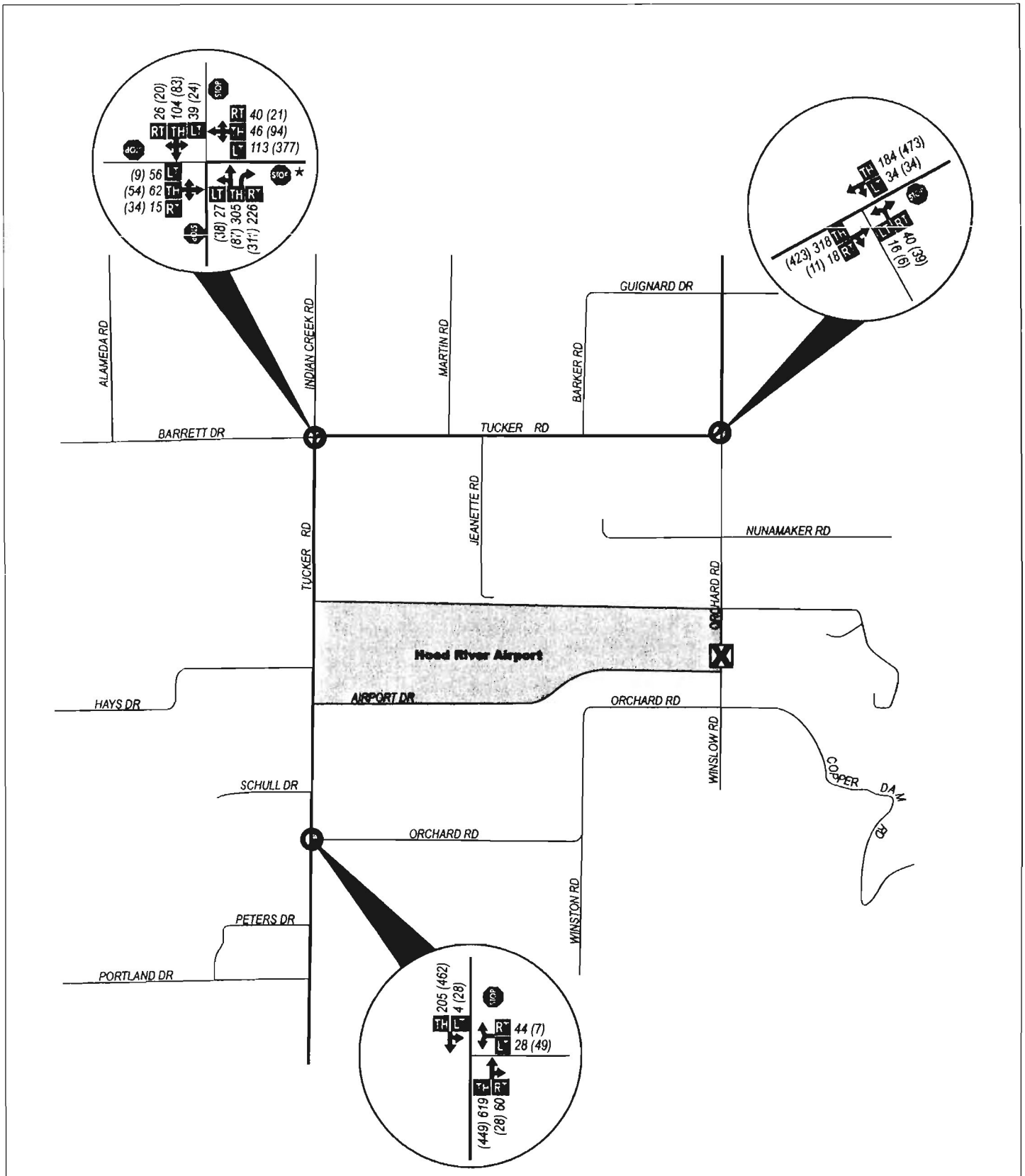
Future Traffic Volumes

Future traffic volumes were estimated assuming a 2% per year growth rate[8] for six years consistent with the City's transportation system plan. The 2014 Background volumes were determined by factoring up the 2008 existing volumes using this growth adjustment factor. The 2014 traffic volumes with the street vacation were determined and are shown in Figure 4 for the AM and PM peak hours.

Future Intersection Operations

Future traffic operating conditions at the study intersections were analyzed for the AM and PM peak hours under the 2014 Background and 2014 with Orchard Road Vacation scenarios. The results of the analysis are shown in Table 5. Operating standards are met at all of the study intersections for all scenarios, even though delay and v/c ratios increase in the 2014 with Orchard Road Vacation scenarios.

[8] Hood River County Transportation System Plan Section 4.3.3, page 4-5.



LEGEND

- Study Intersection
- Street Vacation
- Lane Configuration
- AM (PM) - Peak Hour Traffic Volumes
- LT TH RT - Volume Turn Movement (Left-Thru-Right)
- ★ - This approach has a free right turn

NO SCALE

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TRANSPORTATION SOLUTIONS

Figure 4

2014 REROUTED VOLUMES

Table 5: Future 2014 Intersection Operating Conditions

Intersection	Operating Standard	2014 Background			2014 w/Orchard Road Vacation		
		Delay	*LOS*	*V/C*	*Delay*	*LOS*	*V/C*
AM Peak Hour							
Tucker Rd/Orchard Rd (northeast)	V/C ≤ 0.75	11.9	A/B	0.18	12.3	A/B	0.12
Tucker Rd-Barrett Dr/Indian Creek Rd	V/C ≤ 0.80	16.4	C	0.72	16.4	C	0.72
Tucker Rd/Orchard Rd (southwest)	V/C ≤ 0.75	24.0	A/C	0.18	23.7	A/C	0.33
PM Peak Hour							
Tucker Rd/Orchard Rd (northeast)	V/C ≤ 0.75	12.5	A/B	0.09	12.5	A/B	0.09
Tucker Rd-Barrett Dr/Indian Creek Rd	V/C ≤ 0.80	15.2	C	0.71	16.6	C	0.75
Tucker Rd/Orchard Rd (southwest)	V/C ≤ 0.75	22.1	A/C	0.22	23.9	A/C	0.25

Delay = Average Stopped Delay per Vehicle (sec) at Worst Movement (typically a minor movement)
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement
Bold Underlined values do not meet standards.

Summary

The Hood River Airport – Orchard Road street vacation transportation study is summarized in the following bulleted points:

- The Port of Hood River is planning a runway shift of the existing Hood River Airport runway in 2014 which would require the vacation of a section of Orchard Road, approximately 2,000 feet south of Tucker Road.
- Orchard Road is a local street that provides connectivity for residential and agricultural uses to Tucker Road to the west and north.
- All of the study intersections currently meet traffic operating standards.
- With the planned Orchard Road street vacation, existing traffic volumes were rerouted through the traffic network. The traffic operations were reevaluated at all study intersections with the Orchard Road street vacation and were found to meet standards.
- Sight distance at the north leg of the Tucker Road/Orchard Road intersection is marginal due to a vertical curve. A detailed survey of intersection sight distance at the northeast Tucker Road/Orchard Road intersection should be conducted to determine if modifications of the vertical curve are needed. This sight distance issue is a pre-existing roadway condition.
- Future traffic volumes and operations, including the Orchard Road street vacation, were determined for the 2014 estimated construction year. The future traffic operations will marginally increase delay and capacity at all study intersection; However, they would continue to meet operating standards.

Feel free to contact us if you have any questions or comments.

Appendix

- Traffic Counts – AM Peak Hour
- Traffic Counts – PM Peak Hour
- ODOT Collision Data
- * Level of Service Descriptions
- HCM Intersection Analysis – Existing
- HCM Intersection Analysis – 2014

* DUE TO THE SIZE AND TECHNICAL NATURE OF THE MATERIAL LISTED AS PART OF THIS APPENDIX, IT WAS NOTE INCLUDE HEREIN. HOWEVER, PLANNING STAFF WOULD BE GLAD TO MAKE YOU A COPY IF SO DESIRED.

Ken Jernstedt Airfield Airport Master Plan 2009 Update

FAA Airport Master Plan Amendment
(Century West Engineering)

Ken Jernstedt Airfield
Airspace Classification Review

Overview

The Port of Hood River, owner of Ken Jernstedt Airfield, has determined that previous master plan recommendations to upgrade Runway 7/25 approach capabilities from visual to nonprecision instrument no longer represent the desired airfield and airspace configuration for the airport.

The Port supports maintaining visual approach capabilities for Runway 7/25 based on the functional role of the airport, the composition of air traffic using the runway, the airport environment, and overall operational safety.

Operational constraints including existing and future runway length (as related to meeting FAA runway length standards for instrument approach development) and surrounding mountainous terrain are key considerations supporting this proposed change in planning for the airport.

The Port would like to revise the current airport layout plan (approved by FAA March 2005) and supporting drawings to reflect the proposed change in planning assumptions. If this request is approved by FAA, the airport layout plan, FAR Part 77 airspace plan, inner approach surface plan, and land use plan drawings will be revised as required, to reflect "larger than utility visual approach capabilities" for Runway 7/25. Any new on-airport construction (hangars, other buildings, airfield facilities, etc.) that has occurred since the last ALP update will be added based on information provided by the Port.

No other changes to underlying master plan assumptions will be addressed in this minor drawing update. The proposed change in airspace planning criteria is not affected by design aircraft or activity levels. No change in the existing or future Airport Reference Code (ARC) is proposed.

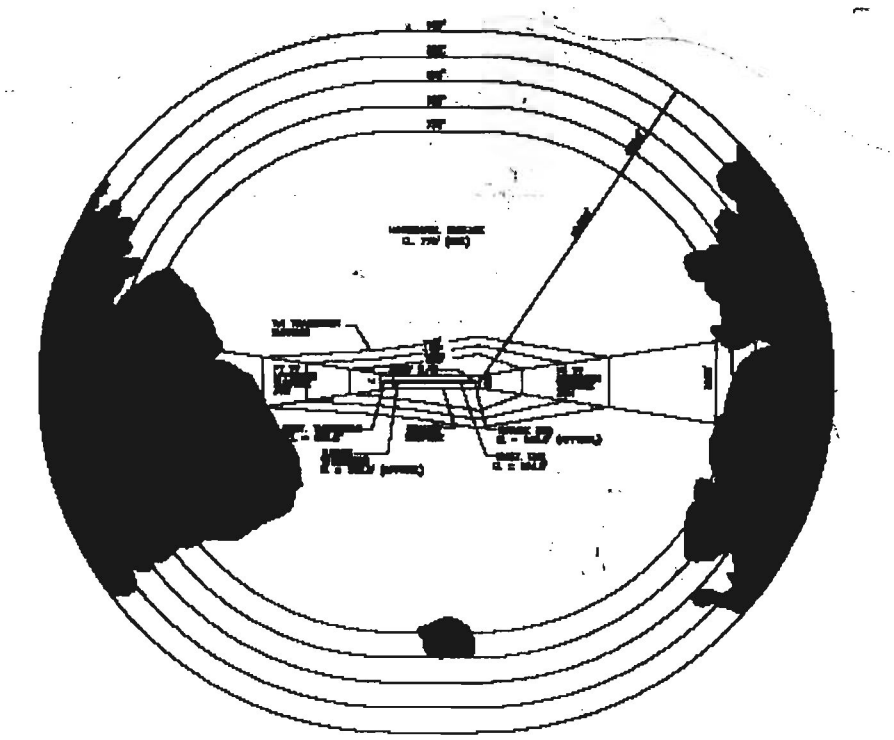
Technical Evaluation Issues

The following considerations are cited to support the Port's request to revise the ALP and supporting drawings:

FAR Part 77 Airspace Terrain Penetrations: Ken Jernstedt Airfield is located on a relatively level plane that is bordered by rising terrain beyond each end of the runway (see figure below). Runway 7/25 is aligned in an east-west direction and the arrival and departure routes along the extended runway centerline encounter mountainous terrain within 1 to 2 miles.

The major areas of terrain penetration include the outer half of the approach surface for Runway 7, and the western sections of the horizontal and conical surfaces. The eastern edge of the horizontal surface and large areas of the conical surface abutting the end of the approach surface for Runway 25 also have extensive areas of terrain penetration.

Runway 7/25 has not been equipped with visual guidance indicators (VGI) due in part to its close proximity to nearby terrain. The mountainous terrain beyond both runway ends is located within the defined PAPI clearance zone, which extends 4 statute miles from its point of origin.



Instrument Approach Feasibility: The feasibility of developing a nonprecision instrument approach to Runway 7/25 has not been established by FAA through detailed airspace and flight procedure analyses. In the event that basic feasibility can be established, it appears that the approach minimums would be negatively affected by terrain clearance requirements for the inbound approach procedure, missed approach procedure, or both segments. These conditions suggest that developing instrument procedures, if feasible, may have marginal effectiveness. Local pilots familiar with the terrain surrounding the airport have expressed reservations about the viability of developing a useable instrument approach to either runway end.

Instrument Departure Surface: Although not depicted on the airspace plan, a departure surface for instrument runways may be recommended for Runway 7/25 if an instrument approach is developed. However, it appears that the nearby mountainous terrain would not permit a clear TERPS instrument departure surface for either runway end. In addition, numerous close-in built items and trees identified in the vicinity of the runway ends would also penetrate the wider and flatter instrument departure surface. The TERPS instrument departure surface has a slope of 40:1 that begins at the runway end; the surface extends 10,200 feet, with an inner width of 1,000 feet and an outer width of 6,466 feet.[1]

> FAA Guidance on Departure Procedures. "*TERPS, Chapter 12, Civil Utilization of Area Navigation (RNAV) Departure Procedures, contains criteria for the development of IFR departure procedures. An obstacle that penetrates the 40:1 departure slope is considered to be an obstruction to air navigation. Further study is required to determine if adverse effect exists. Any proposed obstacle that penetrates the 40:1 departure slope, originating at the departure end of runway (DER) by up to 35 feet will be circularized. If an obstacle penetrates the 40:1 departure slope by more than 35 feet, it is presumed to be a hazard, and a Notice of Presumed Hazard will be issued, and processed accordingly. Analysis by the National Flight Procedures Office and air traffic personnel is necessary to determine if there would be a substantial adverse effect on the navigable airspace.*"

Runway Length: The future length of Runway 7/25 depicted on the ALP is 3,055 feet, which is less than the minimum runway length of 3,200 feet length for approaches with 1-statute mile visibility or greater.[2] Based on FAA guidelines, development of an instrument approach is not recommended for runways less than 3,200 feet long.

Land Use: The rising terrain within the 10,000-foot horizontal surface radii and approach surface lengths for Runway 7/25 create large areas of potential incompatible land use 1 to 2 miles from the airport based on Hood River County airport overlay zone protections, which are defined by the protected airspace surfaces on the Airport Airspace Plan. The use of airspace surfaces for Larger than Utility runways with visual approaches will significantly reduce the affected areas, yet still provide adequate control over developments within the 5,000-foot area beyond each runway end and along the sides of the runway.

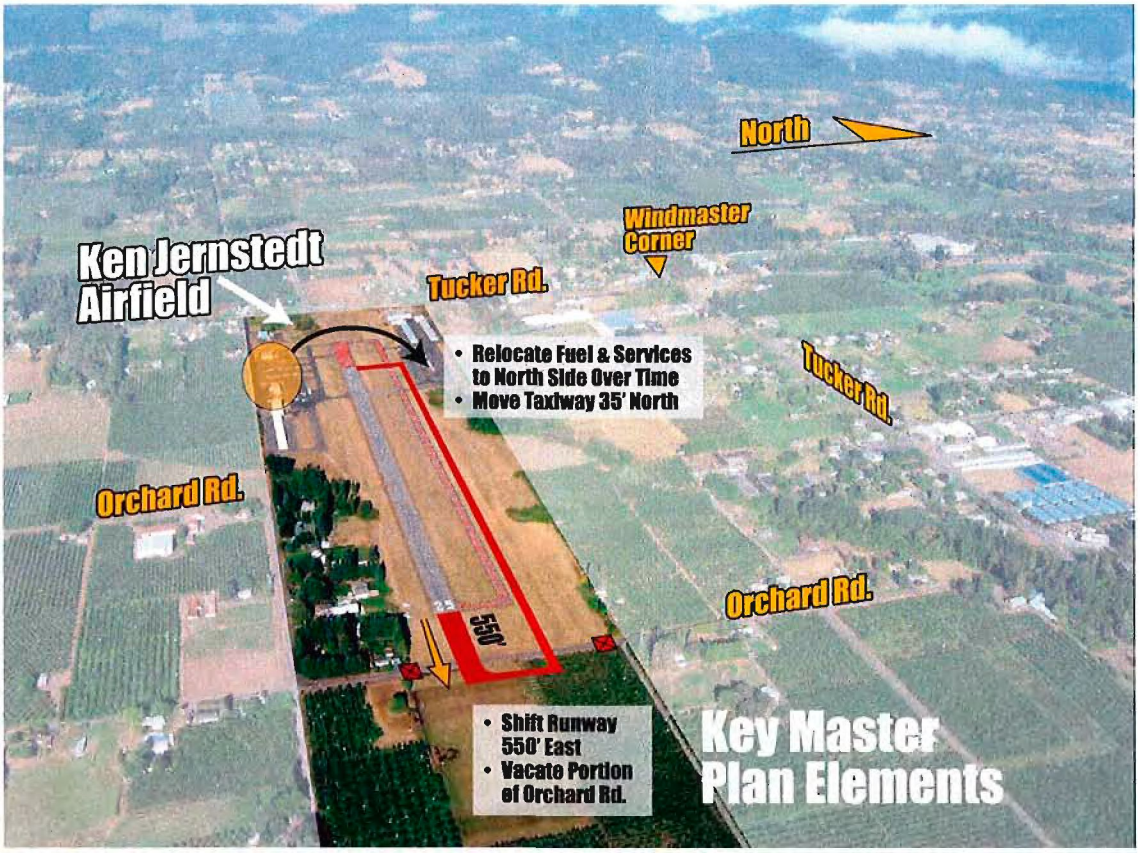
[1] Depicted in FAA AC 150/5300 (as amended), Appendix 2, Figure A2-3.
[2] Listed in AC 150/5300-13 (as amended), Appendix 16, Table A16-1C (Nonprecision Approach Requirements)

Ken Jernstedt Airfield Airport Master Plan 2009 Update

2009 Airport Master Plan Update
(Century West Engineering and Port of Hood River)

KEN JERNSTEDT AIRFIELD

AIRPORT MASTER PLAN 2009 UPDATE



PORT OF HOOD RIVER
HOOD RIVER, OREGON

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Updated by Port of Hood River for Hood River County Planning Commission January 2009
Partially funded through a technical assistance grant from Oregon Department of Land Conservation and Development

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CHAPTER ONE
INTRODUCTION AND PLAN RECOMMENDATIONS

The Port of Hood River, in cooperation with the Oregon Department of Aviation (ODA), is updating the Airport ~~Layout~~Master Plan (ALP) Report for Ken Jernstedt Airfield (hereafter referred to as "the Airport"). The purpose of the study is to define the current, short-term and long-term needs of the airport. This Airport Layout Plan Report replaces the Hood River Airport Master Plan 1990-2010 (W&H Pacific, 1993) and updates the Ken Jernstedt Airfield Airport Layout Plan Update 2004-2024 (Century West Engineering, 2005). The basis of these two reports are the Hood River Airport Master Plan Report (Century West Engineering, 1977), which the Port of Hood River developed after Hood River County transferred airport ownership to the Port in 1976. **THIS AIRPORT ~~LAYOUT~~ MASTER PLAN REPORT REPLACES THE HOOD RIVER AIRPORT MASTER PLAN COMPLETED IN 1990 (HOOD RIVER AIRPORT MASTER PLAN 1990-2010, W&H PACIFIC, 1993).** ~~The Airport Layout Plan Report will replace the Hood River Airport Master Plan completed in 1990.~~[1] Prior master plan recommendations have been reviewed and revised as necessary, to reflect current conditions and any changes in activity, utilization, or facility development that may affect future demand for aviation facilities.

[1] ~~Hood River Airport Master Plan 1990-2010, W&H Pacific (1993).~~

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Funding for the ALP project was provided through a Federal Aviation Administration (FAA) Airport Improvement Program grant (90 %) and local match (10 %) from the Port of Hood River. Overall project coordination is being provided by the Oregon Department of Aviation through administration of a multiple airport layout plan grant.

The preparation of this document may have been supported, in part, through the Airport Improvement Program financial assistance from the Federal Aviation Administration as provided under Title 49, United States Code, section 47104. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of this report by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted therein nor does it indicate that the proposed development is environmentally acceptable with appropriate public laws.

OVERVIEW

The Hood River Airport was officially renamed Ken Jernstedt Airfield in 2001 to honor a lifetime of public service provided by the prominent local resident. Mr. Jernstedt was a member of the American Volunteer Group (AVG), also known as the Flying Tigers, which was formed to assist China in the months leading up to the United States' entry into World War II. He was a decorated fighter pilot (Oregon's first Ace) and a recipient of the Distinguished Flying Cross. Following his military service, Mr. Jernstedt twice served as Hood River mayor and spent twenty years in the Oregon State Legislature (House and Senate) before retiring in 1988. He was also a local business owner and has supported a variety of aviation related activities.

Photo: Stacy Kelley, 2002

Ken Jernstedt's P-40 Warhawk on display at the Evergreen Air Museum

Ken Jernstedt Airfield has the only paved and lighted runway in Hood River County and is included in the "Core System of Airports" in the Oregon Aviation Plan (OAP).[2] Core system airports are defined as having "a significant role in the statewide aviation system." The airport is included in the "Community General Aviation Airport" category based on its current functional role. Community airports typically accommodate a wide range of general aviation users and local business activities. Local airport activity includes business and general aviation users, aerial applicators, government users, and visitors to Hood River and the surrounding area.

Community airports are significant components in the statewide transportation system and often generate both direct (employment, etc.) and indirect economic benefits for the local community or region. In recent years, the communities within the Columbia River Gorge have attracted new residents and businesses that value the region's natural setting and economic opportunities. According to local data, the population of the immediate four-county area (Hood River, Wasco, Skamania, and Klickitat) has grown to approximately 75,000. Commercial-related aviation businesses, such as aerial applicators, fixed base operators and aircraft maintenance shops create employment and provide vital services within a large geographic area.

For smaller communities without convenient access to commercial air travel, general aviation airports provide additional transportation options for business and personal travel. The availability of a safe, well-maintained general aviation airport is often a key factor in a business decision to locate in, or serve a small community. The nearest commercial air service is about one hour away at Portland International Airport.

The airport is included in the National Plan of Integrated Airport Systems (NPIAS), administered by the FAA. NPIAS airports are eligible for federal funding of improvements through FAA programs such as the current Airport Improvement Program (AIP). The FAA requires that all NPIAS airports periodically update their airport plans to maintain effective long-term planning. This project enables the airport to meet the FAA's requirement to maintain an up-to-date plan.

[2] Oregon Aviation Plan (Dye Management/Century West), © Oregon Department of Transportation 2000.

The primary objective of the Airport ~~Layout~~Master Plan Report is to identify current and future facility needs and the improvements necessary to maintain a safe and efficient airport that is economically, environmentally and socially sustainable. The Airport ~~Layout~~Master Plan Report will:

- *Examine previous recommendations and development alternatives as appropriate to meet the current and projected airport facility needs;*
- *Determine current and future activity and facility requirements;*
- *Update the airport layout plan, airspace plan, and land-use plan for the airport and its surrounding areas; and*
- *Schedule priorities of improvements and estimate development costs for the 20-year planning period.*

PUBLIC INVOLVEMENT

The public involvement element of the planning process provided opportunities for all interested individuals, organizations, or groups to participate in the project. A list of stakeholders was developed for the project, which included airport users, local citizens, businesses, and local, state and federal government agencies, and community leaders.

At the project kickoff, a Joint Planning Conference (JPC) was held for agencies and organizations with a specific interest or responsibility (land use, environmental, natural resources, transportation, etc.) associated with the airport or its vicinity. The purpose of the JPC was to identify any concerns or issues, which needed to be addressed as part of this airport layout plan update. The JPC provided valuable information that can be used in formulating the plan.

A planning advisory committee (PAC) was formed to assist the Consultant and Port in developing the updated plan. The PAC reviewed and commented on draft work products and provided local knowledge and expertise to the planning process. PAC meetings were held at key points during the study in conjunction with public informational meetings.

The Draft Report contained the entire work effort and reflected the input provided by all participants in the planning process. Following a period of review, additional public and agency comments were integrated into the Final Airport Layout Plan Report and drawing set.

AIRPORT ~~LAYOUT~~MASTER PLAN REPORT CONCLUSIONS

1. Ken Jernstedt Airfield is owned and operated by the Port of Hood River, Oregon. The ownership of the airport was transferred from Hood River County to the Port in 1976. According to local records, the current airport site was acquired and developed by Hood River County in the mid-1940s, replacing another local airstrip that was developed in 1928 and closed in 1931.

2. The airport is categorized as a "Community General Aviation Airport" in the 2000 Oregon Aviation Plan and is included in Oregon's core system of airports, which denotes its significance in Oregon's aviation system.

3. The airport is included in the National Plan of Integrated Airport System (NPIAS), making it eligible for federal funding through the Federal Aviation Administration (FAA).

4. The "existing" critical aircraft type identified in the 1990 Airport Master Plan was a Cessna 421 light twin-engine aircraft included in Airport Reference Code (ARC B-I). The "future" critical aircraft was identified as a Beechcraft King Air 200, a twin-engine business turboprop (ARC B-II).

5. The airport has a single paved and lighted runway (3,040 feet by 75 feet) with a full-length parallel taxiway on its north side. The airfield facilities are generally designed to meet FAA Airport Design Group (ADG) I standards associated with small fixed wing aircraft. However, some facilities (runway width, pavement strength, taxiway widths) are designed to accommodate larger aircraft.

6. Runway 07/25 has a pavement strength rating of 23,000 pounds for aircraft with single wheel landing gear configurations.

7. Airfield lighting currently includes low intensity runway edge lights (LIRL), runway end identifier lights (REIL) on Runway 25, runway threshold lights and the airport beacon.

8. Landside facilities (aircraft parking aircraft parking apron, hangars, etc.) are located on both sides of the runway; however, the fixed base operator (FBO) and aircraft fuel are located on the south side of the airfield.

9. The 1990 Airport Master Plan indicated that the airport consisted of 120 acres of land held in fee and recommended 48.2 acres of future property acquisition for the airport to accommodate facility improvements and airspace protections.

10. The most recent estimate of air traffic activity generated through the ODA Acoustical Counting Program is for 1998 (13,555 annual operations). The airport had 80 based aircraft listed on the most recent FAA Form 5010 Airport Record Form.

11. The airport operates under day and night visual flight rules (VFR) and does not currently have instrument approach capabilities. According to a December 2008 Airport Layout Plan Airspace Classification Review, "The feasibility of developing a nonprecision instrument approach to Runway 7/25 has not been established by FAA through detailed airspace and flight procedure analyses. In the event that a basic feasibility can be established, it appears that the approach minimums would be negatively affected by terrain clearance requirements for the inbound approach procedure, missed approach procedure, or both segments. These conditions suggest that developing instrument procedures, if feasible, may have marginal effectiveness. Local pilots familiar with the terrain surrounding the airport have expressed reservations about the viability of developing a useable instrument approach to either runway end."

12. Aviation fuel (AVGAS) and aircraft maintenance services are available at the airport.

13. The airport has an automated weather observation system (AWOS), which provides 24-hour on-site weather observation.

14. The airport is zoned Airport Development (AD) by Hood River County. The airport is surrounded by predominantly Exclusive Farm Use (EFU), with areas of Rural Residential zoning located to the north and west. Airport overlay zoning exists (County) based on the airspace surfaces previously defined for the airport. The airport is located entirely outside the City of Hood River urban growth boundary (UGB).

15. Ken Jernstedt Airfield does not currently have sufficient land area to accommodate forecast demand for hangar space.

AIRPORT ~~LAYOUT~~MASTER PLAN REPORT RECOMMENDATIONS

The recommendations of previous planning efforts were examined and revalidated or modified as appropriate based on current considerations and design standards.

1. Current design standards for Runway 7/25 are based on airport reference code (ARC) B-I; the ultimate design standards are based on ARC B-II.

2. A regular schedule of pavement maintenance (vegetation control, crack filling, slurry seals, patching, etc.) should be conducted on airfield pavements to maximize the useful life and optimize life cycle maintenance expenditures.

3. Shifting the ends of Runway 7/25 approximately 550 feet east is recommended to improve obstruction clearance at both runway ends.

4. The section of Orchard Road that is located approximately 300 feet from the east end of Runway 7/25 will be closed to accommodate the runway shift and to eliminate the existing obstructions to the Runway 25 approach.

5. Based on the ultimate B-II ARC, the north parallel taxiway and portions of the south parallel taxiway will be closed (relocated) to meet the 240-foot runway separation standard. Some existing aircraft parking and fueling facilities will also require reconfiguration to meet B-II design standards.

6. Future development of aircraft hangars and aircraft parking areas will be located on the north side of the runway. Relocation of the fixed base operation and aircraft fueling facilities to the north apron is also recommended. Redevelopment of the south apron areas to accommodate additional hangars is recommended, where space permits.

7. Property acquisition is recommended on the north side of the airport to accommodate future hangar development.

8. Property acquisition is recommended along the southeast edge of the airport to allow the airport to maintain a clear runway primary surface (extending 250 feet from runway centerline), based on the ultimate B-II ARC ~~and future instrument approach~~ development.

9. Trees located within the primary and transitional surfaces should be removed or topped to eliminate obstructions.

10. Buildings or other structures penetrating the primary or transitional surfaces should be removed or marked with obstruction lights.

11. Extensions of access roadways and utilities within the airport will be required to serve new aviation-related development areas.

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12. Visual Approach Slope Indicators (VASI) or P~~p~~recision ~~approach~~ Approach ~~path~~ Path ~~indicators~~ Indicators (PAPI) are recommended for Runways 7 and 25.

13. Lighted wind cones are recommended near the ends of Runway 7 and 25 to improve the representation of surface wind conditions.

14. Fencing should be added along the airport boundary to limit unauthorized human, animal and vehicle access to the airfield. In addition, fencing and electronic (keypad combination) gates should be provided within the airport to further protect aircraft operations areas from unauthorized vehicle or pedestrian access.

15. Hood River County ~~and the City of Hood River~~ should update existing airport overlay zoning to reflect the updated boundaries of the FAR Part 77 airspace surfaces defined in this plan to comply with state law (ORS Ch. 836.600-630). In addition to ensuring quality and cohesive mapping of the areas affected by the required airport overlay zone, in ~~both the City and~~ County jurisdictions, the existing zoning and transportation plan languages should also be reviewed and amended to ensure compliance with ORS Chapter 836.600-630.

16. Hood River County should ensure that development of rural lands in the vicinity of the airport be compatible with airport activities. Maintaining the Agricultural or Manufacturing zoning in the areas surrounding the airport provides effective land use compatibility with airport operations. Development of residential areas, or increasing the densities of existing rural residential areas within the boundaries of the protected airspace surfaces of Ken Jernstedt Airfield should be discouraged to ensure the long-term viability of the airport.

17. The Port of Hood River should require that applicants for all leases or development proposals involving construction of structures demonstrate compatibility with the airport's protected airspace surfaces. The applicant should be required to provide documentation of "no objection" by FAA resulting from the review of FAA Form 7460-1 – Notice of Proposed Construction or Alteration (to be submitted by the Port), prior to approval of ground leases. Any proposal that receives an objection by FAA should not be approved without first addressing FAA concerns.

18. County planning officials should adopt a policy so that "documentation of no objections by FAA" is not required for non-critical airspace areas.~~require that applicants for all proposed development on the airport or within the boundaries of the airport overlay zone~~

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~~(as defined by the updated Airport Airspace Plan – Drawing 3) provide documentation of "no objection" by FAA resulting from review of proposed development (FAA Form 7460-1), as a condition for issuing building permits or zoning modification.~~

19. With Port of Hood River Airport Master Plan adoption completed, Hood River County should adopt ~~The Port of Hood River should adopt the Airport Layout Plan Report and drawings in a timely manner to guide airport activities. Hood River County should also adopt~~ the Airport ~~Layout~~Master Plan Report and drawings for incorporation into local comprehensive and transportation planning.

20. An updated Exhibit "A" property plan ~~should be~~has been prepared for Ken Jernstedt Airfield ~~to update~~, updating airport property boundaries and acreage. FAA has reviewed and approved the~~The~~ updated Exhibit "A" ~~should be submitted to FAA for review and approval.~~.

21. The Port of Hood River should initiate the recommended improvements and major maintenance items in a timely manner, requesting funding assistance under FAA and other federal, state or county funding programs for all eligible capital improvements.

CHAPTER TWO
INVENTORY OF EXISTING CONDITIONS

INTRODUCTION

This chapter documents existing conditions and aviation activity at the airport. Existing forecasts of aviation activity will be evaluated, and updated as necessary, to identify in broad terms, anticipated trends that may affect development needs at Ken Jernstedt Airfield, through the twenty-year planning period and beyond. The existing airfield facilities were also examined during recent on-site inspections. Historical data from a variety of sources are used in this evaluation:

- **Hood River Airport Master Plan ~~1990~~2004 ~~2010~~ 2024** (~~W&H Pacific, Inc., Century~~ West Engineering, ~~1994~~2005)
- Hood River Airport Master Plan 1990-2010 (W&H Pacific, Inc., 1994)
- **Hood River Airport Master Plan Report** (Century West Engineering, 1977)
- **Hood River Airport Planning Study – Demand Analysis of Runway Options and Review of RPZ Standards** (W&H Pacific, Inc., 2000)
- **Hood River Airport Pavement Evaluation Maintenance-Management Program** (Pavement Consultants, Inc., 2000)
- **Oregon Continuous Aviation System Plan – Volume I: Inventory and Forecasts; Volume III: Recommended Development Plan** (AirTech, 1997)
- **Oregon Aviation Plan** (Dye Management Group, 2000)
- **FAA Airport Master Record Form** (5010-1), **APO Terminal Area Forecasts**.
- **Seattle Sectional Aeronautical Chart; IFR Enroute Low Altitude (L-2) Chart** – US DOT Federal Aviation Administration National Charting Office.
- **Instrument Approach Procedure Charts** - Jeppesen Airway Manual
- Other local documents and regional socioeconomic data.

Airport History

In 1928, the Hood River County Court authorized construction of an airfield, located on a flat field west of the Hood River, in response to the need to provide landing capability for airplanes traveling through the Columbia Gorge. By 1931, increased air traffic led to noise, dust and complaints from the residential area surrounding the airfield, causing the County Court to limit the use of the airfield to refueling and emergencies only. This effectively closed the airstrip.

In 1945, the airport's current location was established when a new airstrip was created by two aircraft owners on 80 acres of leased pasture near Orchard Road. The Civil Air Patrol helped prepare the field in exchange for use of the airstrip. At this time, an agricultural spraying business was started.

In 1946, the County took over ownership and operation of the airfield, under public pressure to establish a municipal airport facility. Additional land was acquired to make it safer for use by larger aircraft. By 1952, the turf runway was 1,960 feet long. A small hangar and mechanic shop were built around this time. In 1959, the turf runway was paved. The County acquired more land for expansion in 1960. Airport ownership was transferred from the County to the Port of Hood River in January 1976. The Port also purchased an additional 35 acres of land adjacent to the airport for future expansion and began working toward bringing the airport into FAA compliance.

The 1970s and 1980s were a time of major growth for the airport as both business and government usage increased, creating further need for improvements. During this time, more property was added, several hangars were constructed, the runway was rehabilitated and extended to 3,040 feet, a lighting system was installed, two 12,000-gallon underground fuel tanks were installed, and the north tiedown apron was constructed.

During the mid to late 1990s, further improvements were made to the runway and taxiway, as recommended in a master plan published in 1994. Other improvements included the construction of the south 12-unit T-hangar, removal of the underground fuel storage tanks, and the construction of a north access road. A new 12,000-gallon above ground fuel storage tank was installed to replace the underground tanks.

In June 2001, the Port Commission changed the name of Hood River Airport to Ken Jernstedt Airfield, to honor Ken Jernstedt, a World War II Flying Tiger ace. Mr. Jernstedt was also a former state legislator, served as mayor of Hood River twice and owned a local business.

AIRPORT LOCALE

Ken Jernstedt Airfield is located approximately one and one-half miles southwest of the City of Hood River, in northeastern Hood River County, adjacent to Tucker Road (State Highway 281). Highway 281 is a secondary north-south highway route in Hood River County, which connects to State Highway 35 at Parkdale, approximately 15 miles south of Hood River. Highway 35 is the primary north-south route through the county, which provides a direct route south to Mount Hood National Forest where it joins U.S Highway 26, then continues south and connects to U.S. Highway 97. U.S. Interstate 84 is the primary east-west highway route and provides a direct route from Portland, which is 66 miles west of Hood River.

Established in 1895, Hood River is the largest community, the county seat and one of two incorporated cities within Hood River County (Cascade Locks is the other incorporated city in the county). Hood River County, located at the north-central Oregon, borders Wasco County to the east and south; Clackamas and Multnomah Counties to the west; and the Columbia River and Washington State border to the north. Hood River County is situated mainly within the Hood River Basin with a land area of 533 square miles (339,865 acres). The region is comprised mainly of farmland, rivers, lakes, creeks, and moderate to highly mountainous terrain

Recreational activities in the local area include windsurfing, skiing, fishing, hiking, biking, golf and visiting scenic areas including the Columbia River Gorge National Scenic Area, Mt. Hood Recreation Area, Crown Point State Park, Columbia River, Multnomah Falls, and other waterfalls. Hood River County also has two ports and two boat basins, with one serving local barge traffic, a steel boat manufacturing firm and Mid-Columbia yachting interests. The City of Hood River, situated along the Columbia River, attracts windsurfers from all over the world.

Airport Environment

The airport area is approximately 120 acres with an elevation of 631 feet above mean sea level (msl). Major landside developments and services (six hangars, FBO, aircraft parking, fueling, aircraft maintenance, etc.) are located on the south side of the runway; an aircraft parking apron and several hangars (two 12-unit T-hangars and two multi-space conventional hangars) are located on the north side of the runway. Two large conventional hangars are located off airport property to the north and are served by a taxiway that extends beyond the aircraft apron and northwest hangar area. The north and south landside developments are served by separate access roads that connect to Tucker Road/State Route 281.

CLIMATE

The geographical climate for Hood River County varies greatly, with elevations ranging from 100 feet along the Columbia River to 11,235 feet at Mt. Hood. The climate of southern Hood River County is characterized by heavy annual precipitation, with considerable snowfall most winters, and cool summer temperatures. The climate of northern Hood River County has less precipitation, less snowfall, and significantly warmer temperatures in the summer. Ken Jernstedt Airfield is located in northern Hood River County in the Hood River Valley. Detailed climatic data for Hood River was available for a 29-year period between 1971 and 2000.[3] The average maximum temperature is 82.3 degrees Fahrenheit (August) and the average minimum temperature is 27.9 degrees (January). Hood River averages 32 inches of precipitation and 33 inches of snowfall annually. The daily extreme temperatures recorded for Hood River are -10 degrees Fahrenheit (January) and 108 degrees (August). The prevailing winds for Hood River are primarily from the west, but in the winter large-scale easterly flows can occur.

GEOLOGY

Hood River County has an area of 533 square miles and is bordered by the Columbia River along the northern boundary and Mt. Hood to the south. Hood River County is located within the Columbia Lava rock formation. This formation is a vast sheet covering nearly 250,000 square

[3] Western Regional Climate Center.

miles and varying in thickness from 300 to 4,000 feet and was formed by a series of several eruptions between Mt. Hood and Mt. Adams.

Ken Jernstedt Airfield is situated in the Hood River Valley, which extends about 16 miles south from the Hood River city center. This area is very fertile and is used to grow a variety of agricultural crops. About 74 percent of Hood River County is under public ownership, with Mt. Hood National Forest comprising 84 percent of these public lands. The privately owned lands are concentrated in the Hood River Valley.

The terrain at the airport site is generally level with some gentle sloping. The dominant soil in the vicinity of the airport is classified as Rockford stony loam (typically located on uplands), moderately deep and well drained with 0 to 8 percent slope.[4] Rockford soils were formed in very stony, medium and fine textured glacial outwash from basalt and andesite. These soils have a depth to bedrock of 40 to 60 inches. At the east end of the airport, the soils become a mix of sandy loams and fine sandy loams (Van Horn and Wind River series), which were formed in alluvial deposits. These alluvial deposits are most likely associated with the proximity of the east end of the airport to Hood River, which is a major tributary of the Columbia River. The soils in all of these series are used for pasture, hay, fruit orchards, woodland, wildlife habitat, and water supply. The land surrounding the airport is used largely as fruit orchards.

SOCIOECONOMIC CONDITIONS

Population

According to data compiled by the U.S. Census Bureau and Portland State University Center for Population Research and Census, the population of Hood River County was 20,411 in 2000. The population of Hood River, one of only two incorporated cities in Hood River County, had a population of 5,831 in 2000.

Between 1990 and 2000, the population within the City of Hood River increased by 26 percent (2.3% average annual rate). Within Hood River County, the population increased by approximately 21 percent during the same period (1.9% average annual rate). This growth was up sharply from the previous ten-year period between 1980 and 1990, where population growth averaged less than one percent per year for both Hood River and Hood River County. A certified

[4] U.S. Department of Agriculture, Soil Conservation Service (1981).

estimate for 2001 by the Population Research Center shows the City of Hood River, with an annual increase of 3.2 percent above 2000 levels, outpacing Hood River County's growth, which was less than one percent.

Hood River County's population is projected to increase by approximately 50 percent (to 30,780) by the year 2040.[5] This represents an average annual increase of approximately 1.03 percent over the forty-year period. If current city/county distributions continue, the population for Hood River would be expected to increase to approximately 8,793 residents by 2040.

Economy

Hood River County's economy is comprised of agriculture, food processing, forest products, electronics and electronics manufacturing, recreation and tourism, and wholesale and retail trade. Tree fruits and nuts, specialty products, cattle, and miscellaneous animals are the principal agricultural products. Hood River County grows pears, apples, cherries, and peaches on more than 14,000 acres of commercial orchards and is the world's leading Anjou pear producer. There are approximately 380 commercial farms and 20,000 acres in farmland. Historically, agricultural sales have been a significant source of revenue for the county, but the industry experienced a significant gross sales decline in 2000 in the fruit tree and nuts sector, primarily pears.

The five largest employers in Hood River County, as of March 2002, were Providence Hood River Memorial Hospital, Sprint Communications, Luhr Jensen & Sons, Inc., Wal-Mart, and Hood River Inn.[6] According to the 2002 Regional Economic Profile for Central Oregon, the growth in the retail and trade sectors that occurred in 2000 helped to offset losses in the manufacturing (specifically forest products) industry, transportation and public utilities. Hood River County's economy relies heavily on the manufacturing, trade, wholesale and retail sectors.

The Port of Hood River is actively involved in supporting economic development within the local area through operation and management of several facilities including the airport, marine facilities and industrial lands.

The 2000 average annual unemployment rate in Hood River County was 7.8 percent. While still about 2.4 percentage points above the statewide level due to the high rate of seasonal

[5] State of Oregon, Office of Economic Analysis.
[6] Oregon Economic and Community Development Department (2002)

employment characteristic of the agriculture and timber products industries, the unemployment rate has been steadily improving since 1998.

Job growth for Hood River County increased by 2.4 percent in 2000, slightly ahead of the statewide growth average (1.8 percent) during the same period. While a continued decline in the forest products industry is projected through 2010, other types of manufacturing are expected to grow, as they have during the last ten years. The manufacturing sector, not including the forest products industry, experienced a gain of 270 jobs from 1990-2000, an increase of 38 percent. In 2000, the service industry (mainly lodging, amusement, and recreation) along with the trade industry became the county's largest non-farm industries. Sustained growth is anticipated to occur in the service and trade sectors.

AIRFIELD FACILITIES

Historically, Ken Jernstedt Airfield has served a variety of general aviation users, including business, commercial, and government aviation. The United States Forest Service (USFS) and the Bureau of Land Management (BLM) periodically utilize the airport to support their operations. **Table 2-1** summarizes airport data.

TABLE 2-1
AIRPORT DATA

Airport Name/Designation	Ken Jernstedt Airfield (4S2)
Airport Owner	Port of Hood River
Date Established	1946
Airport Category	National Plan of Integrated Airport Systems (NPIAS) General Aviation. FAA Airport Reference Code: B-I
Oregon Aviation System Designation	Community General Aviation Airport (Category 4)
Airport Acreage	Approximately 120 Acres
Airport Coordinates	N 45°40.36' W 121° 32.19'
Airport Elevation	631 feet Mean Sea Level (MSL)
Airport Traffic Pattern Configuration/Altitude	Left Traffic – 1,500 feet MSL (869 feet above ground level) Right Traffic for Gliders and Ultralights

Runways and Taxiways

Ken Jernstedt Airfield has one paved, lighted runway (7/25), oriented in an east-west direction. The runway has basic runway markings (runway numbers, centerline stripe, and taxiway lead-in striping), which are consistent for runways used in visual flight rules (VFR) conditions. The runway utilizes a standard left traffic pattern for powered aircraft and right traffic for gliders and ultralights.

Runway 7/25 is served by a full-length parallel taxiway on its north side with three exit taxiways (one at each end of the runway and a third exit located 875 feet from the Runway 7 threshold.). The runway has a partial-length (900-foot) parallel taxiway on its south side, with three exits. Another 560-foot section of south parallel taxiway extends from the east end of the terminal apron and is not directly connected to the runway. The dimensions and runway separations for each of the parallel taxiway sections are different and will be evaluated for compliance with FAA standards later in the study. There are no aircraft holding areas located adjacent to the parallel taxiways, although aircraft hold lines are located 125 feet from runway centerline on all exit taxiways that connect to the runway. None of the taxiways on the airport have edge lighting or reflectors. **Tables 2-2 and 2-3** summarize existing runway and taxiway facilities.

TABLE 2-2
RUNWAY 7/25 DATA

Dimensions	3,040 x 75 feet
Effective Gradient	.01259%
Surface	Asphalt
Weight Bearing Capacity	23,000 pounds – Single Wheel Landing Gear[1]
Marking	Basic (rwy numbers, centerline stripe; yellow lead-in lines at main exit taxiway)
Lighting	Low Intensity Runway Edge Lighting (LIRL); threshold lights; REIL (Rwy 25)
Wind Coverage	96.5 percent (All Weather) with a 15 mph crosswind. Data: 1994 ALP

1. Pavement Strength as published in U.S. Airport/Facility Directory

The north parallel taxiway (Taxiway "A") has taxiway connections at the east and west ends of the north apron. Taxiway A and the other access taxiways serve the north aircraft tiedown apron and the adjacent on- and off-airport hangars.

TABLE 2-3
TAXIWAY DATA

Taxiway	Dimensions/Configuration
North Parallel Taxiway (Alpha)	
Dimensions	3,040 x 30 feet with (3) 90-degree exit taxiways
Surface	Asphalt (good condition)
Marking	Centerline stripe; hold lines 125 feet from Rwy centerline on all exit taxiways
Lighting/Reflectors	None
Runway-Parallel Taxiway Separation	200 feet
South Parallel Taxiway (Bravo)	
Dimensions	900 x 25 feet with (3) 90-degree exit taxiways
Surface	Asphalt (good condition, except far west end - very poor)
Marking	Centerline stripe; hold lines 125 feet from Rwy centerline on all exit taxiways; no markings visible on far west end)
Lighting/Reflectors	None
Runway-Parallel Taxiway Separation	150 feet
South Parallel Taxiway (East Extension)	
Dimensions	560 x 35 feet connected the northeast corner of the main apron and the south T-hangar taxilanes.
Surface	Asphalt (very good condition)
Marking	Centerline stripe
Lighting/Reflectors	None
Runway-Parallel Taxiway Separation	240 feet
North Hangar Taxiway (off airport)	
Dimensions	470 x 25 feet (width varies)
Surface/Condition	Asphalt (fair condition)
Marking/Lighting/Reflectors	None
Southwest AG Area Taxiway	
Dimensions	200 x 25 feet
Surface	Asphalt (fair condition)
Marking/Lighting/Reflectors	None

The south parallel taxiway (Taxiway "B") extends from the end of Runway 7 to the east end of the south apron, opposite the fixed base operator (FBO). Taxiway B has seven connections to adjacent hangar and apron taxiways/taxilanes serving south landside facilities. The separate section of south parallel taxiway that extends east of the FBO area is not directly connected to Taxiway B or the runway. This taxiway is currently limited to providing access to the hangars located east of the FBO. A short section of taxiway connects Taxiway "B" to the adjacent agricultural aircraft operations area.

During site visits, associated with this project, most of the runway and taxiways appeared to be in fair condition, except the extreme western section of the south parallel taxiway, which was observed to be in very poor condition. The runway numbers and other markings on the runways and taxiways were also observed to be in fair condition, but some required repainting. The aircraft parking aprons appeared to be generally in good or fair condition, with some areas in fair to poor condition.

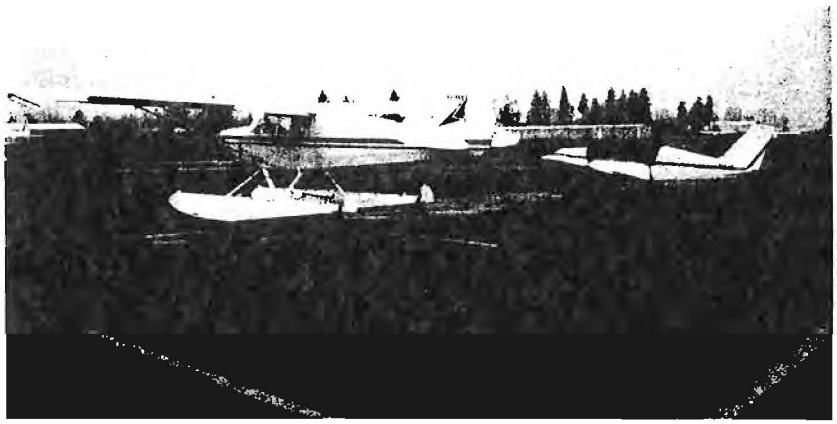
The 1994 Airport Layout Plan included a wind rose created for the runway based on estimated data generated for the airport in the 1970s. The data estimated that Runway 7/25 has approximately 96.5 percent coverage at 15 miles per hour. This level of wind coverage meets FAA requirements for small runways. Local pilots indicate that the prevailing winds generally follow an easterly-westerly direction, with seasonal shifts.

Aircraft Apron

The airport has two aircraft tiedown aprons and several smaller aprons in a variety of uses (fueling, FBO operations, aerial applicator and frontage for aircraft hangars). **Table 2-4** summarizes existing apron facilities at the airport.

The south tiedown apron has 27 light aircraft tiedowns configured in four north-south rows. The tiedowns are served by three taxilanes that extend from Taxiway B to the back edge of the apron; the taxilanes do not extend around the south ends of the tiedown rows. The outer two rows of tiedowns are single tail-in positions (4/5 tiedowns each) and the inner two rows each have 9 tail-in positions. The markings (tiedown locations and taxilane centerline stripes) are in very good condition. It appears that some of the original tiedowns on the south apron have been removed or reconfigured. The outer tiedown position in the eastern-most parking row has been sealed over

and one of the tiedown anchors has been removed. A single tiedown located immediately east of the eastern row of tiedowns has also had its markings and tiedown anchors sealed over. The outer tiedown in the western-most row of tiedowns also appears to be unavailable. A small section of hard surfacing extends from the west edge of the apron (directly in line with the tiedown) to the adjacent apron that appears to be used by vehicles.



South Apron Tiedown

The north apron is configured with three rows of aircraft parking positions served by two interior taxilanes, oriented in an east-west direction. The inner and outer tiedown rows have single tail-in parking positions facing inward toward the apron. The center tiedown row has tail-to-tail parking facing both north and south. The apron was originally configured with 48 designated parking positions with the eastern end used for aircraft fueling. Although the fuel tank has been removed, additional tiedowns have not been installed in the former fueling area. It appears that this portion of the apron is available for aircraft parking, but is not currently equipped with tiedowns. The pavement is in fair condition with extensive cracking (mostly filled), minor fuel/oil damage, minor depressions (water ponding), large asphalt patches, and vegetation growth visible. The tiedowns rows have cables extending along the apron, with individual tiedown chains attached. The cables do not appear to extend to all parking positions. The markings (tiedown positions and taxilane stripes) on the apron are in fair to poor condition.

The terminal apron extends from the FBO to the south tiedown apron and includes fueling, a limited number of aircraft tiedowns and other parking. The portion of the apron located directly in front of the large maintenance hangar is used for aircraft parking but does not have a specific tiedown configuration. The fuel storage tank is located near the northern edge of apron, adjacent to Taxiway B. The fueling area is configured to accommodate aircraft on the north and south sides of the storage tank and on the east end. Two light aircraft tiedowns are located in front of the FBO building; a third tiedown (outer position) has been removed to accommodate aircraft access to the taxiway that serves the south T-hangar.

TABLE 2-4
AIRCRAFT APRON DATA

North Tiedown Apron	Approximately 700 x 220 ' (17,111 square yards) Light aircraft tiedowns (48 positions as originally configured) Asphalt Concrete
South Tiedown Apron	Approximately 365 x 210' (8,517 square yards) Light aircraft tiedowns (27 positions) Asphalt Concrete
FBO/Terminal Apron	Approximately 370 x 120'; fueling area 55' x 135' (5,760 square yards) Temporary aircraft parking, aircraft fueling Asphalt Concrete
Hangar Apron (SW Section of Airport) Glider Club	Approximately 200 x 80' (1,778 square yards) Hangar Frontage Asphalt Concrete w/ PCC sections
Hangar Apron (NW section of airport)	Approximately 135 x 60' (900 square yards) Hangar Frontage Asphalt Concrete
Hangar Apron (SE section of airport) ANPC	Approximately 90 x 40' (400 square yards) Hangar Frontage Asphalt Concrete w/ PCC Section 12 x12'
AG Aircraft Apron	Approximately 200 x 80' (1,778 square yards) Asphalt Concrete 2 Hard Surfaced Loading Pads (approximately 30 x 50') Portland Cement Concrete (PCC)

The airport has a designated agricultural operations apron located at the southwest corner of the airport. The apron is connected to Taxiway B by a single access taxiway. The apron is asphalt surfaced with two hard surfaced areas (Portland Cement Concrete) for aircraft parking and loading. The apron appears to be in fair condition.

Agricultural Aircraft Facilities

Ken Jernstedt Airfield has one designated agricultural (AG) aircraft loading area located at the southwest corner of the airport. As noted in the previous section, aircraft access to the facilities is provided by a single access taxiway that extends from the west end of Taxiway B and Runway 7. The AG area includes an asphalt apron with one concrete loading pad, a conventional hangar, equipment storage, an aboveground fuel tank, water storage tanks, and vehicle parking. Vehicle access to the AG area is provided by the main airport access road.

Airfield Pavement Condition

As part of the **Oregon Aviation System Plan**, the Oregon Department of Aviation manages a program of pavement evaluation and maintenance for Oregon's general aviation airports. This evaluation provides standardized pavement condition index (PCI) ratings, pavement features and current conditions. Through the use of MicroPAVER computer software, current pavement condition ratings are entered into the system with the specifics of each pavement section. The program is able to predict the future condition of the pavements if no action is taken (i.e. based on a normal rate of deterioration) while also identifying the recommended measures needed to extend the useful life of the pavement section.

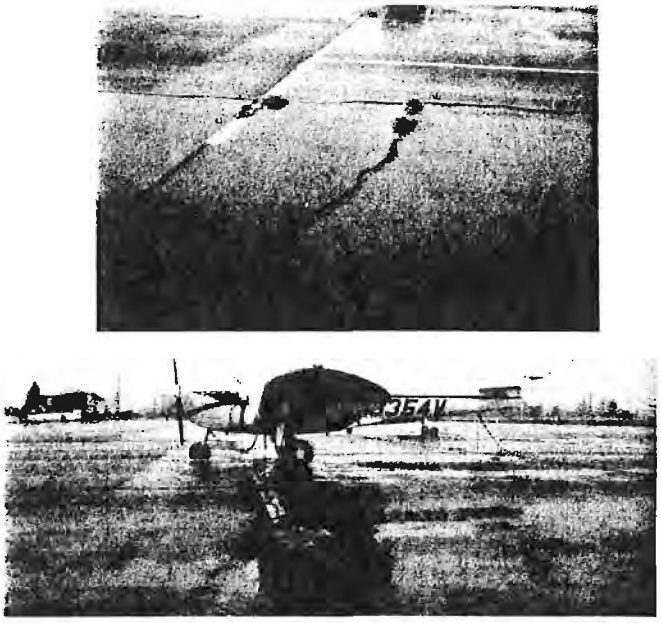
Table 2-5 summarizes airfield pavement conditions for Ken Jernstedt Airfield based on the most recent inspection conducted in 2000. During the 2000 inspection, the ratings for the pavements ranged from "excellent" to "poor." Runway 7/25 was rated "very good." The north parallel taxiway was rated "excellent." Most of the south parallel taxiway was rated "very good," with the exception of the far western section, which was rated poor. The average PCI for all airfield pavements at the airport was 75 in 2000, which corresponds to a "very good" pavement condition rating.

During recent site visits, the airfield pavements were observed to be generally consistent with the most recent formal pavement evaluations. The runway and parallel taxiways have considerable cracking, although it appears that crackfilling has been performed on a regular basis. Most sections of the aircraft parking aprons are in fair to good condition. The north apron has considerable cracking visible with large areas recently patched. Areas of vegetation growth were observed around the tiedowns and along the southern edge of the apron where vegetation has encroached onto the apron from the adjacent grass areas.

TABLE 2-5
SUMMARY OF AIRFIELD PAVEMENT CONDITION
(AUGUST 2000)

Pavement	Section Design/Age	PCI Rating[1]	Condition
Runway 7/25	2" AC (1986); 6-13" (varies) Crushed Aggregate (1986)	73 (West Section) 83 (Center Section) 81/77 (East Sections)	Very Good Very Good Very Good
Taxiway A (North Parallel)	2" AC (1986); 6" Crushed Aggregate (1986)	91 (main taxiway) 77 (center exit - north)	Excellent Good
Taxiway B (South Parallel)	2" AC (1986); 6" Crushed Aggregate (1986)	84 (main taxiway) 70 (center exit – south)	Very Good Good
Taxiway B (west section)	AC (circa 1970); Unknown Base	27 (main taxiway) 50 (west exit - south)	Poor Fair
Taxiway B (east extension)	2" AC (1995); 7" Crushed Aggregate (1995)	79 (main taxiway)	Very Good
North Tiedown Apron	2" AC (1986); 6" Crushed Aggregate (1986)	59	Good
South Tiedown Apron	2" AC (1986); 6" Crushed Aggregate (1986)	84	Very Good
AG Apron	Data Not Available	Not Rated	Fair
South (west) Hangar Apron (glider area)	AC; Unknown Base (circa 1970)	57	Good
North Hangar Apron	Data Not Available	Not Rated	Excellent (new)
North Hangar Taxilanes	2" AC (circa 1980); 6" Crushed Aggregate (circa 1980)	65	Good
South T-hangar Taxilane	2" AC (1995); 7" Crushed Aggregate (1995)	90	Excellent
South (east) Hangar Apron (ANPC)	AC; Unknown Base (circa 1983). Concrete Sections: PCC; Unknown Subbase (circa 1983)	87 (asphalt section) 72 (PCC section)	Excellent Very Good
Terminal /FBO Apron	East Section: AC; Unknown Base (circa 1983). West Section: 2" AC (1986); 6" Crushed Aggregate (1986)	26 (east section) 21 (PCC section) 84 (west section)	Poor Very Poor Very Good

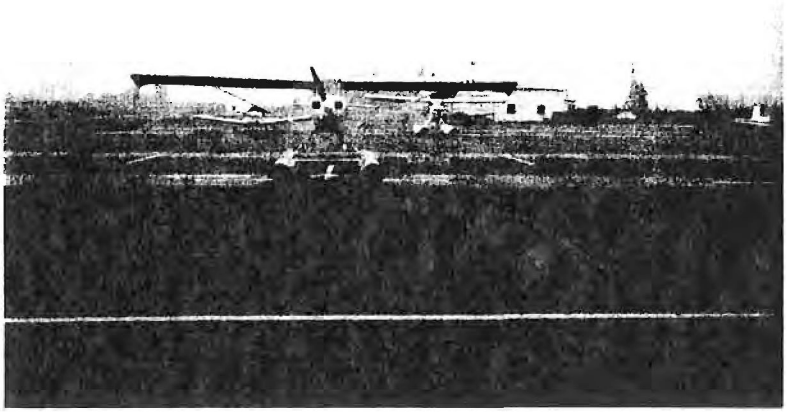
1. The Pavement Condition Index (PCI) scale ranges from 0 to 100, with seven general condition categories ranging from "failed" to "excellent." For additional details, see *Oregon Aviation System Plan Pavement Evaluation/Maintenance Management Program* for Hood River Airport.



North Apron Tiedown

The pavement in the north hangar area varies from new to very poor. The pavement located directly in front of the two new hangars is new and is in excellent condition; the taxilanes located adjacent to the T-hangars are generally in fair condition, except the northern taxilane, which was recently observed to be in very poor condition (it was rated "good" in 2000).

The pavement surrounding the south T-hangar, east of the terminal apron, is in good condition. The section of parallel taxiway that extends from the terminal apron to these hangars is also in good condition. The apron areas that front the large Quonset hangar and the adjacent conventional hangar are in good condition. The apron located directly in front of the FBO is in poor condition. The pavement surrounding the fuel area is in fair condition. The apron located between the FBO and the south tiedown apron is in fair to good condition. The AG apron and access taxiway are in fair condition.



South Apron Tiedown

LANDSIDE FACILITIES

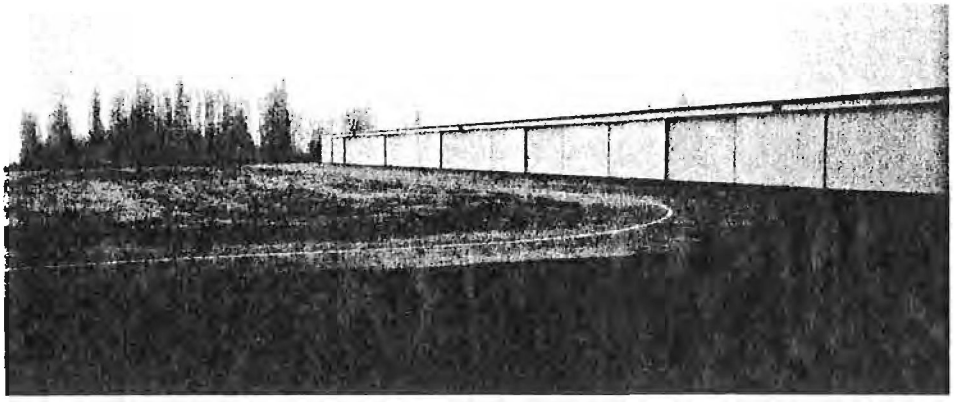
Hangars and Airport Buildings

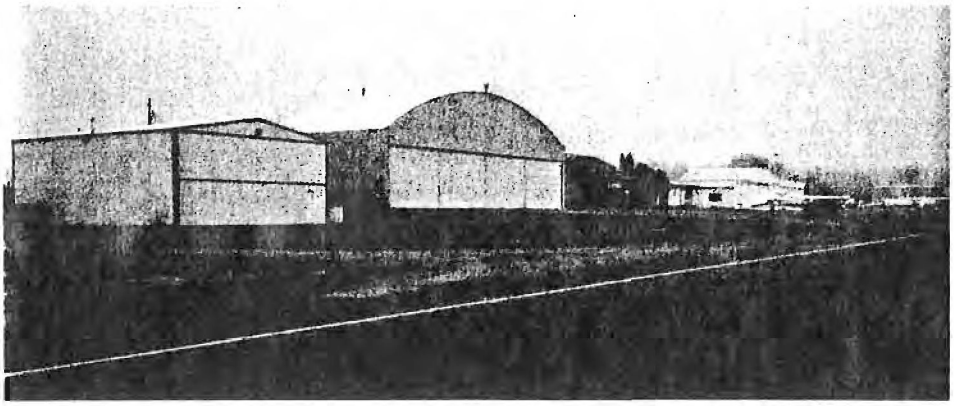
In 2004 the airport had twelve buildings, including seven conventional hangars, three T-hangars, one double-wide mobile office/classroom building, and the FBO office. The hangars are used primarily for aircraft storage, although the airport also supports two airport-based businesses (Flightline Services and Shearer Sprayers Inc.); a third business (Advanced Navigation & Positioning Corporation) leases a hangar on the airport.

Two additional large conventional hangars are located off airport property (north) and are accessed by a single access taxiway that extends beyond the north apron. A small hangar attached to a residence is located off-airport property, near the end of Runway 25 on the south side. Existing airport buildings are summarized in **Table 2-6.**

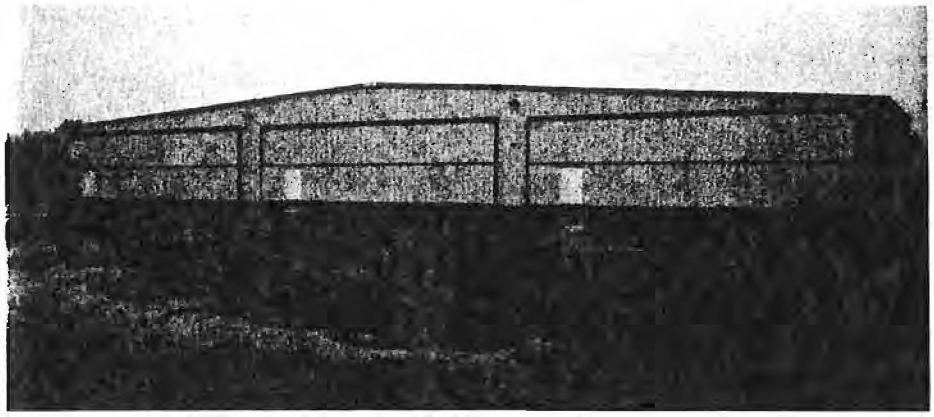
TABLE 2-6
AIRPORT BUILDINGS

Bldg. No. (See Figure 2-2)	Building	North / South Side of Rwy	Existing Use
1	Conventional Hangar (Shearer Sprayers)	South	AG Operations, Aircraft Storage
2	Conventional Hangar (~~Glider Club~~Insitu)	South	Aircraft Storage
3	Medium Quonset Hangar	South	Aircraft Maintenance
4	Large Quonset Hangar	South	Aircraft Storage
5	Conventional Hangar (ANPC)	South	Commercial Operation
6	Modular Building	South	Classrooms, Office
7	Fixed Base Operator	South	Office, restrooms, pilot/passenger waiting area
8	South T-Hangar (12-unit)	South	Aircraft Storage
9	North T-Hangar #1 (12-unit)	North	Aircraft Storage
10	North T-Hangar #2 (12-unit)	North	Aircraft Storage
11	Large Conventional Hangar (3-bay)	North	Aircraft Storage
12	Medium Conventional Hangar	North	Aircraft Storage
13	Large Conventional Hangar (Off airport property)	North	Aircraft Storage, Museum
14	Large Conventional Hangar (Off airport property)	North	Aircraft Storage, Museum
15	Small Conventional Hangar Attached to Residence	South	Aircraft Storage





Airport Hangars (South)



Airport Hangars (North)

Airport Lighting

Ken Jernstedt Airfield accommodates day and night operations in visual flight rules (VFR) conditions. Runway 7/25 is equipped with low intensity runway edge lighting (LIRL) and threshold lights. The runway lights are in fair to poor condition and are set on a dusk-to-dawn automatic (photocell) switch. The taxiways on the airport do not have any lighting or edge reflectors; major exit taxiways are marked with blue light fixtures as part of the runway edge lighting.

Neither runway end is equipped with visual guidance indicators (VGI), although visual approach slope indicators (VASI) were recommended in the 1994 ALP. ~~Local pilots have indicated that visual guidance indicators (VGI), such as visual approach slope indicators (VASI) or precision approach path indicators (PAPI) would be a significant safety improvement. It appears that some obstructions (trees, etc.) located beyond the runway ends may need to be removed to accommodate a VGI with a typical slope of 3 to 5 degrees.~~

Runway 25 is equipped with runway end identifier lighting (REIL), which is pilot-activated on the radio frequency 122.8 MHz. The REIL consists of two high-intensity strobes located near each corner of the runway end that flash in short sequences to improve the identification of the runway for pilots landing in darkness or reduced visibility conditions. It appears that ground-level shielding was added to reduce glare for vehicles traveling on Orchard Road, which is approximately 260 feet from the REIL.

The airport rotating beacon is mounted on the roof of the large Quonset hangar, immediately east of the FBO on the south side of the runway. The beacon is also set on an automatic dusk-dawn switch. The airport has a large unlighted wind cone mounted on the roof of a hangar, west of the FBO; a second unlighted wind cone and segmented circle is located east of the terminal apron, along the south edge of the runway. **Table 2-7** summarizes existing airport lighting at Ken Jernstedt Airfield.

Overhead flood lighting is mounted on most hangars around the airport. Additional overhead lighting is located in the aircraft fuel area and along the main (south) access road.

TABLE 2-7
AIRPORT LIGHTING

Component	Type	Condition
Runway Lighting	Low Intensity Runway Edge Lighting (LIRL)	Fair/Poor
Approach/Other Runway Lights	Runway End Identifier Lights (REIL) Rwy 25	Good
Taxiway Lighting or Reflectors	None	N/A
Lighted Airfield Signage	None	N/A
Visual Guidance Indicators	None	Good
Airport Lighting	Airport Rotating Beacon	Good

AIRSPACE AND NAVIGATIONAL AIDS

Ken Jernstedt Airfield does not have any ground-based electronic navigational aids. The previous airport master plan recommended development of a global positioning system (GPS) non-precision instrument approach at the airport. During the December 2008 Airport Layout Plan Airspace Classification review, it was determined an instrument approach standard would have marginal effectiveness. After considering this and unintended land use consequences implicit with an instrument approach, the Port has abandoned all efforts to develop an instrument approach. The existing visual approach remains. ~~This recommendation will be reexamined in the facility requirements analysis.~~

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The airport has automated weather observation system (AWOS) on the north side of the runway. The AWOS provides important weather information to pilots operating in VFR conditions,

~~and will also meet on-site weather requirements in support of any future instrument approach development. **Table 2-8** summarizes existing navigational aids and related items.~~

~~TABLE 2-8~~
~~NAVIGATIONAL AIDS AND RELATED ITEMS~~

~~Type~~	~~Facilities~~
~~Electronic Navigational Aids~~	~~None on site. Nearest Locations:~~ ~~– Klickitat VORTAC (18.5 nm NE) 112.3 MHz~~ ~~– Laker NDB (40 nm SW) 332 KHz~~
~~Instrument Approaches~~	~~None~~
~~Weather Observation~~	~~AWOS~~
~~Communication~~	~~Common Traffic Advisory Frequency (CTAF) 122.8 MHz~~

The area surrounding the airport consists of orchards and other forested lands in a variety of uses including residential, commercial, industrial and agricultural. Tucker Road crosses through the runway protection zone (RPZ) for Runway 7 and Orchard Road travels through the RPZ for Runway 25. It appears that vehicles traveling on the roads penetrate the standard 20:1 visual approach surfaces for both runways, although the 1994 Airport Layout Plan indicates that 20:1 obstacle clearance approaches (OCA) are clear. To accomplish this, the 20:1 OCA begins at the runway end, rather than the standard 200 feet beyond the runway. The OCA is an alternative approach clearance criteria used when standard approach clearances cannot be met. The previous runway approach clearance criteria will be reviewed in this plan update.

Tables 2-8 and 2-9 summarize notable obstructions, special airspace designations and IFR routes in the vicinity of Ken Jernstedt Airfield, as identified on the Seattle Sectional Aeronautical Chart. Local airport operations and flight activity is not affected by the noted airspace or obstructions located in the vicinity of the airport.

TABLE 2-8
LOCAL AIRSPACE OBSTRUCTIONS/FEATURES
(10 nautical mile radius)

Type of Obstruction	Description	Distance From Airport
Overhead Power Line	Transmission Line	10 miles south of airport
Overhead Power Line	Transmission Line	0.5 -1.0 miles north/east of airport
Overhead Power Line	Transmission Line	5 miles north of airport
Federal Wilderness Area	Aircraft are required to maintain 2000 feet AGL over designated area.	7 miles west of airport; Columbia Wilderness Area

TABLE 2-9
AIRSPACE/~~INSTRUMENT~~ ROUTES

Airspace Item	Description	Location
Low Altitude Enroute Airway	Victor 520 – 7,000 feet mean sea level minimum enroute altitude (MEA)	3 nautical miles south. Connects Battleground and Klickitat VORTACs on a 054-234 degree course.
Low Altitude Enroute Airway	Victor 112-182 – 7,000 feet mean sea level minimum enroute altitude (MEA)	3 nautical miles north. Connects Battleground and Klickitat VORTACs on a 071-251 degree course.
Military Training Route	IR344 - extends from the surface upwards.	2 nautical miles east.

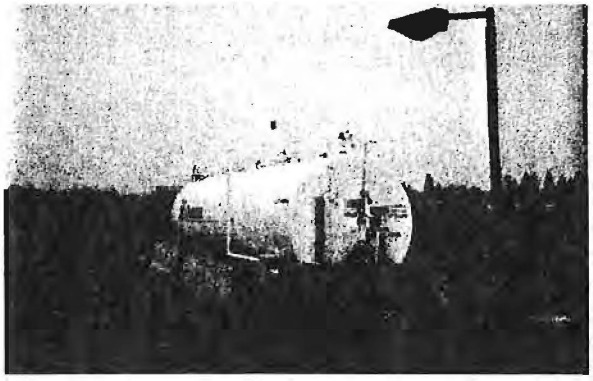
Class E Airspace	Associated with low altitude federal airways (700 feet above ground level)	11 miles east; in vicinity of Klickitat VOR.

The local airport traffic pattern altitude is 1,500 feet mean sea level (MSL), which is approximately 869 feet above ground level (AGL) with standard left traffic. Gliders and ultralights use a right traffic pattern. Ken Jernstedt Airfield is located near an area of Class E airspace with floor 700 feet above ground level, although there are no mandatory radio communication requirements during visual flight rules (VFR) conditions.

AIRPORT SUPPORT FACILITIES/SERVICES

Aircraft Fuel

Aviation gasoline (AVGAS) is available for sale at the airport. The airport has one 12,000-gallon double wall aboveground fuel storage tank for 100LL AVGAS. The fuel storage tank and dispensing area are located on the south side of the runway, opposite the FBO building. Jet fuel is not available for sale at the airport, but it may be added in 2009.



Aviation Fuel Storage (12,000-gallon 100LL AVGAS)

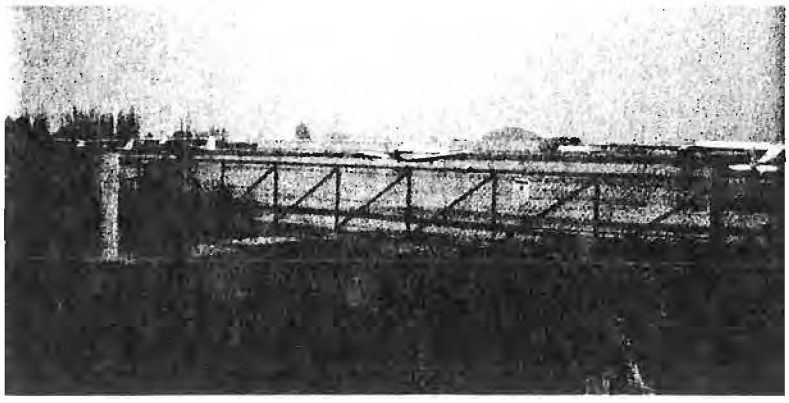
Shearer Sprayers (Aero Spray) maintains a 3,000-gallon double wall aboveground fuel tank for storage of jet fuel for their turbine-powered Air Tractor 402B, which is currently the only turbine powered aircraft based at the airport.

Surface Access and Vehicle Parking

Vehicle access to the south apron and hangar areas is provided by the airport access road that extends from Tucker Road. A north side airport access road also extends from Tucker Road to serve the north hangars and apron. Vehicle parking on the airport includes paved areas located adjacent to the FBO and other buildings along the main access road. Additional paved vehicle parking is located adjacent to each of the conventional hangars located on the south side of the runway. A small parking area is located outside the vehicle gate adjacent to the north apron.

Fencing

The airport has wire fencing along portions of its boundary, although the majority of the airport is not fenced. The airport has two electric-powered keypad controlled vehicle gates located adjacent to landside areas. One gate is located at the end of the north airport access road, which provides access to the north apron and north-side hangars. The second gate is located at the end of the main airport access, just east of the FBO building, and provides access to the south T-hangar and the ANPC hangar.



Access Road & Electronic Gate at North Apron

It has been reported that pedestrians are frequently observed walking on the airport and reports of runway incursions are numerous. The area surrounding the airport provides a pleasant environment for walking; however, a significant safety hazard for both pedestrians and aircraft operators is currently created by the non-aviation activity on the airfield. Chain-link fencing along the airport property line is normally recommended to limit unauthorized access to an airfield.

South Tiedown Apron & Access Road

Another common airfield incursion occurs when vehicles are driven around the west end of the runway to access aircraft parking and hangars on the north side of the runway. The common path extends within 30 feet of the end of Runway 7 within the runway safety area and runs from the

west end of the south and north parallel taxiways. This issue will be examined further in the facility requirements evaluation.

Utilities

Ken Jernstedt Airfield is located more than one mile outside the ~~city~~ limits and has water, electric and telephone service. The airport is not served by sanitary sewer at this time, but the airport's owner, Port of Hood River, played an early financial role in establishing the Windmaster Sewer District that will serve the airport and properties to the west and north; a limited number of septic tanks are located on the airport for buildings with restrooms. Electrical service at the airport is provided by Pacific Power. The Ice Fountain Water District provides water service to the airport. Sprint provides telephone and data service, which includes fiber capability. Natural gas (provided by NW Natural Gas) is not available at the airport, but access is located nearby.

There are two fire stations (West Side Fire Department) located within one mile of the airport. Fire hydrants are located along the southern edge of the airport and in the north hangar area.

LAND USE PLANNING AND ZONING

Ken Jernstedt Airfield is located in Hood River County, Oregon, more than one mile south of the City of Hood River urban growth boundary. Zoning on the airport property is Hood River County Airport Development (AD). Aviation related uses are permitted outright in this zone, and light industrial uses allowed in the county's M-2, Industrial Zone are also allowed in the AD Zone, subject to Conditional Use Permit. Surrounding uses are almost exclusively rural residential and orchards. County zoning affecting lands, which neighbor and abut the Ken Jernstedt Airfield are predominantly Exclusive Farm Use (EFU), with some Rural Residential, two-acre minimum lot size zoning also occurring in the vicinity of the airport. **Table 2-10** summarizes the existing land uses and zoning in the vicinity of the airport.

A small restaurant is located on the west side of Tucker Road (Oregon State Highway 281), opposite the end of Runway 7, within the runway protection zone (RPZ). It has been previously recommended that the property located within the RPZ be acquired and the restaurant be relocated outside of the RPZ. Limited areas of residential development exist around the perimeter of the airport, particularly along the southeast corner and on the north side of the runway, near the midpoint. The local high school is located approximately ½ to ¾ miles

northwest of the end of Runway 7; flight paths should avoid direct overflights of the school, whenever possible. No other significant concerns have been identified relative to compatibility of existing land uses neighboring the airport.

The County's Airport Hazard Zones (AH) extend off either runway end and are depicted graphically on the County Assessor's maps which were provided to the consultant by the County planner as the zone map for the County; however, this does not incorporate all of the necessary airspace protection zones and requirements currently mandated by state law. Please see Chapter Six Environmental Review, Compatible Land Use section for a more detailed discussion of airport land use compatibility planning.

~~The City of Hood River has some land in its jurisdiction which would be subject to airport overlay protection, upon full compliance with Oregon's Airport Planning rules, as currently defined in Oregon's Revised Statutes (ORS) Chapters 836.600-630. The City is aware of this fact, and acknowledges the airport as requiring appropriate airspace and zoning protections.~~[2]

It is recommended that ~~both subject jurisdictions~~the County conduct an analysis of ~~their~~ its compliance with ORS 836 and make any necessary text and mapping amendments in order to demonstrate full compliance, and comprehensive protection of the subject airfield.

It is recommended that the County conduct an analysis of its compliance with ORS 836 and make any necessary text and mapping amendments in order to demonstrate full compliance, and comprehensive protection of the subject airfield.

TABLE 2-10
AIRPORT VICINITY LAND USE AND ZONING

Land Use	Zoning
Airport Site:	Hood River Airport Development (AD)
North: Rural Residential, Vacant, Orchard Land Oregon State Highway 281	 Hood River Rural Residential, Two Acre Minimum (RR-1*) Limited County Commercial and Industrial Zoning Hood River County Exclusive Farm Use (EFU)

~~[2] Telephone communication with a City of Hood River planning representative.~~

South: Airport Road, Rural Residential and Resource Related Dwe gs Orchards		EFU, RR-1
East: Orchard Road Orchard Land Resource Related Dw gs		EFU
West: Twin Peaks Restaura Rural Residential, Agr re, Orchards		EFU, RR-2 ½ , RR-1

* *It is noted that the Z Title does not coincide with the minimum lot size due to changes in standards since the time of the Zone de tion's conception and titling.*

AIRPORT SER\ E AREA

The airport service refers to the area surrounding an airport that is directly affected by the activities at that air Normally a 30 or 60-minute surface travel time is used to approximate the boundaries of a ice area. For Hood River, the service area extends primarily east-west along the Interstate orridor, but also extends along ighway 14 on the Washington side of the Columbia River south on Highways 281 and 35 ward Mount Hood. Although there are several public use a rts located within a 40 nautical m radius of Hood River, only a few are located within a 30- ute driving time. The nearest ai rts with comparable or better facilities and services are C bia Gorge Regional (The Dall which is located within a 30-minute drive time of Hood r, and Troutdale, which has a -minute/1 hour drive time from Hood River. There are se small communities located wi n the Hood River airport service area that have significant el distances to the next nearest lic use airport.

Ken Jernstedt Airfi erves a wide variety of general ition users within the community and throughout the local ion. The close proximity of H River and The Dalles creates natural competition betwee airports due to overlapping ser e areas. However, it appears that both airports play an im nt role in their respective com unities serving general aviation users, providing access to ransportation and supporting l economies. When multiple airports are located within rport's local service area, comp tion to attract aircraft and tenants can fluctuate based on ity and market related element The availability and price of hangar space, fuel and air t services tend to be key market factors affecting activity within an

airport's service area. Airfield facility capabilities such as runway length ~~or instrumentation~~ are primary factors in determining the typical user base for an airport. **Table 2-11** lists the public airports in the vicinity of Ken Jernstedt Airfield.

TABLE 2-11
PUBLIC USE AIRPORTS IN VICINITY
(WITHIN 40 NAUTICAL MILES)

Airport	Location	Runway Dimension (feet)	Surface	Lighted Runway ?	Fuel Available ?
Cascade Locks State	14 NM west	1,800 x 30	Asphalt	No	No
Columbia Gorge Regional – The Dalles	15 NM east-southeast	5,097 x 150 (primary rwy)	Asphalt	Yes	Yes
Goldendale Municipal	31 NM northeast	3,490 x 40	Asphalt	Yes	No
Wasco State	37 NM southeast	3,450 x 60	Asphalt	Yes	No
Hillcrest	36 NM northeast	2,730 x 100	Turf	No	No
Grove Field (Camas)	37 NM west	2,710 x 40	Asphalt	Yes	Yes
Sandy River	34 NM southwest	2,115 x 100	Turf	No	No
Country Squire	37 NM southwest	3,095 x 32	Asphalt	No	No
Portland-Troutdale	37 NM west-southwest	5,399 x 150	Asphalt	Yes	Yes

CHAPTER THREE
AVIATION ACTIVITY AND FORECASTS

INTRODUCTION

The purpose of this section is to update the forecasts of aviation activity for the 20-year planning period addressed in the Airport Layout Plan Update (2004-2024). The updated activity forecasts will provide the basis for estimating future facility needs at Ken Jernstedt Airfield. The scope of work for this project suggests use of the most recent Oregon Aviation System Plan (OASP)[8] forecasts (1994-2018), with revision as required, to reflect current conditions. However, airport master plan forecasts (1990-2010) are also available for Ken Jernstedt Airfield.[9] The available forecasts provide a range of projections for based aircraft and aircraft operations that can be compared with recent historic data to determine the current relevance of each projection. Once relevance is determined, a judgment can then be made regarding the need to update the projections for the current twenty-year planning period.

Recent Historic Activity

Recent historic activity data available for Ken Jernstedt Airfield includes estimates of existing conditions (base-year activity) contained in the 1990 Airport Master Plan and the 1997 Oregon Aviation System Plan; several years of activity counts generated through the RENS Aircraft Monitoring Program, conducted by the Oregon Department of Aviation (ODA); and FAA Terminal Area Forecast (TAF) historical data.

In the absence of air traffic control tower records, the RENS data generally provides the most reliable estimates of activity for uncontrolled airports. At Ken Jernstedt Airfield, activity counts have been conducted for six separate years since 1981, which provides an indication of activity over an extended period. Current estimates of based aircraft were provided by airport

[8] Oregon Continuous Aviation System Plan, Volume I Inventory and Forecasts (1997, AirTech).
[9] Hood River Airport Master Plan 1990-2010 (W&H Pacific)

management for this evaluation. There has not been measurable growth or construction at the airport since 2005 adoption of the Ken Jernstedt Airfield Airport Layout Plan Update 2004-2024.

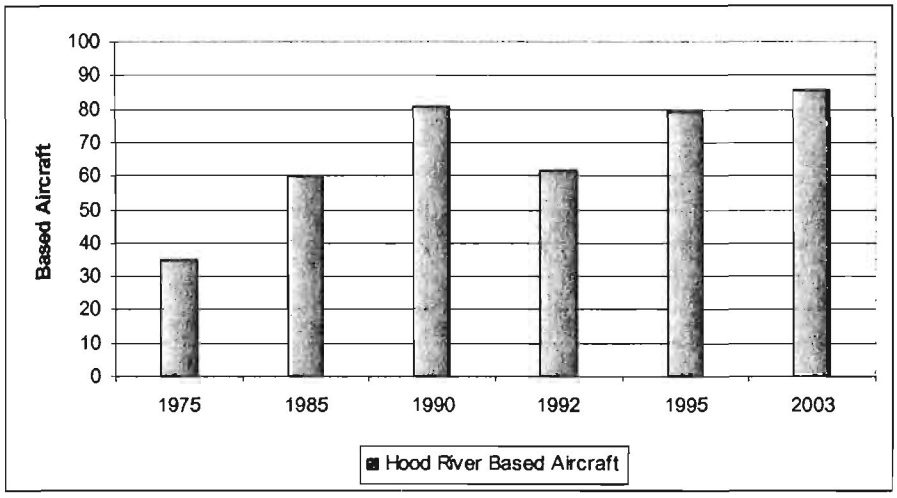
Based Aircraft

The 1990 Airport Master Plan estimated that Ken Jernstedt Airfield had 81 based aircraft in 1990. According to airport management estimates, there were 86 based aircraft at Ken Jernstedt Airfield in March 2003. Since 1990, the net increase in based aircraft at the airport has been slight (6.2%), with an average annual growth of 0.46 percent (1990 to 2003). The 1997 OASP estimated 79 based aircraft at the airport in 1994. It appears that the number of based aircraft at the airport declined slightly in the early 1990s, followed by subsequent increases that may have coincided with new hangar construction or other events on the airfield. Based aircraft totals at small airports are subject to rapid changes that often correspond to specific events on the airport or within the airport's local service area. The most common factors are often the availability and price of hangar space, fuel and aircraft services. Some fluctuation can be expected as market conditions change, although the airport's fundamental strengths (facilities, services and local economy) will be the primary factors affecting demand over the long-term.

According to available data, it appears that Ken Jernstedt Airfield experienced two significant periods of growth in based aircraft over the last twenty five years. A significant increase occurred between 1975 and 1986, where based aircraft increased from 35 to 58 (+23 aircraft; 65.7% increase). Another increase is noted between 1986 and 1990, where based aircraft increased from 58 to 81 (+23 aircraft; 39.7% increase). Increases of this magnitude are not uncommon at small airports, but are difficult to predict. For this reason, it is important that the airport plan include a facility development program that can quickly respond to changes market demand.

Recent historic based aircraft totals at Ken Jernstedt Airfield are depicted in **Figure 3-1**. In early 2003, the airport had one locally based turbine agricultural aircraft, one piston-engine helicopter and three gliders. All other based aircraft were single-engine piston. The breakdown of current based aircraft at Ken Jernstedt Airfield is summarized in **Table 3-1**.

FIGURE 3-1: HISTORICAL BASED AIRCRAFT (KEN JERNSTEDT AIRFIELD)



Source: FAA TAF (1985), Airport Master Plan (1975, 1990); Airport Management Estimates (2003)

TABLE 3-1
2003 BASED AIRCRAFT
(KEN JERNSTEDT AIRFIELD)

Aircraft Type	2003 (Estimate)
Single Engine Piston	81
Multi-Engine Piston	0
Turboprop	1
Business Jet	0
Helicopters	1
Gliders	3
Total	**86**

Source: Airport Management Estimate (3/03)

Aircraft Operations

The historic data contained in the FAA Terminal Area Forecast (TAF) indicates that annual operations at Ken Jernstedt Airfield have ranged from about 15,000 to 26,000 since 1976. The 1990 Airport Master Plan estimated existing aircraft operations at 15,300 (1990) based a review of the RENS counts conducted in 1987-88. The 1997 Oregon Aviation System Plan estimated aircraft operations at 13,700 in 1994.

RENS estimates of aircraft operations at Ken Jernstedt Airfield have been developed by ODA for six separate years since 1981, including a consecutive three-year period from 1996 to 1998 (see **Table 3-2**). **Figure 3-2** depicts the historic FAA TAF data and the RENS counts at Ken Jernstedt Airfield. In general, it appears that the TAF estimates have been consistently higher than RENS estimates for the airport, although an adjustment in the 1997 TAF estimates correlates very closely to the most recent (1998) RENS count. Although prone to some fluctuation, it appears that the RENS data provides the best indication of broad activity trends at Ken Jernstedt Airfield. A breakdown of the most recent (1998) activity count by aircraft type is provided in **Table 3-3**.

Over the seventeen-year period between the 1981 and 1998 RENS counts, aircraft operations at Ken Jernstedt Airfield increased by 21.3 percent, this equals 1.14 percent per year despite several upward and downward shifts. For the purposes of updating forecasts of aircraft activity, the 1998 RENS count data provides a reasonable "base year" which can be adjusted to reflect subsequent events.

TABLE 3-2
SUMMARY OF ACTIVITY COUNTS
(KEN JERNSTEDT AIRFIELD)

	1981	1987	1992	1996	1997	1998
Annual Operations	11,174	11,922	5,918	14,127	8,234	13,555
Net Increase/Decrease Over Prior Count	--	+6.7%	-50.4%	+138.7%	-41.7%	+64.6%

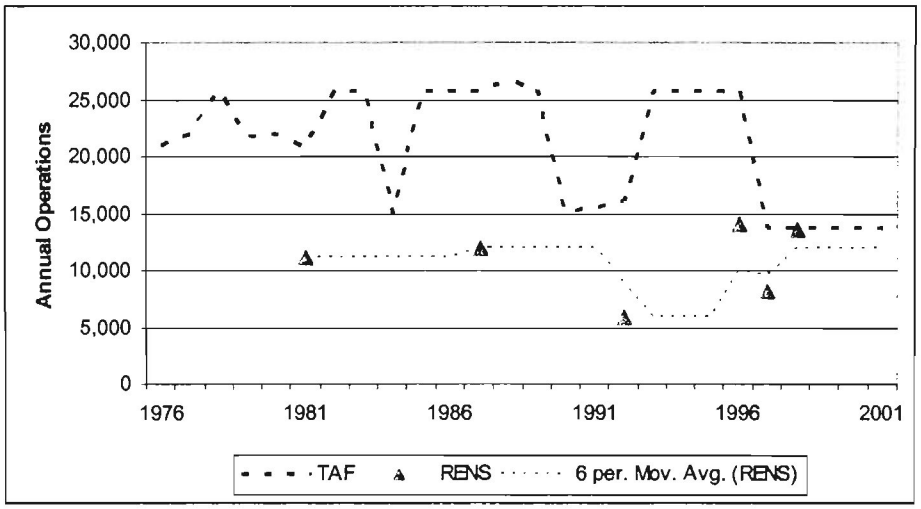
Source: Oregon Department of Aviation, RENS acoustical counts.

TABLE 3-3
1998 AIR TRAFFIC BREAKDOWN BY TYPE
(KEN JERNSTEDT AIRFIELD)

Operations by Type	Annual Estimate	Percent by Type
Single-Engine	11,802	87%
Multi-Engine	877	6.5%
Jet Engine	-	0%
Rotary Engine	517	3.8%
Other	360	2.7%
Total Aircraft Operations	**13,555**	**100%**

Source: Oregon Department of Aviation Aircraft Monitoring Program (data: 10/97-10/98)

FIGURE 3-2: FAA TAF DATA & RENS COUNTS (KEN JERNSTEDT AIRFIELD)



The decline documented in the early 1990s at Ken Jernstedt Airfield coincided with weak economic conditions and a seriously lagging general aviation industry. The rebound in activity was consistent with broad industry trends and a strengthening national economy during the balance of the 1990s. However, after seven consecutive years of growth within the U.S. general aviation industry, activity began to decline in early 2001 as the economy slowed. This negative trend was further hardened by the events of September 11th, which included temporary flight restrictions and other permanent measures that limited general aviation activities. Most general aviation airports experienced declines in air traffic in 2001 and relatively flat activity in 2002.

Recent hangar construction activity and the growing based aircraft fleet at Ken Jernstedt Airfield suggests that demand for facilities has remained relatively firm despite recent economic and industry downturns experienced in 2001 and 2002. As a result, aircraft operations for 2002 are estimated to be slightly higher than the most recent activity count (1998).

Recent historical data for Ken Jernstedt Airfield is summarized in **Table 3-4.** Ken Jernstedt Airfield has averaged approximately 165 operations per based aircraft since 1981.

TABLE 3-4
SUMMARY OF HISTORICAL AVIATION ACTIVITY
(KEN JERNSTEDT AIRFIELD)

Year	Aircraft Operations	Based Aircraft	Operations Per Based Aircraft	Data Source
1981	11,174	58	193	1,2
1987	11,922	63	189	1,2
1990	15,300	81	189	3
1992	5,918	62	96	1,2
1994	13,700	79	173	2,4
1996	14,127	80	179	1,2
1997	8,234	80	103	1,2
1998	13,555	79	172	1,2
2002	14,190	86	165	5,6

Data Sources/Notes:
1. ODA RENS Aircraft Activity Counter Program
2. FAA TAF Data (BASED AIRCRAFT)
3. 1990 Airport Master Plan - Base Year Estimates (1990)
4. Oregon Continuous Aviation System Plan. Volume 1: Inventory and Forecasts (1997) (Based Aircraft Estimate for 1994)
5. Airport Management Estimate (Based AC)
6. David Miller/Century West Estimate (Aircraft Operations)

Population

Table 3-5 summarizes recent historic population for the City of Hood River and Hood River County. The local area experienced strong growth in population between 1990 and 2000, which reflects an active economic climate. **Figure 3-3** depicts the historic relationship between local population trends and aircraft operations at Ken Jernstedt Airfield. The data indicate that while both population and aircraft operations have increased over an extended period, airport operations periodically fluctuate without corresponding shifts in population. These events suggest that while there may be a general correlation between population and activity at Ken Jernstedt Airfield, other airport- or industry-specific factors are likely to have a more direct effect on airport activity.

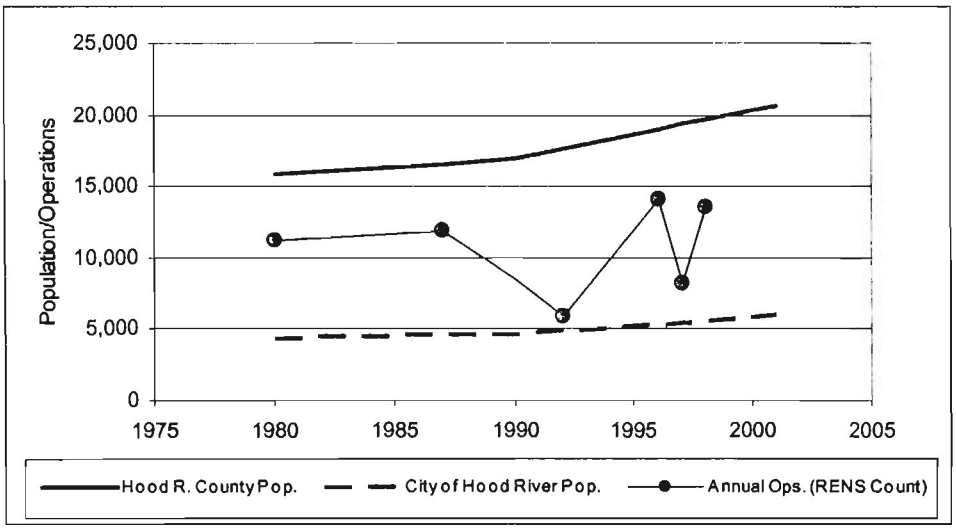
However, with local area population growth forecast to average about 1.03 percent annually through 2040, it appears that the existing local demographic base supporting Ken Jernstedt Airfield will continue to grow through the current planning period. To the extent that historic population growth has generally accompanied increased airport activity, this trend may be expected to continue during the current twenty-year planning period.

TABLE 3-5
HISTORICAL AREA POPULATION

	1980	1990	2000	2001
Hood River County	15,835	16,903	20,411	20,600
City of Hood River	4,329	4,632	5,831	6,020
Percentage of County Population	*27.3%*	*27.4%*	*28.6%*	*29.2%*

Source: 1980, 1990, 2000 U.S. Census; Center for Population Research and Census, Portland State University 2001 estimate.

FIGURE 3-3: POPULATION AND AIRPORT OPERATIONS (KEN JERNSTEDT AIRFIELD)



ASSESSMENT OF EXISTING FORECASTS

A review of existing aviation forecasts for Ken Jernstedt Airfield was conducted to identify information that may be useful in projecting future activity. The previous forecasts of based aircraft and aircraft operations are depicted in **Figure 3-4** and **Figure 3-5** and summarized in **Table 3-6**.

1990 Airport Master Plan Forecasts

The 1990 Airport Master Plan provides forecasts through the year 2010. Based aircraft were forecast to increase from 81 to 121 between 1990 and 2010, which represented an average annual increase of **2.03 percent**. The actual growth in based aircraft between 1990 and 2003 was approximately one-quarter of the forecast; the 2003 estimate of 86 based aircraft is 15 aircraft less than forecast of 101 based aircraft for 2000.

Due in part to the forecast increase in based aircraft, the master plan recommended property acquisition (18.1 acres) on the south side of the airport to accommodate projected facility needs, including 67 additional hangar spaces by 2010. Although several new hangars have been

constructed in recent years (approximately 20 spaces), the planned property acquisition to locate additional hangars has not occurred. Recent land limitations, including development of the Western Antique Aeroplane and Automobile Museum north of the airport, have affected hangar development and growth in based aircraft at the airport.

The master plan's operations forecasts have also overestimated activity by a considerable margin through the midpoint of 1990-2010 planning period. Aircraft operations at Ken Jernstedt Airfield were forecast to increase from 15,300 to 27,700 between 1990 and 2010, which represented an average annual increase of **3.01 percent**. None of the aircraft activity counts conducted at Ken Jernstedt Airfield since 1981 have exceeded the master plan's base year estimate. The most recent activity count (1998) was approximately 11 percent below 1990 base year operations estimate and 34 percent below the operations forecast for 2000.

The operations forecasts were based on two moderately aggressive assumptions: 1) strong growth in based aircraft; and 2) rising levels of aircraft utilization through the planning period. A review of historic activity reveals that neither of these assumptions proved to be accurate. As noted earlier, the airport has averaged approximately 165 operations per based aircraft since the early 1980s, well below the range of 189 to 229 used for the 1990-2010 forecasts. In addition, the number of based aircraft has increased well below the forecast rate. The combination of these two factors directly affects operations levels.

The 1990 Airport Master Plan forecasts are not consistent with recent historical activity at the airport. As a result, the forecasts do not provide the best indication of future activity in relation to current activity levels. However, the master plan forecasts provide an upper range projection that will be helpful in defining facility development reserves.

Oregon Aviation System Plan (OASP)

The most recent Oregon Aviation System Plan (OASP) forecasts for Ken Jernstedt Airfield were developed in 1997 (1994 base data) with projections made to 2014. The 2000 Oregon Aviation Plan[10] (OAP) extrapolated these forecasts to 2018, but did not include any changes in forecast assumptions.

From a 1994 base year estimate of 79 based aircraft, the OASP projected the number of based aircraft at Ken Jernstedt Airfield to increase to 99 by 2014; this projection was subsequently extended to 104 based aircraft for 2018. The OASP forecasts (1994-2018) represent an increase

[10] Oregon Aviation Plan, © 2000 Dye Management Group/Century West.

in based aircraft of 31.7 percent, which translates into an average annual growth rate of **1.15 percent**. Aircraft operations at Ken Jernstedt Airfield were projected to increase at a rate comparable to based aircraft. Operations were forecast to increase from 13,700 to 18,025 between 1994 and 2018, which translates into an average annual growth rate of **1.12 percent**.

Current activity levels at Ken Jernstedt Airfield fall directly between the OASP forecasts for 1999 and 2004, which indicates a reasonable degree of accuracy midway through the forecast period. The OASP forecasts are line with the slower growth that has occurred at the airport in recent years. Based on their reflection of current activity, the OASP forecasts provide a reasonable baseline projection of modest growth. However, since the airport has the potential of addressing existing development constraints through a combination of onsite development and property acquisition, a slightly more aggressive projection may be warranted for use as a "preferred forecast."

FAA Terminal Area Forecasts (TAF)

The Federal Aviation Administration (FAA) maintains forecasts for Ken Jernstedt Airfield in the Terminal Area Forecast (TAF). However, the current TAF for Ken Jernstedt Airfield provides static projections (no change) for both based aircraft and operations through 2020. The current TAF projections were adjusted in 1997 and are relatively close to current activity. The static projections do not reflect the community's long-term growth trend and the historic growth in general aviation activity that has occurred at the airport over the last 25 years. As a result, the current TAF projections are unsuitable for use in updating the forecasts.

TABLE 3-6
EXISTING AVIATION FORECASTS
(KEN JERNSTEDT AIRFIELD)

Source	2000	2002	2005	2007	2010	2014	2018
Based Aircraft							
1990 Airport Master Plan (2.03% AAR: 1990-2010)	101	–	111	–	121	–	–
1997 / 2000 OASP (1.15% AAR: 1994-2018)	82*	–	87*	–	–	99	104
FAA TAF (0% AAR: 2000-2020)	80	80	80	80	80	80	80
Aircraft Operations							
1990 Airport Master Plan (3.01% AAR: 1990-2010)	20,600	–	23,900	–	27,700	–	–
1997 / 2000 OASP (1.12% AAR: 1994-2018)	14,220*	–	15,090*	–	–	17,130*	18,025*
FAA TAF (0% AAR: 2000-2020)	13,700	13,700	13,700	13,700	13,700	13,700	13,700

* OASP Forecast Years: 1999, 2004, 2014, 2018; interpolated for intermediate years.

FIGURE 3-4: EXISTING BASED AIRCRAFT FORECASTS (KEN JERNSTEDT AIRFIELD)

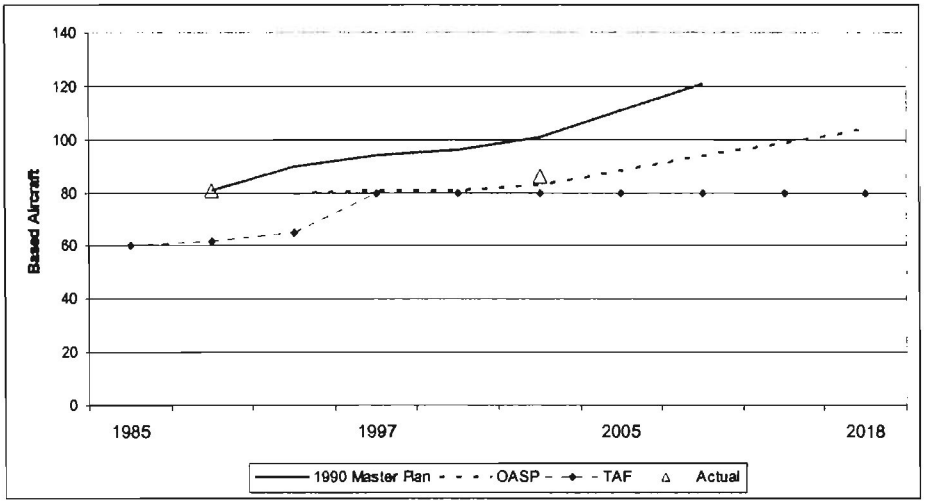
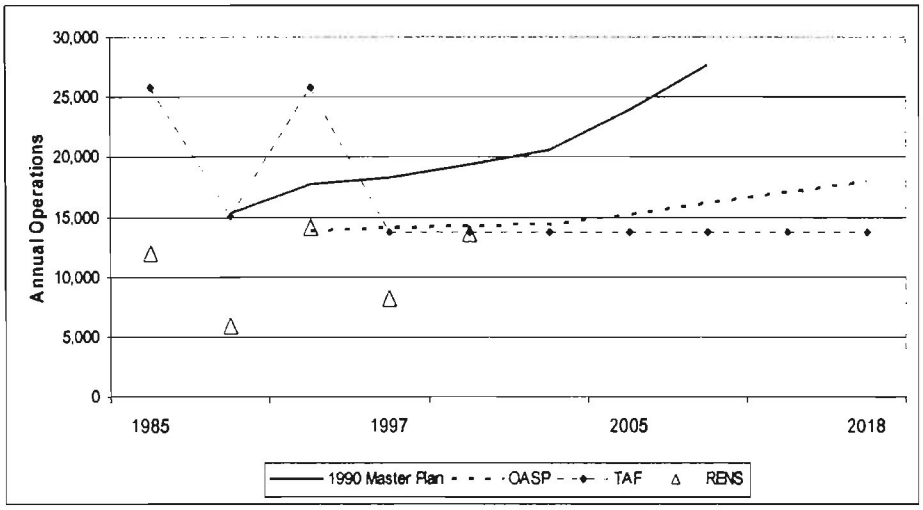


FIGURE 3-5: EXISTING AIRCRAFT OPERATIONS FORECASTS (KEN JERNSTEDT AIRFIELD)



Updated Forecasts

Based on a review of existing forecasts, it was determined that the 1990 Airport Master Plan and 1997/2000 OASP forecasts continue to provide projections of activity that are useful in evaluating long-term aviation activity. This updated report relies on projections contained in the Airport Layout Plan Update 2004-2024, and the December 2008 Airport Layout Plan Airspace Classification Review. These forecasts will provide the basis for developing updated high and baseline forecasts. To correspond to the current twenty-year planning period, the existing forecasts were extended to 2022 by extrapolating (without revision) the growth rates for the last 5- or 10-year intervals of the original forecasts. When required, the intermediate forecasts were interpolated (without revision) to correspond with the 5-, 10- 15- and 20-year forecast periods used for the current planning period. For purposes of comparison, the FAA TAF is presented as it is currently published without revision. The TAF projects no increase in based aircraft or aircraft operations through 2020.

Updated forecasts of aviation activity are summarized below and are presented in **Table 3-7** and depicted in **Figures 3-6 and 3-7**.

1990 Airport Master Plan (High)

The 1990 Airport Master Plan based aircraft and operations forecasts were extrapolated to 2022 to provide a high range projection. The forecast represents an average annual growth rate of 2.94 percent for based aircraft and 5.53 percent for aircraft operations (above current levels). Although the master plan forecasts have not provided a close match with actual activity in recent years, the more aggressive projection provides an indication of potential development reserve needs or the possibility of a sharp upturn in activity.

1997/2000 Oregon Aviation System Plan (Baseline)

The 1997/2000 OASP based aircraft and operations forecasts were extrapolated to 2022 to provide a baseline projection. The forecast represents an average annual growth rate of 1.26 percent for based aircraft and 1.27 percent for aircraft operations (above current levels). As noted earlier, the OASP forecasts have provided an excellent match with current/recent activity.

2003 ALP Updated Forecast (Preferred)

A new projection of based aircraft was developed that fell between the master plan and OASP forecasts. This forecast provides a mid-range projection that slightly exceeds recent historic growth while reflecting the airport's expansion and development potential.

An updated forecast of aircraft operations was developed based on recent-historic aircraft utilization levels and the updated based aircraft forecast. For this projection, aircraft utilization is projected to increase from 165 (current average) to 180 operations per based aircraft by the end of the twenty-year planning period. This range represents a balance between long-term historic and recent utilization levels and also reflects the airport's ability to continue developing a strong user base through the planning period. The forecast has an average annual growth rate of **1.99 percent** for based aircraft and **2.46 percent** for aircraft operations.

TABLE 3-7
UPDATED AVIATION FORECASTS
(KEN JERNSTEDT AIRFIELD)

	Base Year 2003	2007	2012	2017	2022
Based Aircraft					
Actual	86				
Forecast					
2003 ALP Forecasts (Preferred)		**93**	**103**	**114**	**125**
1990 Master Plan (Derived)[1]		115	125	137	149
OASP (Derived)[2]		90	97	103	109
FAA TAF (Unadjusted)[3]		80	80	80	80
Aircraft Operations					
Actual (estimated)[4]	14,190				
Forecast					
2003 ALP Forecasts (Preferred)		**15,345**	**17,510**	**19,950**	**22,500**
1990 Master Plan (Derived)[1]		25,350	29,380	34,060	39,470
OASP (Derived)[2]		15,680	16,700	17,800	18,970
FAA TAF (Unadjusted)[3]		13,700	13,700	13,700	13,700

1. Forecasts derived from 1990 Airport Master Plan through interpolation for intermediate years and extrapolation for outer years with no change in original forecast growth rates.
2. Forecasts derived from 1997/2000 Oregon Aviation System Plan (OASP) through interpolation for intermediate years and extrapolation for outer years with no change in original forecast growth rates.
3. Unadjusted except for extrapolation to 2022 using TAF (2015-2020) growth rate.
4. Estimate by David Miller/Century West Engineering

Fleet Mix and Design Aircraft

The 1990 Airport Master Plan identified the existing design aircraft as a light multi-engine piston aircraft, such as the Cessna 421, which is included in Approach Category B and Airplane Design Group I (B-I). An upgrade to Airplane Design Group II (ADG II) was expected in the 1995-2000 time period as the airport was expected to accommodate increasing levels of business aircraft, including multi-engine turboprops and small business jets.

Historically, the majority of based aircraft at Ken Jernstedt Airfield have been single-engine piston (fixed wing). While single-engine piston aircraft are expected to continue representing the majority based aircraft at the airport, an increase in the high performance aircraft activity could be reasonably anticipated based on the current trends in aircraft manufacturing. The production of turbine-powered aircraft for general aviation, business aviation and agricultural aviation is among the industry's strongest segments; many of these aircraft types can operate at small general aviation airports with relatively short runway lengths. The forecast fleet mix for Ken Jernstedt Airfield is summarized in **Table 3-8**.

The 1998 RENS count estimated multi-engine operations at 877. Based on an airport survey conducted in 1999, it appears that light piston and turboprop twin-engine aircraft (B-I) accounted for the majority of the 877 operations. No business jet operations were recorded. No specific counts of turbine operations were provided for single- or multi-engine aircraft, although one single-engine turbine aircraft is based at the airport. The turbine aircraft (Air Tractor 402B spray plane) is included in Approach Category A and Airplane Design Group II (A-II). The local operator estimates the aircraft averages about 300 operations per year. The airport also accommodates several locally based ADG II sailplanes (wingspans 49+ feet). Rotary aircraft accounted for about 3.8 percent of total airfield operations in the 1998 activity count.

Based on this information, the combined total of A/B-II operations at Ken Jernstedt Airfield is currently estimated to be slightly less than 500, most of which are generated by the aerial applicator and sailplanes. By FAA definition, the "design aircraft" must have a minimum of 500 itinerant annual operations. For Ken Jernstedt Airfield, runway length requirements would be based on the more demanding business aircraft included in B-II, rather than the agricultural or un-powered aircraft, which require very little runway length to operate. As a result, a future upgrade to airplane design group II (ADG II) standards may be based on total activity within the group, while justification for a runway extension would be based on the number of aircraft that are constrained or unable to operate on the existing runway.

An updated survey of activity was conducted in 1999 as part of a study to evaluate runway extension options for the airport.[11] The survey estimated current demand of 80 annual operations "by aircraft that are constrained/prevented by inadequate runway length." The study concluded that the current activity levels did not meet FAA criteria for runway extension. Although current activity counts are not available, it appears that the air traffic volume and composition at Ken Jernstedt Airfield has not changed significantly since the recent survey was conducted.

Based on these factors, it appears that Airport Reference Code (ARC) B-I design standards continue to be appropriate for Runway 7/25, although a future upgrade to ARC B-II standards may be justified early in the twenty- year planning period.

Forecast Summary

The updated forecast of aviation activity at Ken Jernstedt Airfield is summarized in **Table 3-8. Figures 3-8** and **3-9** depict the updated based aircraft and operations forecasts. The preferred forecast of based aircraft represents an average annual growth rate of **1.99 percent** for based aircraft through the planning period. Aircraft operations are forecast to increase at an average annual rate of **2.46 percent** during the planning period, which reflects a gradual increase in average aircraft utilization at the airport. The breakdown between local and itinerant operations is projected to be 30/70 percent.

[11] Hood River Airport Planning Study – Demand Analysis of Runway Options and Review of RPZ Standards (January 2000, W&H Pacific)

TABLE 3-8
PREFERRED FORECAST SUMMARY

	Existing 2003	2007	2012	2017	2022
Based Aircraft					
Single Engine	81	87	95	103	111
Multi Engine Piston	0	1	1	2	2
Turboprop (SE & ME)	1	1	1	2	3
Business Jet	0	0	0	1	1
Rotor	1	1	2	2	3
Glider	3	3	4	4	5
Total	86	93	103	114	125
Average Operations per Based Aircraft	*165*	*165*	*170*	*175*	*180*
Aircraft Operations					
Local (30%)	4,290	4,605	5,250	5,985	6,750
Itinerant (70%)	9,900	10,740	12,260	13,965	15,750
Total	14,190	15,345	17,510	19,950	22,500
Design Aircraft Operations (A/B-II Single; Twin; Jet; Glider)	400	460	525	600	675

FIGURE 3-6: UPDATED BASED AIRCRAFT FORECASTS (KEN JERNSTEDT AIRFIELD)

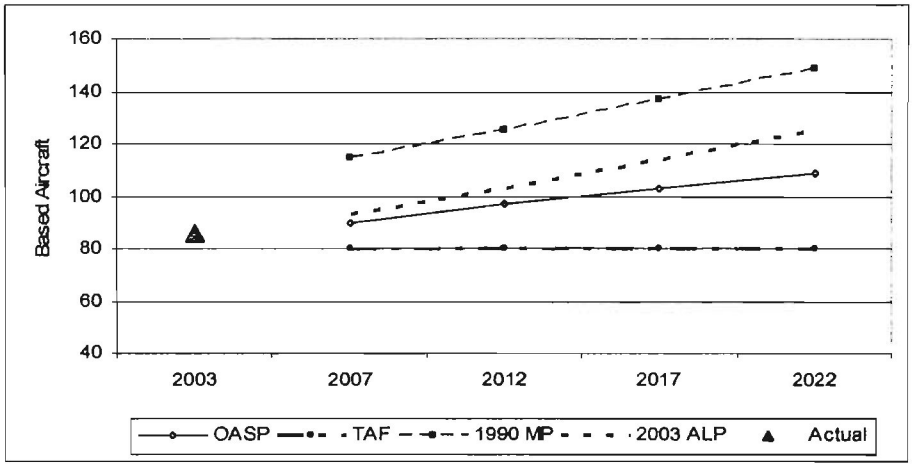
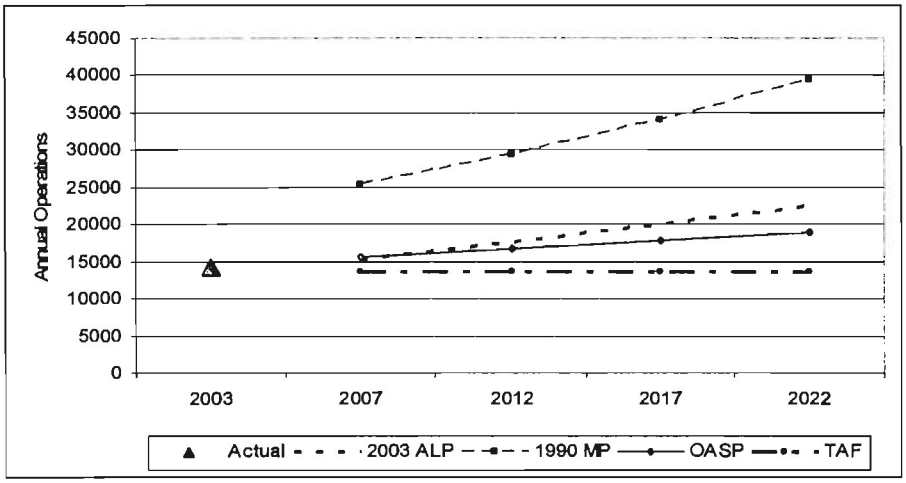


FIGURE 3-7: UPDATED OPERATIONS FORECAST (KEN JERNSTEDT AIRFIELD)


45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Annual Operations
2003
2007
2012
2017
2022
Actual
2003 ALP
1990 MP
OASP
TAF

CHAPTER FOUR
AIRPORT FACILITY REQUIREMENTS

INTRODUCTION

This chapter uses the results of the inventory and forecast conducted in **Chapters Two** and **Three**, as well as established planning criteria, to determine the airside and landside facility requirements through the current 20-year planning period. Airside facilities include runways, taxiways, navigational aids and lighting systems. Landside facilities include hangars, fixed base operator (FBO) facilities, aircraft parking apron, agricultural aircraft facilities, aircraft fueling, automobile parking, utilities and surface access.

The facility requirements evaluation is used to identify the adequacy or inadequacy of existing airport facilities and identify what new facilities may be needed during the planning period based on forecast demand. Options for providing these facilities will be evaluated in **Chapter Five** to determine the most cost effective and efficient means for implementation.

1990 Airport Master Plan Overview

The 1990 Airport Master Plan recommended a variety of facility improvements at Ken Jernstedt Airfield which are summarized in **Table 4-1**. The final Airport Layout Plan (ALP) completed as part of the 1990 Master Plan was approved in 1994. Previously recommended facility improvements that have not been implemented will be revalidated, modified or eliminated based on the updated facility needs assessment and FAA guidelines.

TABLE 4-1: SUMMARY OF 1990 AIRPORT MASTER PLAN RECOMMENDED PROJECTS AND CURRENT STATUS

Completed Yes/No	Projects
No	Land Purchase (Rwy 7 RPZ)
Unknown	Land Improvements ($16,000 listed for 1992 – unspecified improvements)
Unknown	Runway/Taxiway Improvements ($6,000 listed for 1992 – unspecified improvements)
Unknown	Building Renovation
No	Equipment (GPS)
No	Remove South Fuel Island
No	Relocate FBO
Partial *	Relocate Restaurant and Beauty Shop (* Beauty Shop relocated)
Yes	Reconstruct Access Road (north access road)
No	Reconstruct Parking (paved)
No	Public Restrooms (at north apron)
No	North Hangar Taxiway
No	Reconstruct Taxiway B
Yes *	T-Hangar Taxilanes (*Two south T-hangar taxilanes constructed)
No	Land Acquisition
No	Relocate Orchard Road
No	Runway & Taxiway Extension
No	PAPI Rwy 25
No	Segmented Circle & Wind T
Yes *	Remove Taxilane (*Eastern section of Txy. B removed when south T-hangar constructed)
Yes *	Fencing and Gates (*Fencing, gates located near south T-hangar and north apron)
No	T-Hangar Taxilanes
No	2- 12-unit T-Hangars
No	Land Acquisition/Relocation
No	Rotorcraft Pads
No	T-Hangar Taxilanes
No	1 12-unit T-Hangar
Yes	ASOS (AWOS Constructed in 2003)
No	Fencing and Gates
No	Reconstruct Auto Parking

In addition to the master plan-recommended projects completed, other completed projects include:

- Construction (private) of two conventional hangars at NW corner of airport (one 3-bay hangar and one medium conventional hangar) and one conventional hangar adjacent to south T-hangar.
- Removal of North Fuel Tank and site remediation; apron repair.

PROPERTY ACQUISITION

The 1994 Airport Layout Plan depicted recommended property acquisition totaling approximately 48.2 acres. The property acquisition included five separate parcels: the Runway 7 RPZ; an area located along the south side of the airport access road; an area located east of the north apron; an area located along the north (east) end of the runway; a narrow strip located along the south (east) side of the runway; and the future Runway 25 RPZ. None of the recommended property acquisition had been conducted by 2004, when this study was completed. The plan also recommended that the two businesses located in the Runway 7 RPZ be relocated (one has now been removed from the RPZ).

The south 12-unit T-hangar and access taxilanes were constructed in 1995 and configured to remain within existing airport property (parallel to the runway). However, this configuration deviated from the ALP defined plan to construct six 12-unit T-hangars perpendicular to the runway, which required property acquisition to accommodate the hangars.

Airspace

The airspace surfaces defined for Runway 7/25 in the 1990 Airport Master Plan are based on standards for utility runways (designed for aircraft weighing less than 12,500 pounds) with non-precision instrument approaches. The previous airspace planning recommendation was based on future development of a non-precision instrument approach to Runway 25. As stated in the December 2008 Airport Layout Plan Airspace Classification Review, feasibility of developing a non-precision instrument approach to either end of Runway 7/25 has not been established by FAA through detailed airspace and flight procedure analysis. The December 2008 report also notes the development of instrument procedures may have marginal effectiveness. Due to terrain

surrounding the airport, local pilots familiar with the airport have expressed reservations about the viability of developing a useable instrument approach at either runway end, the December 2008 report states. The airport's owner, Port of Hood River, has formally approached FAA regarding removing instrument approach language from the present Airport Master Plan, and that request has been supported by the December 2008 Airport Layout Plan Airspace Classification review. ~~This recommendation appears to remain valid based on current conditions.~~

The 1994 ALP identified the future critical aircraft as a Beechcraft King Air 200, twin-engine turboprop, which has a corresponding airport reference code (ARC) of B-II. The FAA currently indicates that runways designed to accommodate B-II aircraft should use "other-than-utility" airspace planning criteria under FAR Part 77. Since the activity forecasts presented in Chapter Three include a level of ADG II activity required to meet the FAA's design aircraft criteria, ADG II standards are appropriate for defining future or ultimate facility requirements at Ken Jernstedt Airfield. As a result, the airspace surfaces depicted in the previous ALP drawings will need to be revised to reflect the "other-than-utility" standards.

One prominent area of terrain penetration was previously depicted southwest of the runway, at the outer edge of the horizontal surface and within the conical surface near the end of the Runway 7 approach surface. Data for the penetrating terrain was not listed on the obstruction table for the airspace plan.

It appears that the area of terrain penetration previously identified will also exist in the expanded "other-than-utility" airspace surfaces. The utility approach surfaces (5,000 feet long; 20:1 slope) for both runways appeared to be free of terrain penetrations, although several obstructions (trees, vehicles traveling on roadways, etc.) were listed within the approaches on the 1994 Airspace Plan. ~~The approach surfaces for "other-than-utility" runways with non-precision instrument approaches are 10,000 feet long with a slope of 34:1. It is anticipated that the larger and flatter approach surfaces will also have several obstructions to be addressed. A complete review of the terrain surrounding the runway will be conducted as part of the airspace plan update.~~

Instrument Approach Capabilities

The airport currently has no instrument approach capabilities. None are anticipated in this update. The 1990 Airport Master Plan identified "GPS" as a future approach aid for Runway 25. The airport was identified as a candidate for global positioning system (GPS) approach in the

2000 Oregon Aviation Plan[12], and subsequently was identified as a "priority candidate" in the 2002 Oregon GPS Survey Study.[13] The GPS study noted that additional planning and airspace analyses would be required to address potential development issues. ~~The ALP update project will address issues related to the airport and airspace planning, although additional technical analyses will be required the FAA's Seattle Flight Procedures Office (FPO) to evaluate technical feasibility issues associated with specific design features of a potential instrument approach. The recent addition of an automated weather observation system (AWOS) on site will allow the airport to accommodate FAR Part 135 operations (air taxi, charter, medevac, etc.) using a future published instrument approach, when developed.~~ The recent addition of an automated weather observation system (AWOS) ~~also~~ provides useful weather data for local and itinerant operations by VFR pilots, both at the airport and enroute, through the Columbia River Gorge.

Airport Design Standards

The selection of the appropriate design standards for airfield facilities is based primarily upon the characteristics of the aircraft that are expected to use the airport. The most critical characteristics are the approach speed and wingspan of the design aircraft. The design aircraft is defined as the most demanding aircraft type operating at the airport with a minimum of 500 annual itinerant operations (takeoffs and landings). Planning for future aircraft use is important because design standards are used to determine separation distances between facilities that could be very costly to relocate at a later date.

Federal Aviation Administration (FAA) **Advisory Circular (AC) 150/5300-13, Airport Design,** serves as the primary reference in planning airfield facilities. **FAR Part 77, Objects Affecting Navigable Airspace,** defines imaginary surfaces, which are established to protect the airspace immediately surrounding a runway. The airspace and areas surrounding a runway should be free of obstructions (i.e., structures, parked aircraft, trees, etc.) to the greatest extent possible.

FAA **Advisory Circular 150/5300-13** groups aircraft into five categories based upon their approach speed. Categories A and B include small propeller aircraft, many small or medium business jet aircraft, and some larger aircraft with approach speeds of less than 121 knots. Categories C, D, and E consist of the remaining business jets as well as larger jet and propeller aircraft generally associated with commercial and military use; these aircraft have approach

[12] Oregon Aviation Plan © Oregon Department of Transportation (March 2001)
[13] Oregon GPS Survey Study (Century West Engineering, 2002)

speeds of 121 knots or more. The advisory circular also establishes six aircraft design groups, based on the physical size (wingspan) of the aircraft. The categories range from Airplane Design Group (ADG) I, for aircraft with wingspans of less than 49 feet, to ADG VI for the largest commercial and military aircraft. ADG I is further divided into two subcategories: runways serving "small airplanes exclusively" and runways serving aircraft weighing more than 12,500 pounds. The Federal Aviation Administration classifies aircraft with a maximum gross takeoff weight of less than 12,500 pounds as "small aircraft". A summary of typical aircraft and their respective design categories is presented in **Table 4-2.**

The 1994 Airport Layout Plan (approved in 1994) listed an airport reference code of B-I, based on a typical twin-engine piston aircraft; the future airport reference code was listed as B-II, based on a typical twin-engine turboprop aircraft. Most aircraft currently operating at Ken Jernstedt Airfield are in Airplane Design Group I and II and Approach Categories A or B. The airport has historically accommodated general aviation and business aviation fixed-wing aircraft and rotor aircraft. The airport currently accommodates one locally based turbine-powered agricultural aircraft and several sailplanes that are included in ADG II.

TABLE 4-2: TYPICAL AIRCRAFT & DESIGN CATEGORIES

Aircraft	Design Group	Approach Category	Maximum Gross Takeoff Weight (lbs)
Grumman American Tiger	A	I	2,400
Cessna 182	A	I	3,110
Lancair Columbia 300	A	I	3,400
Cirrus Design SR22	A	I	3,400
Cessna 206	A	I	3,600
Beechcraft Bonanza A36	A	I	3,650
Piper Seneca V (PA-34)	A	I	4,750
Socata/Aerospatiale TBM 700	A	I	6,579
Ayres 400 Turbo Thrush	A	I	9,300
Beechcraft Baron 58	B	I	5,500
Cessna 340	B	I	5,990
Piper Aerostar 602P	B	I	6,000
Cessna Citation CJ1	B	I	10,600
Beech King Air B100	B	I	11,800
Cessna Citation I	B	I	11,850
Piper Malibu (PA-46)	A	II	4,340
Cessna Caravan 1	A	II	8,000
Pilatus PC-12	A	II	9,920
Air Tractor 502B	A	II	9,700
Beech King Air B200	B	II	12,500
Cessna Citation CJ2	B	II	12,300
Cessna Citation II	B	II	13,300
Beech King Air 350	B	II	15,000
Cessna Citation Bravo	B	II	15,000
Cessna Citation Excel	B	II	20,000
Dassault Falcon 20	B	II	28,660
Bombardier Learjet 31A	C	I	17,000
Hawker (HS125-700A)	C	I	25,000
Gulfstream 100	C	II	24,650
Beechcraft Hawker 800XP	C	II	28,000
Cessna Citation Sovereign	C	II	30,250
Gulfstream 200	C	II	34,450
Cessna Citation X	C	II	36,100
Bombardier Challenger 300	C	II	37,500
Gulfstream IV	D	II	71,780

Source: AC 150/5300-13, change 7; aircraft manufacturer data.

Based on the existing airfield configuration, past master plan recommendations and current airport activity, the use of design standards based on **Aircraft Approach Category B and Airplane Design Group I is currently recommended for Runway 7/25 (*Airport Reference Code - ARC B-I*).** Based on these factors combined with forecast activity, **Aircraft Approach Category B and Airplane Design Group II is recommended as the future design standard for Runway 7/25 (*Airport Reference Code - ARC B-II*).** Airfield design standards for ADG I and ADG II are summarized in **Table 4-3**. ADG I (small aircraft exclusively) standards are also included for comparison.

Based on FAA planning guidelines, the use of "other-than-utility" airspace surfaces, as defined in FAR Part 77, is appropriate for Runway 7/25.

A summary of Ken Jernstedt Airfield's current conformance with recommended design standards is presented in **Table 4-4**. As indicated in the table, Runway 7/25 meets most ADG I (small) design standards, but does not meet all recommended ADG I standards for Approach Category A and B aircraft. With the exception of runway width and potential safety area dimensions (west end only), the existing runway-taxiway system does not currently meet most ADG II standards. The most significant items include existing separations for parallel taxiways, aircraft parking, and aircraft fueling areas that are too close to the runway to meet ADG II standards.

TABLE 4-3: AIRPORT DESIGN STANDARDS SUMMARY (DIMENSIONS IN FEET)

Standard	Runway 7/25 (Existing Conditions)	ADG I[1] (small aircraft exclusively)	ADG I[2] A&B Aircraft	ADG II[3] A&B Aircraft
Runway Length	3,040	3,150/3,760[4]	3,150/3,760[4]	5,060/6,540[5]
Runway Width	75	60	60	75
Runway Shoulder Width	10	10	10	10
Runway Safety Area Width	120	120	120	150
Runway Safety Area Length (Beyond Rwy End)	240	240	240	300
Obstacle-Free Zone	250	250	250	400
Object Free Area Width	250	250	400	500
Object Free Area Length (Beyond Rwy End)	240	240	240	300
Primary Surface Width	250	250	500	500
Primary Surface Length (Beyond Rwy End)	200	200	200	200
Runway Protection Zone Length	1,000	1,000	1,000	1,000
Runway Protection Zone Inner Width	250	250	500	500
Runway Protection Zone Outer Width	450	450	700	700
Runway Centerline to:				
Parallel Taxiway Centerline	Varies 125-240'	150	225	240
Aircraft Parking Area	225	125	200	250
Building Restriction Line	230/270 (S/N)	251[6]	376[6]	376[6]
Taxiway Width	Varies (25-30')	25	25	35
Taxiway Shoulder Width	10	10	10	10
Taxiway Safety Area Width	49	49	49	79
Taxiway Object Free Area Width	89	89	89	131
Taxiway Centerline to Fixed/Movable Object	44.5	44.5	44.5	65.5

1. Utility (visual) runways (Per FAR Part 77); all other dimensions reflect visual runways and runways with not lower than 3/4-statute mile approach visibility minimums (per AC 150/5300-13, Change 7). RPZ dimensions bases on visual and not lower than 1-mile approach visibility minimums.
2. Utility (nonprecision instrument) runways (Per FAR Part 77); all other dimensions reflect visual runways and runways with not lower than 3/4-statute mile approach visibility minimums (per AC 150/5300-13, Change 7). RPZ dimensions bases on visual and not lower than 1-mile approach visibility minimums.
3. Other than Utility (nonprecision instrument) runways (Per FAR Part 77); all other dimensions reflect visual runways and runways with not lower than 3/4-statute mile approach visibility minimums (per AC 150/5300-13, Change 7). RPZ dimensions bases on visual and not lower than 1-mile approach visibility minimums.
4. Runway length required to accommodate 95 and 100 percent of General Aviation Fleet 12,500 pounds or less. 85 degrees F, 10-foot change in runway centerline elevation.
5. Runway length required to accommodate 75 percent large airplane fleet (60,000 pounds or less) at 60 and 90 percent useful load. 85 degrees F, 10-foot change in runway centerline elevation.
6. Distance to protect standard parallel taxiway object free area and accommodate an 18-foot structure (at the BRL) without penetrating the 7:1 Transitional Surface.

TABLE 4-4: RUNWAY 7/25
CONFORMANCE WITH FAA DESIGN STANDARDS

Item	*Airplane Design Group I (Small Aircraft Exclusively)*	*Airplane Design Group I A & B Aircraft*	*Airplane Design Group II A & B Aircraft*
Runway Safety Area	Yes	Yes	Yes
Runway Object Free Area	Yes	No[0]	No[1]
Runway Obstacle Free Zone	Yes	No[2]	No[2]
Taxiway Safety Area	Yes	Yes[3]	No[4]
Taxiway Object Free Area	Yes	Yes[3]	No[4]
Building Restriction Line - North[5]	Yes	No	No
Building Restriction Line - South[5]	No	No	No
Aircraft Parking Line –North	Yes	No[6]	No[6]
Aircraft Parking Line – South	Yes	No[6]	No[5]
Runway Protection Zones	No[7]	No[7]	No[7]
Runway-Parallel Taxiway Separation -North	Yes	No	No
Runway-Parallel Taxiway Separation - South	Yes	No	No
Runway Width[8]	Yes	Yes	Yes
Runway Length	No[9]	No[10]	Yes[11]
Taxiway Width – North Parallel	Yes	Yes	No[12]
Taxiway Width – South Parallel	Yes	Yes	No[12]

0. Aircraft fuel area (south apron) located within ADG I OFA.
1. Aircraft parking positions (south apron) located within ADG II OFA.
2. North and South Parallel Taxiways within OFZ for runways serving large airplanes.
3. Taxiway OFA/SA clearances meet standards–runway-taxiway separations do not meet standards.
4. Taxiways require relocation to meet ADG II standard runway separation; relocation of some aircraft tiedowns also required.
5. BRL depicted on 1994 ALP is 230 feet (south side) and 270 feet (north side) from runway centerline.
6. Aircraft parking areas penetrate nonprecision instrument airspace (primary or transitional surfaces) and may conflict with FAA-recommended parallel taxiway separations.
7. Tucker Road and Orchard Road cross the Runway 7 and 25 protection zones; structures within RPZ.
8. Standard runway widths: 60' (ADG I).and 75' (ADG II).
9. Per FAA Runway Length Model: Existing runway length less than FAA-recommended length required to accommodate 95% of small aircraft fleet.
10. Per FAA Runway Length Model: Existing runway length less than FAA-recommended length required to accommodate 95/100% of small aircraft fleet.
11. Per FAA Runway Length Model: Existing runway length less than FAA-recommended length required to accommodate 75% of large aircraft weighing less than 60,000# at 60% useful load.
12. ADGII taxiway width standard is 35 feet.

Airport Design Standards Note:

The airport planning criteria recommended for Runway 7/25 at Ken Jernstedt Airfield are based on the following assumptions:

Visual runways and runways with not lower than ¾ statute mile visibility minimums. Runway protection zones (RPZ) are based on a visibility standard of "visual and not lower than 1-mile" for runways expected to serve Aircraft Approach Categories A and B. All references to the "standards" are based on these approach visibility assumptions, unless otherwise noted. (Per FAA Advisory Circular 150/5300-13, change 7). Airport Design Standards are based on Airport Reference Code (ARC) B-I (existing) and B-II (future). Airport Design Standards are based on Airport Reference Code (ARC) B-I (existing) and B-II (future). ~~The ultimate FAR Part 77 airspace planning criteria is based on "other than utility" runways with non-precision instrument approaches.~~

Runway Safety Area (RSA)

The FAA defines runway safety area (RSA) as "A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway." Runway safety areas are most commonly used by aircraft that inadvertently leave (or miss) the runway environment during landing or takeoff.

By FAA design standard, the RSA *"shall be:*

(1) cleared and graded and have no potentially hazardous ruts, humps, depressions, or other surface variations;

(2) drained by grading or storm sewers to prevent water accumulation;

(3) capable, under dry conditions, of supporting snow removal equipment, aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and

(4) free of objects, except for objects that need to be located in the runway safety area because of their function. Objects higher than 3 inches above grade should be constructed on low impact resistant supports (frangible mounted structures) of the lowest practical height with the frangible

point no higher than 3 inches. Other objects such as manholes, should be constructed at grade. In no case should their height exceed 3 inches."

The recommended transverse grade for the lateral RSA ranges between 1½ and 5 percent from runway shoulder edges. The recommended longitudinal grade for the first 200 feet of extended RSA beyond the runway end is 0 to 3 percent. The remainder of the RSA must remain below the runway approach surface slope. The maximum negative grade is 5 percent. Limits on longitudinal grade changes are plus or minus 2 percent per 100 feet within the RSA. The airport sponsor should regularly clear the RSA of brush or other debris and periodically grade and compact the RSA to maintain FAA standards.

The RSA along the sides and beyond the ends of Runway 7/25 appears to be cleared, graded and free of physical obstructions within the ADG I dimensions. Some areas of wetlands may exist within the RSA beyond the end of Runway 7, although a formal evaluation may be required to define the boundaries. The runway edge lights and threshold lights located within the RSA are mounted on frangible supports (breakable coupling and disconnect plug). Any future lighting located within the RSA will also need to meet the FAA frangibility standard.

A future upgrade to ADG II standards will require expansion of the RSA to meet the appropriate dimensional standards (see Table 4-3).

Runway Object Free Area (OFA)

Runway object free areas (OFA) are two-dimensional surfaces intended to be clear of ground objects that protrude above the runway safety area edge elevation. Obstructions within the OFA may interfere with aircraft flight in the immediate vicinity of the runway. The FAA defines the OFA clearing standard:

"The OFA clearing standard requires clearing the OFA of above ground objects protruding above the runway safety area edge elevation. Except where precluded by other clearing standards, it is acceptable to place objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes and to taxi and hold aircraft in the OFA. Objects non-essential for air navigation or aircraft ground maneuvering purposes are not to be placed in the OFA. This includes parked airplanes and agricultural operations."

The north side of the aircraft fueling area is located approximately 190 feet from runway centerline and 25 feet from the south parallel taxiway centerline, within the ADG I OFA. The

location of the fuel storage facilities will need to be evaluated in conjunction with the parallel taxiway to meet the full ADG I dimensional standards currently recommended for the airport. A future upgrade to ADG II standards will require expansion of the OFA to meet the appropriate dimensional standards (see Table 4-3). The airport sponsor should periodically inspect the OFA and remove any objects that protrude into the OFA.

Obstacle Free Zone (OFZ)

The OFZ is a plane of clear airspace extending upward to a height of 150 feet above runway elevation, which coincides with the FAR Part 77 horizontal surface elevation. The FAA defines the following clearing standard for the OFZ:

"The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible visual NAVAIDs that need to located in the OFZ because of their function."

The OFZ may include the Runway OFZ, the Inner-approach OFZ (for runways with approach lighting systems), and the Inner-transitional OFZ (for runways with lower than ¾-statute mile approach visibility minimums. For Ken Jernstedt Airfield, only the Runway OFZ is required based on runway configuration ~~and planned instrument approach capabilities~~. The FAA defines the Runway OFZ as:

"The runway OFZ is a defined volume of airspace centered above the runway centerline. The runway OFZ is the airspace above a surface whose elevation at any point is the same as the elevation of the nearest point on the runway centerline. The runway OFZ extends 200 feet beyond each end of the runway."

The standard OFZ for runways serving small aircraft is 250 feet wide. This dimension corresponds with the visual approaches for the existing runway ~~and would accommodate non-precision instrument approaches (not lower than ¾ mile approach visibility minimums)~~. .

The OFZ for Runway 7/25 appears to be free of physical obstructions and meets the small aircraft dimensional standards. The future upgrade to ADG II and the corresponding change to "other-than-utility" runway designation would require a 400-foot wide OFZ based on the runway's ability to accommodate aircraft weighing 12,500 pounds and above.

The exit taxiways connecting to the runway have aircraft hold lines located 125 feet from runway centerline, which coincide with the outer edge of the existing OFZ boundary. The holding areas

have adequate area to allow aircraft to remain clear of the OFZ. A future OFZ width of 400 feet will require the relocation of aircraft hold lines to 200 feet from runway centerline, in addition to relocation of aircraft fueling areas outside the OFZ.

Taxiway Safety Area

The taxiways at Ken Jernstedt Airfield include a full-length north parallel taxiway, a partial-length south parallel taxiway, and several access taxiways. The taxiways vary in width (25, 30 and 35 feet) and appear to meet the dimensional standard for ADG I taxiway safety area. The taxiway safety areas should be regularly cleared of brush or other debris and periodically graded and compacted to maintain FAA standards. A future upgrade to ADG II standards will require expansion of the taxiway safety area to meet the dimensional standards (see Table 4-3).

Taxiway Object Free Area

Most taxiways on the airport meet the dimensional standard for ADG I taxiway object free area. Two exceptions include the south parallel taxiway and the north access taxiway that extends beyond airport property. The north side of the aircraft fueling area is located within 25 feet of the south parallel taxiway, although the fuel tanks and other above ground equipment are located outside the ADG I taxiway OFA. Aircraft parked on the north side of the fuel tanks could limit wingtip clearances for aircraft taxiing on the south parallel taxiway. The north taxiway that extends beyond airport property does not appear to have adequate clearance from the adjacent T-hangars to meet the OFA standard.

Conformance with FAA-recommended taxiway object free area standards will be reviewed in conjunction with an evaluation of runway-parallel taxiway separations. The ADG I and ADG II taxiway OFA widths are 89 and 131 feet respectively. All future buildings and parked aircraft located along existing/planned taxiways should have a minimum setback (building restriction line and/or aircraft parking line) of at least 65.5 feet, which corresponds to the outer edge of the ADG II taxiway OFA, which preserves a long-term upgrade to ADG II design standards.

Building Restriction Line (BRL)

The 1994 Airport Layout Plan (ALP) depicts 230-foot (south side) and 270-foot (north side) building restriction lines (BRL) for Runway 7/25. The south BRL (230 feet) will accommodate a 15-foot high building without penetrating the utility/visual runway transitional surface and is clear of the ADG I (small) taxiway object free area. ~~However, the south BRL is not adequate to protect a standard ADG I or ADG II parallel taxiway object free area or the airspace required for a future instrument approach.~~ The north BRL will accommodate a 20-foot high structure without penetrating the existing utility/visual runway transitional surface and also is compatible with either an ADG I (small) or ADG I taxiway separation. ~~However, the north BRL is not adequate to protect the airspace required for a future non-precision instrument approach or a future upgrade to ADG II parallel taxiway separation standards.~~

The nearest airport building to Runway 7/25 is located approximately 320 feet from runway centerline (large conventional hangar near NW corner of airport), although its location does not affect the ability to meet recommended parallel taxiway separations. The minimum setback required to accommodate an ~~18~~15-foot high structure (typical low profile – T-hangar) for a runway with a ~~planned non-precision instrument~~utility/visual approach would be ~~376~~ 230 feet from runway centerline. Structures with higher roof elevations will require additional setback distances to remain clear of the runway transitional surface. A ~~376~~230-foot BRL is also compatible with both ADG I or ADG II parallel taxiways and their clear areas. ~~It is also noted that several structures (off airport) are located along the southeast airport property line, within 200 to 300 feet of runway centerline. Numerous obstructions to future FAR Part 77 Airspace Surface (non-precision instrument) exist in this area.~~

Runway Protection Zones (RPZ)

The FAA provides the following definition for runway protection zones (RPZ):

"The RPZ's function is to enhance the protection of people and property on the ground. This is achieved through airport owner control over RPZs. Such control includes clearing RPZ areas (and maintaining them clear) of incompatible objects and activities. Control is preferably exercised through the acquisition of property interest in the RPZ. The RPZ is trapezoidal in shape and centered about the extended runway centerline. The RPZ begins 200 feet beyond the end of the area useable for takeoff or landing."

The RPZ dimensions recommended for Runways 7 and 25 are based on Aircraft Approach Categories A & B with approach visibility minimums "visual and not lower than 1-mile."

RPZs with buildings, roadways, or other items do not fully comply with FAA standards. The 1994 ALP depicted existing RPZs based on runways designed to serve small aircraft exclusively, and future RPZ dimensions based on aircraft approach categories A and B. Both RPZs types are consistent with approach visibility minimums "visual and not lower than 1-mile."

A review of recent aerial photography for Ken Jernstedt Airfield identified public roadways within both visual RPZs for Runway 7/25. In addition, the "small aircraft" RPZ for Runway 7 has a business (drive-in restaurant) and a portion of a residence located within its boundaries. Several additional structures are located within the boundaries future RPZs depicted on the 1994 ALP. An evaluation of runway configuration options and RPZ clearance will be completed as part of this planning update.

It is recognized that realigning major surface roads routes located within the RPZs may not be highly feasible. However, where possible, the County should discourage development within the RPZs (particularly structures) that is inconsistent with FAA standards.

Aircraft Parking Line (APL)

The existing aircraft parking areas at the airport are located adjacent to the parallel taxiways, approximately 225 to 275 feet from the runway centerline. The 1994 Airport Layout Plan does not depict aircraft parking lines (APL), although the parking areas do not conflict with the adjacent parallel taxiways and the parked aircraft do not penetrate the existing utility visual airspace surfaces.

However, to meet either the standard ADG I or ADG II runway-parallel taxiway separation distances, the north and south parallel taxiways will need to be relocated. The 1994 ALP (airspace plan) reflects the then-planned instrument approach for Runway 7/25 and increases the primary surface from 250 feet to 500 feet wide. As a result, the outer row of tiedowns on the south apron would be located within a 500~~480~~-foot wide primary surface and most aircraft parked on the front half of the south tiedown apron would penetrate the runway transitional surface. ~~The outer row of tiedowns on the north apron would also penetrate the nonprecision instrument transitional surface. The 1994 ALP did not address these conflicts or provide any rationale to deviate from FAA airspace planning criteria.~~

Tail heights of 10 feet or less are typical of most light aircraft, although business aircraft often have tail heights ranging from 10 to 25 feet. An APL located 320 feet from runway centerline will accommodate an aircraft with a 10-foot tail height~~ without penetrating the nonprecision instrument primary/transitional surfaces;~~ this distance will also accommodate standard ADG I and ADG II parallel taxiway separations.

Several existing aircraft parking positions located nearest the runway will not comply with the recommended APL separation. These tiedowns would need to be eliminated or relocated outside the APL.

Runway – Parallel Taxiway Separation

Runway 7/25 is served by dual parallel taxiways. The north parallel taxiway is a full-length taxiway with a 200-foot runway-taxiway centerline separation. The south parallel taxiway is a partial-length taxiway with a 150-foot runway separation. The eastern 650-foot section of the south parallel taxiway was removed when the south T-hangar and hangar taxilanes were constructed in 1995. The south hangar and taxilane configurations were altered significantly from the layout depicted on the 1994 ALP. As a result, the taxilane located on the north side of the T-hangar is located 240 feet from runway centerline and meets ADG II standards (runway separation and taxiway width).

The existing separation of both parallel taxiways meets the ADG I (small aircraft exclusively) design standard, but does not meet either the full ADG I standard (225 feet) or the ADG II standard (240 feet). Future relocation of the parallel taxiways should at a minimum, reflect the ADG I standard for runway separation, but increasing the separations to the ADG II standard would be required as part of a future upgrade from ADG I to ADG II standards.

FAR PART 77 SURFACES

Airspace planning for U.S. airports is defined by Federal Air Regulations (FAR) Part 77 – Objects Affecting Navigable Airspace. FAR Part 77 defines imaginary surfaces (airspace) to be protected surrounding airports.

The 1994 Airport Airspace Plan[14] depicted airspace surfaces that were consistent with nonprecision instrument approach capabilities and utility runways based on an ultimate runway length of 4,000 feet. One area of terrain penetration was identified within the airspace surfaces, southwest of the runway. ~~A substantially larger amount of terrain penetration is anticipated with the expansion of airspace surfaces based on "other-than-utility" standards, normally associated with ADG II runways.~~

~~For Runway 7-25, the use of "other-than-utility" standards based on future nonprecision instrument approach capabilities (per FAR Part 77) is appropriate for defining long-term airspace planning for Ken Jernstedt Airfield. However, in the event that an instrument approach is developed before an upgrade in airfield design standards is required, the existing "utility" runway designation with non-precision instrument airspace surfaces would be adequate. The runway length depicted on the updated airspace plan should be consistent with the ultimate runway length depicted on the Airport Layout Plan. For airspace planning purposes, the FAA recommends use of "other-than-utility" standards for runways with ADG II design aircraft.~~

[14] Hood River Airport Master Plan 1990-2010. Airport Airspace Plan (Sheet No. 4), W&H Pacific (approved 1994)

Table 4-5 summarizes FAR Part 77 standards with the corresponding runway type and approach capability.

TABLE 4-5: FAR PART 77 AIRSPACE SURFACES
KEN JERNSTEDT AIRFIELD

Item	Utility (Visual)[1]	Utility (Non-precision)[1]	Other-than-utility (Visual)[1]	Other-than-utility (Non-precision)[1]
Width of Primary Surface	250 feet	500 feet	500 feet	500 feet
Radius of Horizontal Surface	5,000 feet	5,000 feet	5,000 feet	10,000 feet
Approach Surface Width at End	1,250 feet	2,000 feet	1,500 feet	3,500 feet
Approach Surface Length	5,000 feet	5,000 feet	5,000 feet	10,000 feet
Approach Slope	20:1	20:1	20:1	34:1

1. Utility runways are designed for aircraft weighing 12,500 pounds or less; other-than-utility runways are designed for aircraft weighing more than 12,500 pounds.

Approach Surfaces

Runway approach surfaces extend outward and upward from each end of the primary surface, along the extended runway centerline. As noted earlier, the dimensions and slope of approach surfaces are determined by the type of aircraft intended to use the runway and most demanding approach planned for the runway.

The 1994 Airspace Plan depicted future utility runway approach surfaces with slopes of 20:1. The approach surface for Runway 25 reflects a planned nonprecision instrument approach; Runway 7 has a visual approach surface dimensions. ~~As noted above, the~~ The FAA recommends that ADG II runways (as recommended on the 1994 ALP) be planned using "other-than-utility" airspace surfaces, which indicates that the 1994-defined surfaces are not consistent with FAA current guidance in airspace planning. As noted earlier, however, this recommendation has been removed following instrument approach analysis that occurred with the December 2008 Airport Layout Plan Airspace Classification Review.

Several obstructions were identified within the 20:1 approach surfaces for Runway 7/25. Tucker Road passes under the Runway 7 approach surface, approximately 640 feet from the runway end. According to the 1994 Airspace Plan, vehicles traveling on the roadway penetrate the 20:1 approach surface by approximately 5 feet. Orchard Road crosses the Runway 25

approach surface, approximately 300 feet from the runway end. Vehicles traveling on the roadway penetrate the 20:1 approach surface by 8 feet.

The 1994 Runway Protection Zone Plans and Profiles depicted Obstruction Clearance Approach (OCA)[15] surfaces to improve obstruction clearance for both runway ends. The use of alternative OCA surface criteria for Runway 7/25 allowed the 20:1 approach surface to begin at each runway threshold, rather than 200 feet beyond the runway, which is standard under FAR Part 77. The use of OCA technically eliminated the obstructions created by the roads at both runway ends, although this criterion is not appropriate for runways expected to support instrument night circling operations, if that is required.

The 1994 Plan also depicted Orchard Road being relocated to accommodate the future runway extension and improve obstruction clearance for the approach. A beauty shop and restaurant penetrating the Runway 7 approach surface were recommended for relocation. The beauty shop building has since been removed.

Based on the ~~removal~~elimination of all plans for non-precision instrument approach capabilities for Runway 7/25 and the forecast B-II design aircraft, "other-than-utility" non-precision approach surfaces with a slope of 20:1 are ~~recommended~~retained. ~~A formal TERPS airspace evaluation will be required to determine the feasibility of establishing a procedure and the approach minimums that can be obtained. In the event that it is determined that the runway cannot accommodate a straight-in instrument approach procedure due to terrain or obstruction clearance issues, the airport may be able to accommodate a circle to land instrument procedure with visual (20:1) approach surfaces. However, unless proven unfeasible, it is appropriate to base long-term airspace planning on the best instrument capabilities believed to be currently available.~~ An updated evaluation of obstructions within the ~~34~~20:1 ~~10~~5,000-foot ~~non-precision instrument visual~~ visual approach surfaces ~~will be performed when the airspace plan is revised to reflect~~reflects current airspace planning criteria.

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Primary Surface

The primary surface is a rectangular plane of airspace, which rests on the runway (at centerline elevation) and extends 200 feet beyond the runway end. The primary surface should be free of any penetrations, except items with locations fixed by function (i.e., VASI, runway or taxiway

[15] FAA Advisory Circular 150/5300-13, Appendix 2.

edge lights, etc.). The primary surface end connects to the inner portion of the runway approach surface.

The primary surface for Runway 7/25 has historically been maintained to meet utility/visual runway standards (250 feet wide). The 1994 Airspace Plan recommended a 500-foot wide primary surface for Runway 7/25 based on future instrument approach capabilities. Due to the "marginal ~~effectivness~~effectiveness" of an instrument approach, as cited in the December 2008 Airport Layout Plan Airspace Classification Review, the Port has abandoned plans for an instrument approach and now relies on utility/visual standards. A 500-foot wide primary surface continues to be appropriate for Runway 7/25 based on the utility/visual approach capabilities for the runway. This dimension is compatible with the existing utility runway designation.

It appears that a 500-foot wide primary surface for Runway 7/25 can be provided to meet FAA standards through minor grading and relocation of the aircraft tiedown positions and the aircraft fuel facilities on the south apron located within 250 feet of runway centerline. During a recent visual inspection of the airport several large trees were observed to be located within primary surface near the southeast corner of the airport. The airport property line in this area is located approximately 160 to 170 feet from the runway centerline. This does not allow the airport to control and protect the recommended 500-foot wide primary surface, which would be required for a non-precision instrument approach. The recommended acquisition of a 100-foot strip of property along the southeast airport property line was depicted on the 1994 ALP with a modification to standards to allow an existing residence to remain.

Transitional Surface

The transitional surface is located at the outer edge of the primary surface, represented by a plane of airspace that rises perpendicularly at a slope of 7 to 1, until reaching an elevation 150 feet above runway elevation. This surface should be free of obstructions (i.e., parked aircraft, structures, trees, etc.).

Horizontal Surface

The horizontal surface is a flat plane of airspace located 150 feet above runway elevation. Based on the utility/visual runway designation associated with the future B-II design aircraft, the outer boundary of the Runway 7/25 horizontal surface is defined by two 5,000-foot radii, which extend

from the runway ends (the intersection point of the extended runway centerline, the outer edge of primary surface, and the inner edge of the approach surface). The outer points of the radii for each runway are connected to form an oval, which is defined as the horizontal surface.

The 1994 Airspace Plan depicted a horizontal surface with 5,000-foot radii, based on a utility runway designation. One area of terrain penetration was identified within the horizontal surface, southwest of the runway.

Conical Surface

The conical surface is an outer band of airspace, which abuts the horizontal surface. The conical surface begins at the elevation of the horizontal surface and extends outward 4,000 feet at a slope of 20:1. The top elevation of the conical surface is 200 feet above the horizontal surface and 350 feet above airport elevation. ~~One area of terrain penetration was identified within the conical surface on the 1994 Airspace Plan, although this area would now be located within the previously described (expanded) horizontal surface. An updated evaluation of obstructions within the conical surface will be performed when the airspace plan is revised to reflect current airspace planning criteria.~~

AIRSIDE REQUIREMENTS

Airside facilities are those directly related to the arrival and departure and movement of aircraft:

- Runways
- Taxiways
- Airfield Lighting

Runways

The adequacy of the existing runway system at Ken Jernstedt Airfield was analyzed from a number of perspectives including runway orientation, airfield capacity, runway length, and pavement strength.

Runway Orientation

The orientation of runways for takeoff and landing operations is primarily a function of wind velocity and direction, combined with the ability of aircraft to operate under adverse wind conditions. When landing and taking off, aircraft are able to maneuver on a runway as long as the wind component perpendicular to the aircraft's direction of travel (defined as crosswind) is not excessive. For runway planning and design, a crosswind component is considered excessive at 12 miles per hour for smaller aircraft (gross takeoff weight 12,500 pounds or less) and 15 miles per hour for larger aircraft. FAA planning standards indicate that an airport should be planned with the capability to operate under allowable wind conditions at least 95 percent of the time.

A wind rose was created for the runway as part of the 1977 Airport Master Plan using local estimates. Based on that evaluation, wind coverage for Runway 7/25 was estimated at approximately 96.5 percent at 15 miles per hour (13 knots). Prevailing winds are from the west and local pilots indicate that Runway 25 is most often used. Based on available data, it appears that Runway 7/25 meets the FAA-recommended wind coverage (95 percent) at both 12 and 15 miles per hour.

Runway Length

Runway length requirements are based primarily upon airport elevation, mean maximum daily temperature of the hottest month, runway gradient, and the critical aircraft type expected to use the runway. A summary of FAA-recommended runway lengths for a variety of aircraft types and load configurations are described in **Table 4-6**.

Runway 7/25 accommodates predominantly small aircraft (less than 12,500 pounds) operations. Since the airport accommodates limited activity from aircraft weighing more than 12,500 pounds, the current evaluation of runway length requirements should be based on the FAA's model for "small airplanes."

The 1994 Airport Layout Plan identified the future critical aircraft for Runway 7/25 as twin-engine turboprop, which corresponds to airport reference code (ARC) B-II. As noted in the updated forecast evaluation, the airport is expected to accommodate increasing levels of B-II aircraft activity during the current planning period.

Based on local conditions and the methodology outlined in **AC 150/5325-4A**, Runway 7/25 can currently accommodate approximately 91 percent of the small airplane fleet under the conditions common during a typical summer day in Hood River.

A runway length of 3,150 feet is required to accommodate 95 percent of small airplanes (12,500 pounds or less maximum gross takeoff weight) with 10 or less passenger seats; a length of 3,760 feet would be required to accommodate 100 percent of small airplanes, which would include business class twin-engine piston, turboprop and light jets weighing less than 12,500 pounds. The runway length requirements for several typical small/medium business jets are also summarized in **Table 4-6** for general comparison.

As noted in **Table 4-6**, a runway length of approximately 5,060 feet would be required to accommodate approximately 75 percent of the large aircraft fleet (weighing more 12,500 pounds) with a 60 percent useful load. However, it does not appear that sufficient demand would be generated by the portion of ADG II aircraft requiring significantly longer runways than most small business class turboprops or business jets.

~~The 1994 Airport Layout Plan recommended a future runway length of 4,000 feet, which appears to represent a balance between the needs of the small aircraft fleet and the lower end of larger business aircraft fleet. The practical limitations of the airfield site may limit runway expansion beyond 4,000 feet. As a result, it is recommended that the previously defined future runway length of 4,000 feet be retained (in reserve) to enable to the airport to accommodate demands of future design aircraft, as needed.~~ With this updated plan, the runway will remain at its present length, 3,040 feet. There are absolutely no plans to expand the runway beyond this present length.

The existing width of Runway 7/25 is 75 feet, which exceeds the ADG I standard (60 feet) and meets the ADG II standard (75 feet). The existing runway width will accommodate both existing and forecast air traffic through the twenty-year planning period.

TABLE 4-6: FAA-RECOMMENDED RUNWAY LENGTHS
(FROM FAA COMPUTER MODEL)

Runway Length Parameters for Ken Jernstedt Airfield

- *Airport Elevation: 631 feet MSL*
- *Mean Max Temperature in Hottest Month: 81 F*
- *Maximum Difference in Runway Centerline Elevation: 38 feet*
- *Existing Runway Length: 3,040 feet*

Small Airplanes with less than 10 seats	
75 percent of these airplanes	*2,620 feet*
95 percent of these airplanes	*3,150 feet*
100 percent of these airplanes	*3,760 feet*
Small airplanes with 10 or more seats	*4,230 feet*
Large Airplanes of 60,000 pounds or less	
75 percent of these airplanes at 60 percent useful load	*5,060 feet*
75 percent of these airplanes at 90 percent useful load	*6,540 feet*
100 percent of these airplanes at 60 percent useful load	*5,640 feet*
100 percent of these airplanes at 90 percent useful load	*8,190 feet*
Airplanes of more than 60,000 pounds	*5,230 feet*
Selected Aircraft Types:	
Cessna Citation CJI (6-7 passengers / 1 crew 10,600# MGW)	*4,670 feet***
Cessna Citation Bravo (7-11 passengers / 2 crew 14,800# MGW)	*4,300 feet***
Cessna Citation Excel (7-8 passengers / 2 crew 20,000# MGW)	*4,200 feet***
*** Takeoff distances based on maximum gross weight and conditions listed above; passenger and/or fuel loads may be reduced based on aircraft operating weight limits.*	

1. FAR Part 25 Balanced Field Length at maximum certificated takeoff weight (accelerated/stop distance). Cessna Citation runway length requirements based on 15 degrees flaps, 81 degrees F, MGTW, distance to 35 feet above the runway; data provided by manufacturer (Cessna Citation Flight Planning Guides).

Airfield Pavement

According to the data contained in the 2000 pavement condition report, Ken Jernstedt Airfield pavements ranged from "failed" to "excellent."[16] **Table 4-7** summarizes the five-year maintenance program recommended for Ken Jernstedt Airfield and additional pavement maintenance items anticipated during the current 20-year planning period. The rate of deterioration of airfield pavements increases significantly as they age. A regular maintenance program of vegetation control, crackfilling, and sealcoating is recommended to extend the useful life of all airfield pavements. It should also be noted that some of the pavement plan's recommended 5-year projects (such as the overlay/reconstruct of the south parallel taxiway) may not be required or appropriate if other projects are planned in the near term to correct existing facility deficiencies.

[16] Pavement Consultants Inc. (8/21/2000).

TABLE 4-7: SUMMARY OF RECOMMENDED AIRFIELD PAVEMENT MAINTENANCE

Pavement Section	5-Year Recommended Maintenance	Other Recommended Maintenance During 20-Year Planning Period[1]
Runway 7/25	Slurry Seal (2002)	Overlay (2008) Slurry Seal (2013) Slurry Seal (2018)
North Parallel Taxiway	Slurry Seal (2002)	Relocate (new taxiway) (2007+) Slurry Seal (2012) Slurry Seal (2017)
South Parallel Taxiway	Overlay West Taxiway Exit (2003) Reconstruct West 200-foot Section (2003) Slurry Seal All Other sections (2003)	Relocate (new taxiway) (2007+) Slurry Seal (2013) Slurry Seal (2018)
South Tiedown Apron (to FBO)	Slurry Seal (2003) Reconstruct Section Adjacent to FBO (2003)	Overlay (2010) Slurry Seal (2015) Slurry Seal (2020)
South T-Hangar Apron/Taxilanes	Slurry Seal (2002)	Overlay (2010) Slurry Seal (2015) Slurry Seal (2020)
SW Hangar Apron	Reconstruct (2003)	Slurry Seal (2008) Slurry Seal (2014) Slurry Seal (2019)
North Apron and NW Hangar Taxilanes	Slurry Seal (2001)	Overlay (2011) Slurry Seal (2016) Slurry Seal (2021)

1. The dates identified for long-term pavement maintenance are approximate and assume that all deferred 5-year maintenance recommended in Years 1, 2 or 3 (2001-2003), will be completed by 2004 with all subsequent schedules based on 5 year intervals for slurry seals and rehabilitation timing based on 2000 PCI ratings. These projections should be periodically adjusted based on updated inspections.

Runway 7/25

The 2000 PCI report rates the runway "very good." The report indicates that without the recommended maintenance, the runway rating will decline to "good" by 2010. The PCI report recommended a slurry seal for the entire runway in Year 2 (2002).

Based on the age and condition of the pavement, additional slurry seals and eventually, a full asphalt overlay will be needed during the twenty-year planning period. The existing 23,000 pound (single wheel) pavement strength is adequate to accommodate regular operations with most aircraft, although as part of a future upgrade to ADG II standards, a 30,000 pound single wheel rating would be appropriate.

North Parallel Taxiway

In the 2000 report, the north parallel taxiway was rated "excellent." The report indicates that without the recommended maintenance, the taxiway rating will decline to "good" by 2010. The PCI report recommended a slurry seal for the taxiway in Year 2 (2002).

As earlier noted that the north parallel taxiway does not meet ADG I or II runway separation standards. Once the taxiway is relocated, additional slurry seals will be needed periodically to maximize useful life of the pavement. The taxiway markings will also require periodic repainting during the current planning period, usually in conjunction with periodic seal coats.

South Parallel Taxiway

In the 2000 report, the south parallel taxiway was rated "very good" to "poor." The report indicates that without the recommended maintenance, the western section of the taxiway will deteriorate to "very poor" condition by 2010 and the other sections of the taxiway are projected to decline to "good" condition. The PCI report recommended a combination of reconstruction, overlay and slurry seal for the taxiway in Year 3 (2003).

As noted earlier, the south parallel taxiway does not meet ADG I or II runway separation standards. Once the taxiway is relocated, additional slurry seals will be needed periodically to maximize useful life of the pavement. The taxiway markings will also require periodic repainting during the current planning period.

Aircraft Aprons

In the 2000 PCI report, the north apron and hangar area pavements were rated "good." The report indicates that without the recommended maintenance, the tiedown apron will decline to "fair" condition by 2010. The PCI report recommended a slurry seal for the north apron and hangar taxilanes in Year 1 (2001). Based on the age and condition of the pavement, additional slurry seals and eventually, a full asphalt overlay will be needed during the twenty-year planning period.

The south apron and hangar area pavements were rated from "poor" to "excellent." The pavement located directly in front of the FBO was rated "poor" and is projected to "fail" by 2005 without recommended maintenance. Other sections of the south aprons are projected to decline from "very good" or "excellent" condition to "fair" to "good" condition by 2010, without recommended maintenance. The PCI report recommended a combination of reconstruction,

overlay and slurry seal for all of the south apron sections in Year 3 (2003). Additional slurry seals and eventually, full asphalt overlays will be needed during the twenty year planning period for the south apron sections.

Airfield Capacity

The capacity of a single runway with a parallel taxiway typically ranges between 60 to 90 operations per hour during visual flight rules (VFR) conditions.

The existing runway/taxiway configuration provides reasonably efficient ground movement for aircraft, although the partial-length south parallel taxiway requires aircraft to cross the active runway when taxiing from the south apron to the end of Runway 25 for takeoff. Adding exit taxiways east of midfield on the north and south sides of the runway would reduce the roll-out and taxiing distances (and runway occupancy time) for aircraft landing on Runway 25. However, based on activity forecasts, the runway is expected to operate below capacity during the twenty-year planning period, in its existing configuration.

Taxiways

Runway 7/25 is served by parallel taxiways on both sides. As noted earlier, the existing runway-taxiway separations do not meet ADG I or ADG II standards. The ADG I standard separation is 225 feet from runway centerline. At a minimum, the parallel taxiways should be relocated with ADG I separations when the next major project (overlay or reconstruction) is required. At that time, the Port may wish to consider increasing the taxiway separation to 240 feet in order to meet the future ADG II standard. This would eliminate the need to relocate the taxiway twice and would also protect the long-term facility needs by establishing adequate clearances for parked aircraft and other facilities. If an ADG I separation is used, the taxiways would be constructed at a width of 25 feet. If an ADG II separation is used, the taxiways may be constructed at either the ADG I width (25 feet) or at the ADG II width (35 feet), depending on the conditions at the time.

Providing exit taxiways on both sides of the runway (east of midfield) is recommended to reduce runway occupancy times during roll-out by allowing aircraft to reach one of the parallel taxiways more quickly.

Based on current runway utilization, an aircraft holding area should be added at the Runway 25 end on the north parallel taxiway. The hold area would allow pre-departure aircraft checks and run-ups to be conducted without blocking taxiway access to the runway for other aircraft.

Airfield Instrumentation, Lighting and Marking

Runway 7/25 has low-intensity runway edge lighting (LIRL). The LIRL system appears to be in fair to poor condition and will require replacement early in the current planning period. Medium-intensity runway edge lighting (MIRL) is the standard for general aviation runways.

Runways 7 and 25 are not equipped with visual guidance indicators (VGI). The 1994 ALP recommended installation of visual approach slope indicators (VASI) for both runway ends. The Precision Approach Path Indicator (PAPI) is currently the primary visual guidance system used at general aviation airports and is recommended for both runway ends.

Runway 25 is equipped with runway end identifier lights (REILS). REILs consist of two sequenced strobes that provide rapid and positive identification at the approach end of the runway. REILs improve utilization of the runway during nighttime and poor visibility. The existing taxiway system does not have lighting or edge reflectors. Based on the relatively low level of nighttime operations, edge reflectors would be adequate for current operations.

Overhead lighting is available in most aircraft hangar and apron areas. Additional flood lighting is recommended for all expanded operations areas for improved utilization and security.

Runway 7/25 has basic runway markings (runway numbers, centerline stripe). .

On-Field Weather Data

The automated weather observation system (AWOS) meets all on-site weather reporting requirements for visual use.

LANDSIDE FACILITIES

The purpose of this section is to determine the space requirements during the planning period for landside facilities. The following types of facilities are associated with landside aviation operations areas:

- *Hangars*
- *Aircraft Parking and Tiedown Apron*
- *Fixed Base Operator (FBO) Facilities*

Hangars

In 2004, Ken Jernstedt Airfield had three 12-unit T-hangars and several conventional hangars located on the north and south sides of the runway. It is estimated that the existing on-airport hangar capacity accommodates approximately 50 aircraft, which represents about 60 percent of the current estimate of 86 based aircraft. Three additional hangars are currently located off airport property.

For planning purposes, it is estimated that the percentage of the airport's locally based aircraft stored in hangars will increase from approximately 60 percent to 80 percent during the current planning period. It is anticipated that the higher level of hangar utilization will be reflected in both newly arriving aircraft and aircraft currently located at the airport (parked on tiedown aprons). The higher rates of hangar utilization assumed in this facility requirements evaluation is based on the level of interest expressed by local pilots in having new hangar space constructed at the airport. It is also assumed that all existing hangar space is committed and future demand will need to be met through new construction.

A planning standard of 1,500 square feet per based aircraft stored in hangars is used to project gross space requirements. As indicated in the aviation activity forecasts, the number of based aircraft at Ken Jernstedt Airfield is projected to increase by 39 aircraft during the twenty-year planning period, although demand for hangars will also be partially driven by existing aircraft. Based on projected hangar utilization levels, long-term demand for new hangar space hangars is estimated to be 50 spaces, or approximately 75,000 square feet. The projected hangar needs are presented in **Table 4-9**, on page 4-33.

Individual aircraft owners needs vary and demand can be influenced by a wide range of factors beyond the control of an airport. For this reason, it is recommended that an additional hangar development reserve be identified to accommodate any unanticipated demand. Reserves should be established to accommodate a combination of conventional hangars and T-hangars.

It is recognized that the airport does not currently have adequate space to accommodate projected hangar requirements within existing property. Property acquisition will be needed in order for the airport to accommodate forecast demand.

Aircraft Parking and Tiedown Apron

Aircraft parking apron should be provided for locally based aircraft that are not stored in hangars and for transient aircraft visiting the airport. Currently, locally based aircraft parking is divided between the south and north aprons. Most itinerant parking is accommodated on the south apron, adjacent to the FBO and aircraft fuel. The existing aircraft aprons have approximately 63 light aircraft tiedowns. As noted in the inventory chapter, the north apron originally had an additional 14 tiedowns that were eliminated when an old underground fuel tank was removed. Some or all of these tiedowns could be replaced if needed.

The relocation of the north and south parallel taxiways to meet recommended runway separation standards will reduce available aircraft parking by eliminating tiedowns that are located within future taxiway object free areas. The number of parking positions eliminated will depend on whether the taxiways are located to meet ADG I or ADG II runway separation standards. **Table 4-8** summarizes the potential impacts associated with the parallel taxiway reconfiguration options. For the purposes of evaluating aircraft parking requirements, it is assumed that the ADG I taxiway impacts will occur early in the planning period, and the ADG II taxiway impacts would occur late in the twenty year planning period (based on forecast activity).

TABLE 4-8: CHANGES IN AIRCRAFT PARKING AVAILABILITY WITH RELOCATED PARALLEL TAXIWAYS

Apron	North and South ADG I Parallel Taxiways (@ 225 feet)	North and South ADG II Parallel Taxiways (@ 240 feet)
South Tiedown Apron	- 7 tiedowns	-13 tiedowns
FBO Apron	-1 tiedown	-2 tiedowns

North Tiedown Apron	No loss of tiedowns	-11 tiedowns
Total	-8 tiedowns (13% of available tiedowns)	-26 tiedowns (41% of available tiedowns)

During recent airport visits, 25 to 40 aircraft have typically been observed parked on the aprons. The estimated 40 percent of locally based aircraft currently parked on an apron would account for approximately 34 aircraft, with the remaining aircraft believed to be transient. As noted earlier, it is anticipated that the percentage of based aircraft stored in hangars at the airport will increase during the planning period and the percentage of aircraft parked on aprons will decrease. Based on the assumption that locally based aircraft apron parking demand will gradually decline from 40 percent to 20 percent during the planning period, the long-term forecast of 125 based aircraft will require 25 local tiedown positions. However, since the projections of demand are dependent on the availability of new hangar space, which cannot be assured, it would be appropriate to maintain enough parking to account for changes in activity patterns. The combined demand for locally based and itinerant parking can be monitored to determine when demand for additional parking capacity becomes sufficient to warrant apron expansion. It is recommended that apron development reserves be planned to replace existing parking capacity (as needed) that will be eliminated when parallel taxiway relocations are completed. Locally based aircraft tiedowns are planned at 300 square yards per position.

FAA **Advisory Circular 150/5300-13** suggests a methodology by which itinerant parking requirements can be determined from knowledge of busy-day operations. At Ken Jernstedt Airfield, the demand for itinerant parking spaces was estimated based on 30 percent of busy day itinerant operations (30% of busy day itinerant operations divided by two, to identify peak parking demand). By the end of the twenty-year planning period, itinerant parking requirements are estimated to be 16 light aircraft tiedowns. The FAA planning criterion of 360 square yards per itinerant aircraft was applied to the number itinerant spaces to determine future itinerant ramp requirements.

In addition to light aircraft parking positions, the airport accommodates itinerant business aircraft. Initially, one parking (drive through) space capable of accommodating a typical business aircraft would be adequate to accommodate periodic demand. Additional positions may be recommended in during the planning period if demand is sufficient. The aircraft parking area requirements are summarized in **Table 4-9.**

As with aircraft hangars, reserve areas should be identified to accommodate unanticipated demands for aircraft parking, which may exceed current projections. A development reserve area

equal to 50 percent of the 20-year parking demand will provide a conservative planning guideline to accommodate unanticipated demand, changes in existing apron configurations, and demand beyond the current planning period. The location and configuration of the development reserves will be addressed in the alternatives analysis.

Agricultural Aircraft Facilities

The existing agricultural aircraft facilities at the airport can accommodate one or two aircraft. The area is located near the end of Runway 7 and is used for aircraft loading and storage of equipment, water and mixing tanks, and chemical/pesticides drums. The size and location of the facilities appears to be adequate for current and projected needs.

Helicopter Parking Facilities

Demand for itinerant helicopter parking does not appear to be significant. However, it would be desirable to have a designated helicopter parking area located near the FBO, but with adequate separation from fixed wing aircraft tiedowns. Initially, one designated helicopter parking position would be adequate to accommodate periodic demand.

TABLE 4-9: APRON AND HANGAR FACILITY REQUIREMENTS SUMMARY

Item	Base Year (2003)	2007	2012	2017	2022
Based Aircraft (Forecast)	**86**	**93**	**103**	**114**	**125**
Aircraft Parking Apron *(Existing Facilities)*					
Light Aircraft Tiedowns	63				
AG Aircraft Parking Spaces	1				
Business Aircraft Spaces	0[1]				
Total Apron Area	36,244 sy				
Projected Needs *(Demand)* [2]					
Itinerant Aircraft Parking (@ 360 SY each)		11 spaces / 3,960 sy	12 spaces / 4,320 sy	14 spaces / 5,040 sy	16 spaces / 5,760 sy
Locally-Based Tiedowns (@ 300 SY each)		33 spaces / 9,900 sy	31 spaces / 9,300 sy	29 spaces / 8,700 sy	25 spaces / 7,500 sy
Business Aircraft Parking Demand (@ 625 SY each)		1 space / 625 sy	2 spaces / 1,250 sy	2 spaces / 1,250 sy	3 spaces / 1,875 sy
AG Aircraft Parking Spaces (@ 700 SY each)		1 space / 700 sy	1 space / 700 sy	1 space / 700 sy	2 spaces / 1,400 sy
Itinerant Helicopter Parking (@ 1,200 SY each)		1 space / 1,200 sy	1 space / 1,200 sy	1 space / 1,200 sy	2 spaces / 2,400 sy
Total Apron Needs		**47 spaces 16,385 SY**	**47 spaces 16,770 SY**	**47 spaces 16,890 SY**	**48 spaces 18,935 SY**
Aircraft Hangars *(Existing Facilities)*					
Existing Hangar Spaces (on airport)	50 spaces (estimated)				
Projected Needs *(Demand)* [3]					
(New) Hangar Space Demand (@ 1,500 SF per space) *(Cumulative 20-year projected demand: 50 spaces / 75,000 SF)*		**+11 spaces / 16,500 sf**	**+11 spaces / 16,500 sf**	**+14 spaces / 21,000 sf**	**+14 spaces / 21,000 sf**

1. No designated parking for business aircraft, although areas of unused apron are generally available.
2. Aircraft parking demand levels identified for each forecast year represent forecast gross demand, which may be accommodated through a combination of existing and future parking areas.
3. Hangar demand levels identified for each forecast year represent the net increase above current hangar capacity.

FBO Facilities

The current FBO building is used for a variety of purposes. The 1990 Master Plan recommended relocating the FBO and fuel facilities to the north apron. This recommendation will be reevaluated in the updated alternatives analysis. Depending on the preferred alternative, options may include replacement of the building in its current location, full/partial renovation or relocation to a new site.

The FBO building should have adequate space for office, classroom, restrooms, and pilot & passenger waiting areas. FBO facility requirements are driven primarily by market conditions and the particular needs of the FBO and its customers. Because future FBO facility needs are difficult to quantify, the best planning approach is to identify development reserves that could accommodate new or expanded FBO facilities. General areas for expanded operations, maintenance hangar, vehicle parking, and apron should also be reserved. A 1,500 to 3,000 square foot building should be adequate to meet the airport's basic FBO needs, although the economics involved for the FBO and the Port will largely determine the type of facilities that are developed.

The airport should be capable of accommodating an additional FBO, should that interest develop. Although it appears unlikely that Ken Jernstedt Airfield will be able to support more than one FBO during the current planning period, the airport needs to provide equal access to prospective tenants, without discrimination.

Surface Access Requirements

Surface access to the airport appears to be adequate for the planning period. However, it has been noted that vehicles are driven around the west end of the runway when crossing between the south and north sides of the airfield. An internal airport access road located outside the runway safety area, should be considered to address this need.

Vehicle parking adjacent to the aircraft parking areas appears to be adequate based on current needs, although terminal area vehicle parking reserves should be provided to allow for an expansion or reconfiguration of the FBO facilities or a general increase in vehicle parking demand. Additional parking areas should be provided as part of future hangar projects. The requirements for providing designated vehicle parking areas adjacent to hangars vary greatly at small airports. A planning standard of 0.5 to 1.0 vehicle parking spaces per based aircraft will

accommodate the most common parking demand levels. For larger hangars, a formula based on the square footage of the building is often used to determine vehicle parking requirements. This is a common approach for establishing off-street parking in most communities.

SUPPORT FACILITIES

Aviation Fuel Storage

Aviation gasoline (AVGAS) is available at Ken Jernstedt Airfield. As noted previously in the inventory chapter, the airport currently has one 12,000-gallon double wall aboveground tank. The frequency of restocking AVGAS would be expected to increase as aircraft activity increases, although a need for additional storage capacity is not anticipated. However, adequate space should be reserved to accommodate larger capacity fuel tanks or another fuel grade in the event that future demand warrants expansion.

Airport Utilities

The existing utilities on the airport appear to be adequate for current and projected needs within existing developed areas of the airport. Future expansion of hangars facilities on the airport will normally require extensions of electrical service; demand for water, sewer and telephone service may also occur in the new development areas.

Overhead electrical and telephone lines should be buried whenever possible; new electrical connections to hangars or other airfield developments should also be placed underground. New airfield electrical requirements include providing power to the PAPIs and REILs on the runway.

Security

The airport has very limited wire fencing on portions of its boundary and chain link fencing at the entrance to the north apron and south T-hangar. There are no major security concerns at the airport, although providing chain-link fencing and gates along exposed areas of airfield activity is recommended to reduce unauthorized human access. As noted in the inventory chapter, the airport experiences a significant amount of non-airport pedestrian traffic, which often involves

crossing the runway-taxiway system. Upgrading fencing around the airport property line will be helpful in reducing these incursions.

Additional flood lighting should be provided around the aircraft parking apron, fueling area, and hangar areas to maintain adequate security.

FACILITY REQUIREMENTS SUMMARY

The projected twenty-year facility needs for Ken Jernstedt Airfield are summarized in **Table 4-10**. As noted in the table, the primary facility requirements include parallel taxiway improvements and the addition of new hangar space on the airport. Maintaining and replacing existing pavements represents a significant facility need. Property acquisition is also an important factor in the airport's ability to accommodate forecast facility demand.

The forecasts of aviation activity contained in Chapter Three anticipate moderate growth in activity that will result in specific airside facility demands beyond existing capabilities. The existing airfield facilities have the ability to accommodate a significant increase in activity, with targeted facility improvements. For the most part, the need for new or expanded facilities, such as aircraft hangars, will be market driven, although there will be significant costs associated with site preparation, utility extensions, and taxiway construction.

TABLE 4-10: FACILITY REQUIREMENTS SUMMARY

Item	Short Term	Long Term
Runway 7/25	Pavement Maintenance[1]	Runway Overlay Pavement Maintenance Upgrade Markings to Nonprecision Inst. 960-foot Runway Extension Reserve (east)
Parallel Taxiways	Pavement Maintenance Relocate North Parallel Taxiway w/ AC Holding Area (east end) Relocate South Parallel Taxiway	Mid-Field Exit Taxiways Pavement Maintenance Taxiways to New Hangar Areas
Aircraft Aprons	Pavement Maintenance Reconfigure Aircraft Tiedowns Based on Parallel Taxiway Relocations	Pavement Maintenance Overlay South and North Aprons Apron Development Reserves
Agricultural Aircraft Facilities	None	Development Reserve
Hangars	Development Areas for T-hangar and Conventional Hangar	Development Areas and Additional Hangar Development Reserves
Navigational Aids and Lighting	MIRL PAPI (Rwy 7 & 25) Taxiway Edge Reflectors Flood Lighting (a/c parking & hangar areas)	REIL (Rwy 7) Additional Flood Lighting As Required
Fuel Storage	None	Fuel Storage Reserve
FBO Facilities	FBO Building/Apron Expansion Reserve	Reserve for 2nd FBO
Utilities	Extend Electrical to New Facilities	Same
Roadways	Extend Roads to New Facilities Internal Airport Access Road (around western end of Runway)	Same
Security	Airport Fencing; Flood Lighting	Same
Property Acquisition	Hangar Development Areas	Protection for future airport airspace surfaces and airfield setbacks.

1. Vegetation control, crackfill, sealcoat

CHAPTER FIVE
AIRPORT DEVELOPMENT ALTERNATIVES & AIRPORT LAYOUT PLANS

INTRODUCTION

The evaluation of development options at Ken Jernstedt Airfield began with preparation of three preliminary runway options and two options for landside facility improvements. The runway options addressed obstruction clearance issues at both ends and the need to upgrade the runway to meet FAA airport design standards to correct several existing non-standard configurations.

These preliminary concepts were presented to port staff and board, the planning advisory committee, FAA, ODA and the public for review and comment. The advisory committee and Port staff also reviewed the concepts in greater detail at subsequent meetings and forwarded recommendations to the Consultant. Overall, the input provided by Port staff/board and planning advisory committee provided clear direction, which allowed refinement of the concepts and integration into the Airport Layout Plan as the preferred alternative.

As noted in the forecasts, demand for landside facilities (hangars, aircraft parking, associated facilities, etc.) within the current 20-year planning period is expected to be moderate. However, it has been previously noted that the airport's existing land base is not adequate to accommodate future landside facility expansion needs. Both options for future landside facility improvements (hangars, aircraft parking, etc.) were dependent on north-side property acquisition. These parcels, identified in the Ken Jernstedt Airfield Airport Layout Plan Update 2004-2024, However, since that plan's adoption by FAA and the Port, those properties are no longer available for airport expansion; an aviation museum, the Western Antique Aeroplane and Automobile Museum, now occupies the majority of this property~~.~~ Based on the uncertainty associated with predicting future activity trends, it is also recommended that facility development areas and reserves be identified to provide long-term development potential.

The 2004-2024 Update offered a variety of options before identifying the Airport Layout Plan that was adopted by the FAA and the Port. In late 2008, this Airport Layout Plan was amended by FAA to remove all references to an instrument approach in favor of the existing visual approach. All options except the adopted Airport Layout Plan are removed from this document.

The Runway 7 threshold is shifted 550 feet to improve obstruction clearance and eliminate Highway 281/Tucker Road from the runway protection zone (RPZ). The end of Runway 25 end is also shifted 550 feet to compensate for the west end shift and maintain the existing runway length. Orchard Road is ~~re-routed~~ vacated (similar to 1994 ALP) to the east, with the section passing near the east end of the runway being closed.

SUMMARY OF PREFERRED AIRPORT DEVELOPMENT ALTERNATIVES

Based on their review ~~of the options presented~~, the planning advisory committee and Port supported a preferred alternative that contained the following elements:

- Close Orchard Road near the end of Runway 25 to accommodate runway shift;
- Shift Runway 7/25 550 feet east to improve obstruction clearance at both ends; maintain existing runway length (3,040 feet); and use chevron stripping on abandoned 550 feet west of Runway 7 to provide additional safety area in the event a pilot requires additional landing area. The Port has the option of removing ~~and remove~~ existing sections of closed runway and parallel taxiway pavement, should it be required by Hood River County;
- Maintain long-term plan to upgrade to B-II design standards;
- Relocate north parallel taxiway to 240 feet from runway centerline (B-II standard);
- Reconfigure/expand north apron tiedown;
- Develop area on north side of north apron for conventional hangars and FBO (reserve);
- Extend taxiway access to serve facilities on north side of north apron;
- Relocate FBO and aircraft fuel to north apron;

- Redevelopment of the south apron to accommodate small/medium conventional hangars once the south parallel taxiway is relocated and the FBO/fuel is relocated to the north side of the runway;

- Property acquisition is recommended, with willing sellers, to accommodate aviation-related development on the north side of the airport;

- Additional property acquisition is recommended as feasible (with willing sellers) along the southeast corner of the airport, to increase runway clear areas and development setbacks necessary to meet B-II design standards and airspace associated with planned airfield configuration.

Based on all comments provided, the input was incorporated into the Airport Layout Plan drawing. ~~The preliminary conceptual development options presented in this chapter illustrate the progressive process of alternatives evaluation and do not necessarily reflect the final preferred configuration of facilities depicted on the Airport Layout Plan that resulted from the overall review process. Additional detail has been added to the ALP drawing for future aircraft apron, hangar and access road configurations.~~ The draft set of Airport Layout Plan drawings is presented at the end of this chapter.

AIRPORT LAYOUT PLAN DRAWINGS

The options that were considered for the long-term development of Ken Jernstedt Airfield were described in the Alternatives section of this chapter. This evaluation resulted in the selection of a preferred alternative. The components of the preferred alternative have been incorporated into the Airport Layout Plan drawings, which are summarized in this section. The set of airport plans, which is referred to in aggregate as the "Airport Layout Plan" (ALP) has been prepared in accordance with FAA guidelines. The drawings illustrate existing conditions, recommended changes in airfield facilities, existing and recommended property ownership, land use, and obstruction removal. The ALP set is presented at the end of this chapter:

- *Drawing 1 - Airport Layout Plan*

- *Drawing 2 – FAR Part 77 Airspace Plan*

- *Drawing 3 – Runway 7/25 Approach Surface Plan & Profile*
- *Drawing 4 – Airport Land Use Plan with 2022 Noise Contours*

Airport Layout Plan

The Airport Layout Plan (ALP) presents the existing and ultimate airport layout and depicts the improvements that are recommended to enable the airport to meet forecast aviation demand. Airport vicinity and location maps, and data blocks for the overall airport and the runway are presented on the ALP. A declared distances table, legend of symbols and line types, and building/facility table (with corresponding numbers depicted on the Airport Layout Plan drawing) are also provided.

The improvements depicted on the ALP reflect all major airfield developments recommended in the twenty-year planning period. Decisions made by the airport sponsor regarding the actual scheduling of projects will be based on specific demand and the availability of funding. Long-term development reserves are also identified on the ALP to accommodate potential demand that could exceed current expectations or may occur beyond the current twenty-year planning period.

The major improvements depicted on the ALP are summarized below:

- Runway 7/25 is shifted 550 feet east; existing length is maintained;
- Orchard Road is closed near the Runway 25 end;
- Property acquisition is identified for aviation-related development on the north side of the airport, and the southeast corner of the airport to provide adequate runway clear areas; The Port has indicated that property acquisition will be limited to willing sellers only;
- The north parallel taxiway is relocated to provide B-II runway separation (240 feet);
- North side landside improvements within existing airport property and on property to be acquired include: apron expansion, hangar sites, FBO site, and relocated aircraft fuel facilities;
- Improvements to the south parallel taxiway will be made based on B-II runway separation with additional connections to the runway provided; and

- A new internal airport access road is provided beyond the west end of the runway (outside RSA and OFA) to connect north and south side development and eliminate vehicle crossings near end of Runway 7.

Projects such as maintenance or reconstruction of airfield pavements, which are not depicted on the ALP, are described in the Capital Improvements Program, in **Chapter Six**.

Airspace Plan

The FAR Part 77 Airspace Plan for Ken Jernstedt Airfield was developed based on Federal Aviation Regulations (FAR) **Part 77, Objects Affecting Navigable Airspace.** The Airspace Plan provides the plan view of the airspace surfaces, profile views of the runway approach surfaces, and a detailed plan view of the runway approach surfaces. This information is intended to define and protect the airspace surfaces from encroachment due to incompatible land uses, which could adversely affect safe airport operations. By comparing the elevations of the airspace surfaces with the surrounding terrain, an evaluation of potential obstructions to navigable airspace was conducted. Additional plan and profile detail for the runway is provided on a separate drawing (see Sheet 3).

The airspace surfaces depicted for Ken Jernstedt Airfield reflect the ALP-recommended (ultimate) runway length of 3,040 feet for Runway 7/25. Based on the planned use of B-II design standards, Runway 7/25 will be designed for use by aircraft weighing more than 12,500 pounds, which places it in the "other than utility" category under FAR Part 77. The December 2008 Airport Layout Plan Airspace Classification Review noted the "marginal ~~effectivness~~effectiveness" of a non-precision instrument approach, and FAA and the Port have concluded that visual approach surfaces may only be feasible on one or both runway ends. A 5,000-foot horizontal surface radius is used for each runway end to protect visual approach capabilities, which is consistent with the current horizontal surface radius.

Approach Surface Plan & Profile

The Approach Surface Plan and Profile drawing provides additional detail for the runway approaches and the runway protection zones. The profile view depicts existing (20:1) approach

surfaces. The planned easterly shift of the runway will eliminate Tucker Road from being located within the Runway 7 RPZ. The shift will also reduce obstructions to the Runway 7 approach surface. It appears that a clear 20:1 approach surface could be maintained on the shifted Runway 7, although several trees located beyond the runway (west of Tucker Road) need to be lowered or removed.

The shifted runway will require closing Orchard Road beyond the runway end. Vehicles traveling on the road create an obstruction to the Runway 25 20:1 approach surface. Trees located along the southern airport property line near Orchard Road also penetrate the approach, transitional and primary surfaces and are recommended for topping or removal.

Airport Land Use Plan with 2022 Noise Contours

The Airport Land Use Plan for Ken Jernstedt Airfield depicts existing zoning in the immediate vicinity of the airport. The area surrounding the airport is predominately zoned agricultural, although areas of rural residential zoning are located immediately southeast the airport and in all directions, within one to two miles.

Noise exposure contours based on the 2022 forecasts of aircraft activity are depicted on the Land Use Plan. The noise contours were created using the FAA's Integrated Noise Model (INM). Data from activity forecasts and aircraft fleet mix are combined with common flight tracks and runway use to create a general indication of airport-generated noise exposure. The noise contours are plotted in 5 DNL increments starting at 55 DNL. The size and shape of the contours is consistent with the airport's runway utilization and aircraft traffic.

Runway 25 is the primary landing and departure runway, which results in slightly larger contours extending outward. The contours beyond the end of Runway 7 extend over a longer distance, reflecting the flatter climb profiles of aircraft takeoff. As depicted on the Airport Layout Plan, the future runway configuration is shifted 550 feet east of its current location to improve roadway and obstruction clearance. The 2022 noise contours were developed based on this planned runway configuration.

The 2022 55 DNL noise contour extends approximately 3,600 feet beyond the future end of Runway 7 and approximately 3,200 feet beyond the future end of Runway 25. The areas located beyond the runway ends are predominantly agricultural and sparsely populated lands. The areas east of the runway are extensively developed in fruit orchards; the area west of the runway contains some orchards, but also includes open fields and low-density residential development.

Portions of the 2022 60 DNL contour extend beyond airport property beyond both runway ends. At the Runway 7 end, the 60 DNL contour, extends approximately 600 feet west of Highway 281 (Tucker Road). The Twin Peaks restaurant is located within the 60 DNL contour. At the Runway 25 end, the 60 DNL contour extends approximately 1,500 feet east of Orchard Road, largely over airport-owned lands (approximately 150 feet of 2022 60 DNL contour extends beyond the east airport boundary). Portions of the 60 DNL contour also extend along the sides of the runway and relatively narrow airport property area, particularly at the east end of the runway. The 60 DNL contour extends outward nearly 600 feet from the sides of the runway, near the east end, over adjacent residential and agricultural areas. The nearest residential area, which is located immediately south of the end of Runway 25, is located entirely within the 60 (and higher) DNL contour.

The 2022 65 DNL noise contours are contained almost entirely within airport property, with the exception of areas located near the end of Runway 25 (north and south sides). As noted above, a residential development (nine lots) is located adjacent to the southeast corner of the airport. Some of these lots have direct airfield access and at least one hangar is located off airport. The 2022 65 DNL extends over an unpopulated orchard area near the north end of Runway 25. The planned easterly shift of the runway results in the 65 DNL contour remaining entirely within airport property beyond the end of Runway 7 (approximately 800 feet east of Highway 281/Tucker Road).

The 2022 70 DNL noise contours are generally contained within airport property boundaries, although a very small portion extends beyond the airport near the end of Runway 25. Although the residential area located along the southeast corner of the airport is partially located within the 2022 70 DNL contour, most of the residences are located on the southern half of the lots, in the area of 65 or 60 DNL contour. Residential development within the 65 DNL and higher noise contour is not recommended and should be discouraged. The Airport Layout Plan identifies property acquisition in this area to provide standard runway clearances. The Port of Hood River has indicated an interest in acquiring these properties in cases where willing sellers exist. In addition to improving runway clearances, acquiring the property would help to ensure land use compatibility by preventing construction of additional residential development in areas of greater noise exposure.

With the exception of the residential area located along the southeast corner of the airport, the sparsely developed land uses in the vicinity of the airport suggest that noise compatibility will not be a significant issue during the planning period. However, since perceived noise impacts are not limited to areas with significant levels of noise, care should be taken by local land use

authorities to avoid creating potential long-term land use incompatibilities in the vicinity of the airport by permitting development of incompatible land uses such as residential subdivisions within areas of moderate or higher noise exposure. Under federal guidelines, all land uses, including residential, are considered compatible with noise exposure levels of 65DNL and lower. However, airport management should actively encourage local and transient pilots to avoid direct overflights of known noise-sensitive areas whenever possible. A detailed description of airport noise and land use compatibility is presented in **Chapter Seven**.

Drawing 1 - Airport Layout Plan

Drawing 2 - Airport Airspace Plan

Drawing 3 – Runway 7/25 Approach and Profile

Drawing 4 - Airport Land Use Plan

CHAPTER SIX
FINANCIAL MANAGEMENT AND DEVELOPMENT PROGRAM

The analyses conducted in the previous chapters have evaluated airport development needs based on forecast activity and the associated facility requirements. One of the most important elements of the master planning process is the application of basic economic, financial and management rationale so that the feasibility of implementation can be assured. The amount of local and outside funding (state, federal, etc.) that will be available during the current twenty-year planning cannot be guaranteed. In cases when the overall capital needs of an airport exceed available funding, projects will be deferred until funding can be obtained. In this situation, it is particularly important to establish and maintain priorities so that completion of the most essential improvements is assured.

Historically, the primary source of funding for major capital projects at the airport has been federal aviation trust fund monies with local matching funds provided by the Port. Hangar construction, which has not been eligible for FAA funding in the past, has been funded locally by the Port (T-hangars) and private tenants (conventional hangars). Utility improvements at the airport are also not typically eligible for FAA funding and have been locally funded.

The maintenance of airfield pavements ranges from very minor items such as crack filling to fog seals or patching. Minor pavement maintenance items such as crackfilling are not included in the capital improvement program, but will need to be undertaken by the Port on an annual or semi-annual basis. The Pavement Maintenance Management Program (PMMP) managed by the Oregon Department of Aviation (ODA) provides funding assistance for airfield pavement maintenance on established multi-year cycles. This program is intended to preserve and maintain existing airfield pavements in order to maximize their useful lives and the economic value of the pavement. As noted earlier, several short-term pavement maintenance projects are identified for Ken Jernstedt Airfield in the current PMMP, which will require local matching funds.

AIRPORT DEVELOPMENT SCHEDULE AND COST ESTIMATES

The analyses presented in Chapters Four and Five described the airport's overall development needs for the next twenty years. Estimates of project costs were developed for each project based on 2004 dollars. For planning purposes, 30 percent contingency overhead for engineering, administration, and unforeseen circumstances has been included in the estimated component and total costs. In future years, as the plan is carried out, these cost estimates can continue to assist management by adjusting the 2004-based figures for subsequent inflation. This may be accomplished by converting the interim change in the United States Consumer Price Index (USCPI) into a multiplier ratio through the following formula:

$$\frac{X}{I} = Y$$

Where:

X = USCPI in any given future year

Y = Change Ratio

I = Current Index (USCPI)

USCPI
189.1
(1982-1984 = 100)
May 2004

Multiplying the change ratio (Y) times any 2004-based cost figures presented in this study will yield the adjusted dollar amounts appropriate in any future year evaluation.

The following sections outline the recommended development program and funding assumptions. The scheduling has been prepared according to the facility requirements determined earlier. The projected staging of development projects is based upon anticipated needs and investment priorities. Actual activity levels may vary from projected levels; therefore, the staging of development in this section should be viewed as a general guide. When activity does vary from projected levels, implementation of development projects should occur when demand warrants, rather than according to the estimated staging presented in this chapter. In addition to major development projects, the airport will require regular facility maintenance and airfield pavement rehabilitation projects. As

noted in the facility requirements evaluation, airfield pavements require a regular schedule of maintenance and rehabilitation based on normal wear and useful life. Most asphalt pavement will require an overlay or similar rehabilitation on 15 to 20 year intervals. Heavily used pavements often require more frequent rehabilitation.

A summary of development costs during the twenty-year capital improvement plan is presented in **Table 6-1**. The twenty-year CIP is divided between short-term and long-term projects. The table provides a listing of the major capital projects included in the twenty-year CIP, including each project's eligibility for FAA funding. The FAA will not participate in vehicle parking, utilities, building renovations or projects associated with non-aviation developments. Some changes in funding levels and project eligibility were included in the current Airport Improvement Program (AIP) legislation. FAA funding levels have been increased from 90 percent to 95 percent. The general aviation entitlement funding level is established up to $150,000 per year, with a maximum rollover of four years. Projects such as hangar construction or fuel systems, which have not traditionally been eligible for funding, are now eligible, although the FAA indicates that this category of project would be funded only if there were no other project needs at a particular airport. Based on the overall facility needs and anticipated levels of federal funding, it has been assumed that hangar construction will not rely on FAA funds.

The short-term phase of the capital improvement program includes the highest priority projects recommended during the first five years. Long-term projects are expected to occur beyond the next five years, although changes in demand or other conditions could accelerate or slow demand for some improvements. As with most airports, pavement related improvements represent the largest portion of CIP needs at Ken Jernstedt Airfield during the current planning period. In addition, the planned upgrade to B-II design standards will require replacement (relocation) of the parallel taxiways that are located too close to the runway, which will in turn, require reconfiguration of aircraft parking and fueling facilities. Shifting the runway to improve obstruction clearance will also involve considerable cost.

The airport's extremely limited developable land area will necessitate property acquisition if future facility demands are to be met within airport boundaries. Based on the current airport boundaries and physical site characteristics, north-side property acquisition is required to accommodate all future T-hangar development. The Port has indicated that property acquisition will be limited to willing sellers only. The acquisition of property along the southeast edge of the airport, identified as a narrow strip (within the boundary of the primary surface), represents a potentially significant cost; however, depending on the requirements of the property owners, it may be necessary to acquire entire parcels and residences in order to acquire the smaller areas.

Short Term Projects

Short-term projects at Ken Jernstedt Airfield initially include property acquisition (approximately 10 acres - northeast of Runway 25) to accommodate the planned eastward runway shift. All existing airfield pavements will require a slurry seal within the five-year period. Pavement resurfacing and north apron expansion are scheduled in 2009. Projects to extend fencing around the south, west and north sections of the airport boundary are identified.

Construction of an internal airport access road around the west end of the runway is also identified as a short-term project. The roadway will be used to provide vehicle access between north- and south-side aviation areas. The unpaved access road will be located outside the runway safety area.

Long Term Projects

The majority of long-term projects at Ken Jernstedt involve several primary categories:

1. Pavement preservation, resurfacing and reconstruction. This includes periodic fog seals or slurry seals for all airfield pavements on a five-year cycle. Asphalt overlays will be required for most existing pavements within the twenty-year planning period;
2. New airfield pavement construction associated with airside and landside facilities;
3. Reconfiguration of existing facilities (i.e. parallel taxiways, etc.) to meet ADG II design standards or other FAA planning recommendations;
4. Property acquisition to support on-airport facility development and preserve FAA-required airfield and airspace clearances;
5. Building construction (hangars, FBO, etc.); and
6. Miscellaneous projects (fencing, access roads, airfield lighting, etc.).

Individual long-term projects (beginning in six years) include:

- Relocate north parallel taxiway (B-II standard 240 feet);

- Shift Runway 7/25 550 feet east to improve obstruction clearance at both ends; maintain existing runway length (3,040 feet) and remove existing sections of closed runway and parallel taxiway pavement;
- Overlay Runway 7/25 (in conjunction with shift);
- Hangar area taxilanes;
- South parallel taxiway improvements (B-II);
- Airport perimeter fencing w/ vehicle electronic gates;
- Expand north apron (tiedowns);
- Overlay aircraft parking aprons;
- Relocate FBO (new bldg) and aircraft fuel to north apron;
- Construct new taxiway to north hangar area and reserve;
- Periodic slurry seals all airfield pavements; and

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TABLE 6-1:
20-YEAR CAPITAL IMPROVEMENT PROGRAM
2004 TO 2024

Project	Qty.	Unit	Unit $	Total Cost*	FAA Eligible	Local
Short Term Projects (Years 1-2)						
2009						
Slurry Seal North Parallel Taxiway & Exits	10,800	SY	$3.60	$38,880	$36,936	$1,944
Slurry Seal South Parallel Taxiway & Exits (3)	3,900	SY	$3.60	$14,040	$13,338	$702
Slurry Seal South T-Hangar Taxilanes	7,000	SY	$3.60	$25,200	$23,940	$1,260
Slurry Seal South Tiedown Apron	4,800	SY	$3.60	$17,280	$16,416	$864
Slurry Seal South Apron (west sections & Ag Apron)	3,725	SY	$3.60	$13,410	$12,740	$671
Slurry Seal North Apron	17,110	SY	$3.60	$61,596	$58,516	$3,080
Slurry Seal NW T-Hangar Taxilanes & Hangar Apron	9,520	SY	$3.60	$34,272	$32,558	$1,714
2010						
Airport Fencing- North Section (w/ 2 vehicle gates)	7,150	LF	$18.00	$143,700	$136,515	$7,185
Project	**Qty.**	**Unit**	**Unit $**	**Total Cost***	**FAA Eligible**	**Local**
Long Term Projects (Years 3 - 20)						
Relocate North Parallel Taxiway - Phase I (2,500 x25') w/ B-II Separation	6,940	SY	$30.00	$208,200	$187,380	$20,820
Runway 7/25 Shift (550' East) w/ North P.Txy. & AC Hold Area	7,000	SY	$30.00	$210,000	$189,000	$21,000
Overlay Runway 7/25 (reconfig.'d 2,500' west section)	20,830	SY	$12.00	$249,960	$224,964	$24,996
Demo West End Rwy/Txy Pavement	8,900	SY	$2.00	$17,800	$16,020	$1,780
REIL (Replacement Rwy 7)	1	ea	$25,000	$25,000	$22,500	$2,500
Northwest Taxiway (overlay & new construction)	1,250	SY	$18.00	$22,500	$20,250	$2,250
T-Hangar (8/10-unit)	1	ea	$240,000	$240,000	$0	$240,000
North Hangar Taxiway/Taxilane - Phase I	1,530	SY	$30.00	$45,900	$41,310	$4,590
Slurry Seal Runway 7/25; Basic Rwy Marking (2010)	25,330	SY	$3.60	$101,188	$91,069	$10,119
Slurry Seal North Parallel Taxiway & Exits (2013)	10,800	SY	$3.60	$38,880	$34,992	$3,888
Slurry Seal South Parallel Taxiway & Exits (2013)	4,000	SY	$3.60	$14,400	$12,960	$1,440
Slurry Seal South T-Hangar Taxilanes (2013)	7,000	SY	$3.60	$25,200	$22,680	$2,520
Slurry Seal South Tiedown Apron (2013)	4,800	SY	$3.60	$17,280	$15,552	$1,728
Slurry Seal South Apron (west sections & Ag Apron) (2013)	3,725	SY	$3.60	$13,410	$12,069	$1,341
Slurry Seal North Apron (2013)	16,300	SY	$3.60	$58,680	$52,812	$5,868

Slurry Seal NW T-Hangar Taxilane & Hangar Apron (2013)	11,820	SY	$3.60	$42,552	$38,297	$4,255
North Apron Expansion (GA Tiedowns)	4,440	SY	$30.00	$133,200	$119,880	$13,320
New GA Terminal/FBO Building (north apron)	1,200	SF	$100.00	$120,000	$0	$120,000
Relocate Fuel Storage	1	LS	$25,000	$25,000	$22,500	$2,500
Construct/Reconstruct South Parallel Taxiway (west section)	1,530	SY	$26.00	$39,780	$35,802	$3,978
South Parallel Taxiway Connectors (2)	1,200	SY	$30.00	$36,000	$32,400	$3,600
N Hangar Area - Property Acquisition (AD Zoning)	6.22	acres	$50,000	$311,000	$279,900	$31,100
NE Airport Property Acquisition (EFU Zoning)	7.58	acres	$10,000	$75,800	$68,220	$7,580
North Hangar Taxiway/Taxilane - Phase II	3,470	SY	$30.00	$104,100	$93,690	$10,410
Slurry Seal N. Hangar Taxiway/Taxilane - Phase I	1,530	SY	$3.60	$5,508	$4,957	$551
Slurry Seal Runway 7/25; NPI Rwy Marking (2016)	25,330	SY	$3.60	$111,188	$100,069	$11,119
Slurry Seal North Parallel Taxiway & Exits (2019)	10,800	SY	$3.60	$38,880	$34,992	$3,888
Slurry Seal South Parallel Taxiway & Exits (2019)	3,900	SY	$3.60	$14,040	$12,636	$1,404
Slurry Seal South T-Hangar Taxilanes (2019)	7,000	SY	$3.60	$25,200	$22,680	$2,520
Overlay North Aircraft Apron ; Tiedown marking	16,300	SY	$12.00	$205,600	$185,040	$20,560
Overlay South Aircraft Apron; Tiedown marking	4,800	SY	$12.00	$63,600	$57,240	$6,360
Slurry Seal NW T-Hangar Taxilanes & Hangar Apron (2019)	11,820	SY	$3.60	$42,552	$38,297	$4,255
North Hangar Taxiway/Taxilane - Phase III	1,600	SY	$30.00	$48,000	$43,200	$4,800
SE Airport Property Acquisition (Residential Zoning) **	2.68	acres	$250,000	$670,000	$603,000	$67,000
Slurry Seal North T-Hangar Taxilanes	10,650	SY	$3.60	$38,340	$34,506	$3,834
Slurry Seal South T-Hangar Taxilanes	5,300	SY	$3.60	$19,080	$17,172	$1,908
Slurry Seal N. Hangar Taxiway/Taxilane - Phase II	3,470	SY	$3.60	$12,492	$11,243	$1,249
Southwest Taxiway (new construction & overlay)	2,500	SY	$18.00	$45,000	$40,500	$4,500
Overlay South Parallel Taxiway (east section)	2,800	SY	$12.00	$33,600	$30,240	$3,360
Overlay S. T-Hangar Taxilanes	5,300	SY	$12.00	$63,600	$57,240	$6,360
Slurry Seal Runway 7/25; NPI Rwy Marking (2022)	25,330	SY	$3.60	$111,188	$100,069	$11,119

** Project costs include 30% engineering and contingency.*
*** Land purchase may require purchase of residential structures on some lots; seller may require purchase of entire parcel.*

FINANCING OF DEVELOPMENT PROGRAM

Federal Grants

A primary source of potential funding identified in this plan is the Federal Airport Improvement Program (AIP). As proposed, approximately 84 percent of the airport's 20-year CIP will be eligible for federal funding. Funds from this program are derived from the Aviation Trust Fund, which is the depository for all federal aviation taxes collected on such items as airline tickets, aviation fuel, lubricants, tires, aircraft registrations, and other aviation-related fees. These funds are distributed under appropriations set by Congress to all airports in the United States that have certified eligibility. The funds are distributed through grants administered by the Federal Aviation Administration (FAA).

Under current guidelines, the airport sponsor receives 95 percent FAA participation on eligible projects. According to FAA guidelines, Ken Jernstedt Airfield is eligible under AIP to receive discretionary grants and general aviation entitlement grants. Under the current authorization, the airport may receive up to $150,000 per year in the GA entitlement grants. The future availability of the GA non-primary entitlement funding is dependent on congressional reauthorization and may change during the planning period. However, based on current legislation, these grants have become a very significant source of FAA funding for general aviation airports. Airports may currently combine up to four years of GA entitlement funding for projects. Discretionary grants are also available to fund larger projects that require additional funding.

The constraints of AIP funding availability will dictate in large part, the actual schedule for completing airport improvement projects through the planning period. As a result, some projects included in the twenty-year CIP may be deferred beyond the twenty-year time frame.

Based on the limitations of the current AIP legislation, the level of FAA funding for eligible projects is estimated at the historic 90% level through the end of the 20-year planning period.

State Funding

The Oregon Department of Aviation (ODA) manages a pavement maintenance funding program to enable regularly-scheduled investment in airfield pavements. The program funds pavement

maintenance and associated improvements (crack filling, repair, sealcoats, etc.), which have not traditionally been eligible for FAA funding. The PMMP may also be expanded to include pavement overlays. ODA also provides limited funding assistance through its Financial Assistance to Municipalities (FAM) grant program. FAM grants are available for amounts up to $25,000 per year, with varying levels of local match required.

Financing the Local Share of Capital Improvements

As currently defined, the locally funded portion of the CIP is approximately 19 percent. For local airport sponsors, one of the most challenging aspects of financial planning is generating enough revenue to match available state or federal grants for large projects. As noted earlier, FAA AIP grants usually represent the single largest source of funding for major capital projects. However, the local match level for AIP grants was reduced to 5 percent in the current legislation.

As currently defined, the local share for projects included in the twenty-year planning period is estimated to be just over $1.0 million, which includes the local match for AIP-funded projects. Nearly 60 percent of the projected local share of the 20-year CIP consists of hangar construction and a new FBO building. Private funding of T-hangar construction may also be considered if adequate airport funding is not available.

CHAPTER SEVEN
ENVIRONMENTAL CHECKLIST

INTRODUCTION

The purpose of the Environmental Checklist is to identify any physical, social and environmental conditions of record, which may affect the ability to undertake future improvements at Ken Jernstedt Airfield. In comparison to an Environmental Assessment (EA) or Environmental Impact Statement (EIS), the project scope for this review is limited and focuses on gathering and summarizing information of record from the applicable local, state and federal sources pertaining to the existing conditions of the subject site and its environs. The scope of the review research does not involve extensive professional interpretation of the information, in-depth analyses, or the more comprehensive follow-up correspondence and inquiries with affected agencies and persons that is normally associated with an EA or EIS.

All research activities, including correspondence, data collection and documentation, proceeded under the provisions of FAA Order 5050.4A, The Airport Environmental Handbook, which is intended to implement the requirements of Sections 1505.1 and 1507.3 of the National Environmental Policy Act (NEPA). This report briefly addresses each potential impact category identified by Order 5050.4A as to be investigated under the EIS or EA processes, and is comprised of a narrative and table summarizing the consultant's findings under each investigation heading or potential impact category. In instances where a particular potential environmental impact type does not appear to exist or apply to the subject project, the table is noted accordingly.

Included below is a brief summary of the impact categories in which potentially significant impacts were identified, or appear to be possible, and where notable ecological or social conditions appear pertinent to the future development of this facility.

The airport is located in northern Hood River County, approximately one and one half miles south of the City of Hood River's Urban Growth Boundary (UGB). The site is subject to Hood

River County planning and zoning regulations, and is zoned Hood River County Airport Development (AD). This zoning designation permits aviation and related activities outright. It is recommended that any additional lands which are not currently zoned AD, but which are anticipated to be developed or utilized in the future for aviation should also be zoned AD. This does not apply to Port-owned properties east of Orchard Road which are currently zoned EFU. ~~would apply to the airport-owned parcel which is located east of Orchard Road, as well as any other property which may be planned for airport-related development or uses and is not currently zoned appropriately.~~

Land uses surrounding the Ken Jernstedt Airfield are predominantly single family residential and orchard lands. Hood River County Rural Residential zoning in the vicinity carries ~~½ acre to~~ a 2-acre minimum parcel size requirements and the neighboring orchards are zoned Exclusive Farm Use (EFU). A restaurant is located in the runway protection zone (RPZ) of Runway 7 and is strongly recommended for relocation. This represents the single most significant concern relative to the compatibility of neighboring land uses with the airport. The RPZ of any runway should be free of any obstructions and/or inhabitable structures. Please see the Social Impacts section of this chapter, following this discussion of issues pertaining to compatible land uses. Land uses and zoning immediately abutting the airport are described in **Table 7-1**.

~~In addition to the above safety consideration, the County should consider amending the Zone Map with respect to Tax lot 1600 of T.2N., R.10E., Section 11B. That parcel is partially developed in private airplane hangars, and is zoned AD, except for the northeasterly corner which has frontage upon Barrett Drive / Oregon State Highway 281. That portion is zoned Rural Residential, two-acre minimum, according to the zone map provided by County Planning personnel. This restricts development potential of the site for aviation related activities, and may limit opportunities for easy vehicular access between the existing hangars and Barrett Drive. This 2+ acre tract has physical frontage on the airport's north access road which connects to State Highway 281 which may increase the attractiveness and appropriateness of some type of aviation related zoning and land use at this site.~~

TABLE 7-1
SUMMARY OF LAND USE AND ZONING
IN VICINITY OF AIRPORT

Land Use	Zoning
Airport Site:	Hood River Airport Development (AD)
North: Rural Residential, Vacant, Off-Airport Aviation Development (hangars) Orchard Land Oregon State Highway 281	Hood River Rural Residential, Two Acre Minimum (RR-1*) Limited County Commercial, Industrial and AD Zoning Hood River County Exclusive Farm Use (EFU)
South: Airport Road, Rural Residential and Resource Related Dwellings Orchards	EFU, RR-1
East: Orchard Road Orchard Land Resource Related Dwellings	EFU
West: Twin Peaks Restaurant Rural Residential, Agriculture, Orchards	EFU, RR-2 ½, RR-1

* We note that the Zone Title does not coincide with the minimum lot size due to changes in standards since the time of the Zone designation's conception and titling.

The Hood River Transfer Station is a solid waste disposal / transfer site, located approximately 2/3 of a mile north of the runway, which reportedly attracts some birds. There are also reports of birds sometimes being attracted to the southeasterly corner of the airport property, where irrigation often results in a wet surface area. No reports of bird strike incidents in the vicinity of the airport have been received by the consultant as of this writing.

Oregon Revised Statutes (ORS) Chapter 836.600 through 836.630 addresses the appropriate zoning and protection of Oregon's airports and their surroundings. Under the statute, height restrictive zoning and, to some extent, use-restrictive zoning, are indicated as necessary components affecting land uses in the immediate vicinity of a public airport. An Airport Overlay Zone, which protects necessary airspace and limits incompatible uses in proximity to an airfield, is the primary means of ensuring the compatibility of surrounding land uses with operations of a general aviation airport.

Hood River County planners provided mapping of Airport Hazard and Overlay Zones affecting this site; however, the jurisdiction has not formally adopted the drawings, and the County's Airport Hazard Zone as indicated on the County Assessor's maps provided by the planner does not constitute compliance with FAA regulations and / or ORS Ch. 836.600 *et. seq.* In addition to ensuring quality and cohesive mapping of all of the areas affected by the required Airport Overlay and related safety Zones, in the County jurisdiction, the existing County zoning and transportation plan languages must also be reviewed and amended to ensure full compliance with ORS Chapter 836.600-630.

Among the provisions of this statute are the following (Please note: This is not intended to be a comprehensive summation of this legislation. Additional requirements may apply to this site under the cited or related statutes):

OAR 660-13-160(1) Requires jurisdictions to update Plan, land use regulations at Periodic Review to conform with provisions of this statute, or at next update of Transportation System Plan, per OAR 660-12-0015(4) and OAR 660-12-0045(2)(c)&(d). If more than one local government is affected by the Airport Safety Overlay (see below), a Coordinated Work Program for all jurisdictions is required, concurrent with timing of Periodic Review (or TSP update) for the jurisdiction having the most land area devoted to the airport use(s). The r County Comprehensive Plans and Transportation Plans, Zoning Ordinances, and mapping should be amended no later than the affected jurisdiction's next Periodic Review work cycles, to ensure compliance with these provisions. An Inter-Governmental Agreement is one potential mechanism for complying with the requirement for a "coordinated work program" between concerned jurisdictions under this section.

(8) Adopt map delineating Safety Zones, compatibility zones, and existing noise impact boundaries identified by OAR 340-35. See also OAR 660-13-0070(1) and Exhibits 1 & 2 to Division 13. In addition to the fact that it has not been adopted by the local jurisdictions, the mapping provided the consultant does not fully demonstrate conformance with these requirements, as discussed above. For example, it does not appear that "compatibility zones" required under the cited statute exist currently in either affected jurisdiction.

This Airport ~~Layout~~Master Plan Update Report will provide the information and graphics necessary to incorporate into the County zoning data and mapping files in order to establish compliance with the requirement for mapping "noise impact boundaries." Additional analyses, safety zone designations and mapping may likely be necessary to establish full conformity with this section.

OAR 660-13-0070(2): Review future development in Airport Safety Overlay for compliance with maximum height limitations. The consultant which created Ken Jernstedt Airfield Airport Layout Plan Update 2004-2024, Century West Engineering, recommended that the County adopt height limitations, and other Airport Safety Overlay zoning implementation language, consistent with this and other applicable state laws and federal regulations. In addition to Airport Hazard Overlay requirements described above, OAR 660-13-0040(1)-(3) also requires that jurisdictions adopt a map of existing and planned airport improvements.

Century West Engineering recommended that a general review be performed of all County Ordinance and Comprehensive Plan language, and mapping pertaining to the subject airport and its immediate environs, to compare those with the requirements of ORS Chapter 836.600-630 for airport compatibility. Any amendments to the County's codes, Plans and or maps necessary in order to demonstrate compliance should be affected, and it is further recommended that this Airport ~~Layout~~Master Plan be adopted as part of the Transportation Elements of the Hood River County Comprehensive Plan. Century West Engineering recommended that the TSP formally reflect the recommendations of the Airport ~~Layout~~Master Plan Report, particularly as related to changes in surface access in the vicinity of the airport (Orchard Road).

Ken Jernstedt Airfield contributes to the economic vitality of Hood River County and the nearby City of Hood River. In addition to at least one business which relies heavily on the airport, other users include glider pilots and occasional en-route aircraft seeking a safe haven from adverse weather conditions associated with the Columbia River Gorge. Improvements to the safety, longevity and accessibility of the airport's amenities may be expected to accrue positive social and socioeconomic impacts in the region. Site security and signage, and improvement of pilots' visibility through the enforcement of a prohibition on on-site burning are among aspects of the preferred alternative which may be considered as socially beneficial.

When a business would be relocated by a proposed airport improvement project, FAA Order 5050.4A states that the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 require the owner be offered assistance in finding a location and reestablishing the business.

If the business relocation would result in a severe economic hardship on the community, additional analysis is required in an environmental impact statement. It is not clear whether or not a recommendation for relocation of an existing business from an existing RPZ, where existing regulation and no development, per se, would relocate the business, prompt this requirement. It is recommended that the sponsor discuss this matter with a Federal Aviation

Administration (FAA) official. No existing residences would be displaced under the preferred alternative. As described above, any improvement project at this facility would be expected to have positive social and socioeconomic impacts. Implementation of the preferred alternative will result in the creation of jobs, and improvements to the safety and longevity of the airport facilities.

NOISE EVALUATION

Noise is defined as unwanted sound. However, sound is measurable, whereas noise is subjective. The relationship between measurable sound and human irritation is the key to understanding aircraft noise impact. A rating scale has been devised to relate sound to the sensitivity of the human ear. The A-weighted decibel scale (dBA) is measured on a "log" scale, by which is meant that for each increase in sound energy level by a factor of 10, there is a designated increase of 1 dBA. This system of measurement is used because the human ear functions over such an enormous range of sound energy impacts. At a psychological level, there is a rule of thumb that the human ear often "hears" an increase of 10 decibels as equivalent to a "doubling" of sound.

The challenge to evaluating noise impact lies in determining what amount and what kind of sound constitutes noise. The vast majority of people exposed to aircraft noise are not in danger of direct physical harm. However, much research on the effects of noise has led to several generally accepted conclusions:

- The effects of sound are cumulative; therefore, the duration of exposure must be included in any evaluation of noise.
- Noise can interfere with outdoor activities and other communication.
- Noise can disturb sleep, TV/radio listening, and relaxation.
- When community noise levels have reached sufficient intensity, community wide objection to the noise will likely occur.

Research has also found that individual responses to noise are difficult to predict.[17] Some people are annoyed by perceptible noise events, while others show little concern over the most disruptive events. However, it is possible to predict the responses of large groups of people (i.e.,

[17] Beranek, Leo, *Noise and Vibration Control*, McGraw-Hill, 1971, pages ix-x.

communities). Consequently, community response, rather than individual response, has emerged as the prime index of aircraft noise measurement.

On the basis of the findings described above, a methodology has been devised to relate measurable sound from a variety of sources to community response. It has been termed "Day-Night Average Sound Level" (DNL) and has been adopted by the U. S. Environmental Protection Agency (EPA), the Department of Housing and Urban Development (HUD), and the Federal Aviation Administration (FAA) for use in evaluating noise impacts. In a general sense, it is the yearly average of aircraft-created noise for a specific location (i.e., runway), but includes a calculation penalty for each night flight to account for increased sensitivity to noise during normal "hours of rest".

The basic unit in the computation of DNL is the sound exposure level (SEL). An SEL is computed by mathematically summing the dBA level for each second during which a noise event occurs. For example, the noise level of an aircraft might be recorded as it approaches, passes overhead, and then departs. The recorded noise level of each second of the noise event is then added logarithmically to compute the SEL. To provide a penalty for nighttime flights (considered to be between 10 PM and 7 AM), 10 dBA is added to each nighttime dBA measurement, second by second. Due to the mathematics of logarithms, this calculation penalty is equivalent to 10-day flights for each night flight.[18]

A DNL level is approximately equal to the average dBA level during a 24-hour period with a "weighing" added for nighttime noise events. The main advantage of DNL is that it provides a common measure for a variety of different noise environments. The same DNL level can describe an area with very few high noise events as well as an area with many low level events.

[18] Where Leq ("Equivalent Sound Level") is the same measure as DNL without the night penalty incorporated, this can be shown through the mathematical relationship of:

$$Leq_d = 10 \log \left(\frac{N_d \times 10^{(SEL/10)}}{86{,}400} \right) \qquad Leq_n = 10 \log \left(\frac{N_n \times 10^{((SEL+10)/10)}}{86{,}400} \right)$$

If SEL equals the same measured sound exposure level for each computation, and if N_d = 10 daytime flights, and N_n = 1 night-time flight, then use of a calculator shows that for any SEL value inserted, $Leq_d = Leq_n$.

Noise Modeling and Contour Criteria

DNL levels are typically depicted as contours. Contours are an interpolation of noise levels drawn to connect all points of a constant level, which are derived from information processed by the FAA-approved computer noise model. They appear similar to topographical contours and are superimposed on a map of the airport and its surrounding area. It is this map of noise levels drawn about an airport, which is used to predict community response to the noise from aircraft using that airport. DNL mapping is best used for comparative purposes, rather than for providing absolute values. That is, valid comparisons can be made between scenarios as long as consistent assumptions and basic data are used for all calculations. It should be noted that a line drawn on a map by a computer does not imply that a particular noise condition exists on one side of the line and not on the other. These calculations can only be used for comparing average noise impacts, not precisely defining them relative to a specific location at a specific time.

The noise contours depicted on the Airport Land Use Plan drawing in Chapter Five are plotted in 5 DNL increments starting at 55 DNL based on the 2022 forecast activity levels. The size and shape of the contours is consistent with the airport's runway utilization and overall volume of aircraft traffic. Runway 25 is the primary landing and departure runway, which results in slightly larger contours extending outward. The contours beyond the end of Runway 7 extend over a longer distance, reflecting the flatter climb profiles of aircraft takeoff. As depicted on the Airport ~~Layout~~Master Plan, the future runway configuration is shifted 550 feet east of its current location to improve roadway and obstruction clearance. The 2022 noise contours were developed based on this planned runway configuration.

The 2022 55 DNL noise contour extends approximately 3,600 feet beyond the future end of Runway 7 and approximately 3,200 feet beyond the future end of Runway 25. The areas located beyond the runway ends are predominantly agricultural and sparsely populated lands. The areas east of the runway are extensively developed in fruit orchards; the area west of the runway contains some orchards, but also includes open fields and low-density residential development.

Portions of the 2022 60 DNL contour extend beyond airport property beyond both runway ends. At the Runway 7 end, the 60 DNL contour, extends approximately 600 feet west of Highway 281 (Tucker Road). The Twin Peaks restaurant is located within the 60 DNL contour. At the Runway 25 end, the 60 DNL contour extends approximately 1,500 feet east of Orchard Road, largely over airport-owned lands (approximately 150 feet of 2022 60 DNL contour extends beyond the east airport boundary). Portions of the 60 DNL contour also extend along the sides of the runway and relatively narrow airport property area, particularly at the east end of the runway.

The 60 DNL contour extends outward nearly 600 feet from the sides of the runway, near the east end, over adjacent residential and agricultural areas. The nearest residential area, which is located immediately south of the end of Runway 25, is located entirely within the 60 (and higher) DNL contour.

The 2022 65 DNL noise contours are contained almost entirely within airport property, with the exception of areas located near the end of Runway 25 (north and south sides). As noted above, a residential development (nine lots) is located adjacent to the southeast corner of the airport. Some of these lots have direct airfield access and at least one hangar is located off airport. The 2022 65 DNL extends over an unpopulated orchard area near the north end of Runway 25. The planned easterly shift of the runway results in the 65 DNL contour remaining entirely within airport property beyond the end of Runway 7 (approximately 800 feet east of Highway 281/Tucker Road).

The 2022 70 DNL noise contours are generally contained within airport property boundaries, although a very small portion extends beyond the airport near the end of Runway 25. Although the residential area located along the southeast corner of the airport is partially located within the 2022 70 DNL contour, most of the residences are located on the southern half of the lots, in the area of 65 or 60 DNL contour. Residential development within the 65 DNL and higher noise contour is not recommended and should be discouraged. The Airport ~~Layout~~Master Plan identifies property acquisition in this area to provide standard runway clearances. The Port of Hood River has indicated an interest in acquiring these properties in cases where willing sellers exist. In addition to improving runway clearances, acquiring the property would help to ensure land use compatibility by preventing construction of additional residential development in areas of greater noise exposure.

With the exception of the residential area located along the southeast corner of the airport, the sparsely developed land uses in the vicinity of the airport suggest that noise compatibility will not be a significant issue during the planning period. However, since perceived noise impacts are not limited to areas with significant levels of noise, care should be taken by local land use authorities to avoid creating potential long-term land use incompatibilities in the vicinity of the airport by permitting development of incompatible land uses such as residential subdivisions within areas of moderate or higher noise exposure. Under federal guidelines, all land uses, including residential, are considered compatible with noise exposure levels of 65DNL and lower. However, airport management should actively encourage local and transient pilots to avoid direct overflights of residential or other known noise-sensitive areas whenever possible.

Noise and Land-Use Compatibility Criteria

Federal regulatory agencies of government have adopted standards and suggested guidelines relating DNL to compatible land uses. Most of the noise and land-use compatibility guidelines strongly support the concept that significant annoyance from aircraft noise levels does not occur outside a 65 DNL noise contour. Federal agencies supporting this concept include the Environmental Protection Agency, Department of Housing and Urban Development, and the Federal Aviation Administration.

Part 150, Airport Noise Compatibility Planning, of the Federal Aviation Regulations, provides guidance for land-use compatibility around airports. **Table 7-2** presents these guidelines. Compatibility or non-compatibility of land use is determined by comparing the noise contours with existing and potential land uses. Based on federal standards, all types of land uses are compatible in areas below 65 DNL. Generally, residential and some public uses are not compatible within the 65-70 DNL, and above. As noted in **Table 7-2**, some degree of noise level reduction (NLR) from outdoor to indoor environments may be required for specific land uses located within higher-level noise contours. Land uses such as commercial, manufacturing, some recreational uses, and agriculture are compatible within 65-70 DNL contours.

TABLE 7-2
LAND-USE COMPATIBILITY WITH DNL

Land Use	Yearly Day-Night Average Sound Level (DNL) In Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes & transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums, and Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, Business and Professional	Y	Y	25	30	N	N
Wholesale and Retail—Building Materials, Hardware and Farm Equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail Trade–General	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing General	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (except livestock) and Forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock Farming and Breeding	Y	Y(6)	Y(7)	N	N	N
Mining and Fishing, Resource Production and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas, Spectator Sports	Y	Y(5)	Y(5)	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusements, Parks, Resorts and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables and Water Recreation	Y	Y	25	30	N	N

Y (Yes)	Land-use and related structures compatible without restrictions.
N (No)	Land-use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into design and construction of the structure.

25, 30 or 35	Land uses and structures generally compatible; measures to achieve NLR or 25, 30, or 35 dB must be incorporated into design and construction of the structure.

NOTES:

1. Where the community determines that residential uses must be allowed, measures to achieve outdoor to indoor Noise Levels Reduction (NLR) of at least 25dB and 30dB should be incorporated into building codes and be considered in individual approvals. *Normal residential construction can be expected to provide a NLR of 20 dB; thus,* the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received office areas, noise sensitive areas, or where the normal noise level is low.
5. Land-use compatible, provided special sound reinforcement systems are installed.
6. Residential buildings require an NLR of 25.
7. Residential buildings require an NLR of 30.
8. Residential buildings not permitted.

SOURCE: Federal Aviation Regulations, Part 150, Airport Noise Compatibility Planning, dated January 18, 1985.

OTHER ENVIRONMENTAL CONSIDERATIONS

A representative of the Oregon Department of Environmental Quality stated that the local area is "in attainment for" (meaning 'in compliance with') applicable air quality standards for all pollutants. No significant increase over existing levels of air and/or surface traffic is anticipated under the Preferred Alternative. In the event that significant increases in volume, of either automobile trips or aircraft trips, are anticipated in conjunction with future improvements, DEQ requests close coordination to ensure that the Columbia River Gorge is not unduly polluted with air emissions.

Water quality impacts are always a concern with any construction project, and especially when considering uses and sites where potentially hazardous materials, such as aviation fuel, fire retardants, de-icing agents, and/or agricultural chemicals are involved. The Oregon Department of Environmental Quality (DEQ) routinely recommends for airport projects that, at a minimum, investigations be performed which document past agricultural spraying practices, aviation fuel storage facilities, and other potential sources for adverse water quality impacts associated with past, present and potential future activities at the site. Agricultural and/or forestry-related

chemical operators and airport sponsors must ensure that wash down, collection, treatment and storage areas and devices comply with Oregon Administrative Rule 340-109 and all applicable environmental standards. In this case, there is the potential that past pesticide application activities may have resulted in a contamination event which warrants remediation, according to Mr. Brett McKnight of DEQ. Mr. Dick Nichols of the DEQ stated in telephone communication with the consultant that if any wastewater is currently being distributed to a septic drain field, Oregon Administrative Rule (OAR) 340-044 may apply and may require an Underground Injection Control (UIC) permit from DEQ. In addition to the requirement for securing wastewater permits for washing, maintenance, or deicing areas, the sponsor must secure a National Discharge Elimination System (NPDES) Permit for any project affecting one acre or more of land and discharging storm water runoff to surface waters.

The Port has completed removal and site remediation on two underground fuel storage tanks on the airport (north apron and AG hangar).

DEQ, as well as the Hood River County Soil and Water Conservation District (SWCD), are particularly interested in protecting the Cedar Creek watershed, which drains the subject site and empties into the nearby Hood River, from adverse impacts relative to water quality. Storm water removal systems should be designed so that water infiltrates into the ground as opposed to running off to surface waters.

Mr. Larry Toll, the Oregon State Water Resources Department's Water Master for this region, cautioned that the airport has water rights which may be lost, but could conceivably be continued to be charged for by the irrigation district, if impervious cover is placed atop the subject acreage. For example, Mr. Toll stated that grass areas between the runways are currently subject to water rights which could be effectively lost if that area is developed. Any new wells on the site must have corresponding water rights. Mr. Toll was not aware whether the Ice Fountain Water District serves the site or has capacity to meet long term plans of the airport and related uses. If any water intensive use desired to locate on the site, the careful retention at this juncture of the Port's existing water rights could prove to have been a significant and wise consideration.

During construction, adherence to the applicable local, state, and federal regulations and standards; observance of DEQ's "Best Management Practices for Storm Water Discharges Associated with Construction Activities" (2000); and compliance with the guidelines of FAA Advisory Circular 150/5370-10, are all advised to further protect against adverse water quality impacts.

As of April 15, 2001, the Oregon State Historic Preservation Office, SHPO, requires considerable documentation be provided by any party inquiring about the existence of significant cultural resources in a given location. The new procedure requires such information as architectural classification, window and roof types of all structures within the study area; if they may be considered as a resource; dates of any alterations; and "Significance Statements" for all types of resources. SHPO has provided specific forms, "Section 106 (of the National Historic Preservation Act) Documentation Forms" and "Section 106 Level of Effect Forms", for use in making such a request. This level of investigation surpasses the scope of this ALP Update Report.

During preliminary stages of this study process, the consultant forwarded letters to representatives of the Yakama Nation; Confederated Tribes of Warm Springs; Confederated Tribes of Umatilla; and the Nez Perce Tribe. No response was received as of this writing.

If any historic or cultural resources are discovered during construction, the Port will be responsible for immediately notifying SHPO, the Tribes, and the other appropriate authorities. Work would be required to be halted until the physical extent and relative cultural significance of the resource(s) could be identified, and a protection plan developed and implemented, if warranted.

Based on written comments provided by a representative of the Oregon Department of Fish and Wildlife (ODFW), Mid-Columbia District Office recommends protection of surface waters from adverse impacts of development, including but not limited to silting and sedimentation and obtaining a comprehensive inventory of the storage of hazardous waste materials on-site. A number of fish species associated with the nearby Hood River are afforded federal protection under the Endangered Species Act (ESA), and ODFW is concerned that water quality impacts might prove detrimental to those, as well as other less protected fish species. Please see the sections of this report regarding water quality and construction impacts for detailed recommendations for protecting against potential adverse water quality impacts. The consultant recommends that the Port develop and distribute the inventory of hazardous materials storage to ODFW Mid-Columbia District Office and Mr. McKnight of the Oregon DEQ.

A search of the database of the Oregon Natural Heritage Information Center, which was recently transferred to Oregon State University from the Nature Conservancy, revealed one noteworthy species of reptile; one bird; eight species of fish; one amphibian and six species of flora which are species of interest to the State of Oregon and which may occur in the project vicinity. Among those are the Oregon Slender Salamander, Batrachoseps wrighti, a species of concern to the US

Fish and Wildlife Service and "sensitive-undetermined" by the State of Oregon; the Harlequin Duck, or *Histrionicus histrionicus, which is provided the same Federal and State protection status* as the salamander, above; three species of salmon (Coho, two Chinook) which are listed as Threatened by the USFWS; the Coastal Cutthroat Trout, Oncorhynchus clarki pop 2, an Oregon State sensitive-critical species; summer and winter runs of Steelhead Trout, Oncorhynchus mykiss pop 27, which are Federally Threatened and State sensitive-critical; and the Western Pond Turtle, Clemmy's marmorata marmorata, Federally a species of concern and listed with the State of Oregon as sensitive-critical. Fauna of note included the Oregon Daisy; Hood River Milk Vetch; Violet Suksdorfia; and Howell's Bentgrass. The Natural Heritage Program recommends an inventory be conducted at the site, during the appropriate season, to assure there are no important biotic resources present in the project area.

In addition to some of the species discussed above, the US Department of Interior's Fish and Wildlife Service (USFWS) lists one bird and three fish species as "Threatened" Species which may be affected by an airport improvement project at this location. The Bald Eagle, or Haliaeetus leucocephalus, and the Lower Columbia Steelhead Trout, Oncorhynchus mykiss; Lower Columbia Chinook Salmon, Oncorhynchus tshawytscha; and Columbia River Bull Trout, Salvelinus confluentus, are reported within proximity to the project site. One bird, amphibian, and fish species are each also indicated as Candidate Species for some type of Federal Protection listing, but are "not yet the subject of a proposed rule". These include the Yellow-billed cuckoo, Coccyzus amreicanus; the Oregon Spotted Frog, Rana pretiosa; and Lower Columbia Coho Salmon, or Oncorhynchus kisutch.

Among Species of Concern which the USFWS indicates may occur within the project's vicinity are seven varieties of bat, including the Pale western big-eared bat, Corynorhinus (=Plecotus) townsendii townsendii; the Silver-haired bat, or Lasionycteris noctavigans; and the Long-legged myotis, Myotis volans. In addition, a duck; woodpecker; the Purple Martin (Progne subis); two other birds; a turtle and lamprey; two aquatic invertebrates; and four species of fauna are also Species of Concern. These are described as "Taxa whose conservation status is of concern to the Service, but for which further information is still needed." The USFWS correspondence states a Biological Assessment is required for "construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2) (c)). For projects other than major construction activities," the USFWS' correspondence continues, "the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species."

According to a review of the US Fish and Wildlife Service's National Wetlands Inventory (NWI), Cedar Creek where it intersects airport property is a Palustrine Emergent, persistent wetland resource which is seasonally flooded. As a safe harbor approach, it is recommended that development generally maintain a minimum of thirty feet setback from this wetland, if feasible. Development activities which would impact a wetland resource must be preceded by any necessary permit(s) from the Oregon Division of State Lands (DSL) and/or US Army Corps of Engineers (ACOE). A wetlands determination can identify whether other jurisdictional wetlands occur on the airport property.

Hood River County planners report no floodplain would be affected by the planned airport improvements. Information provided by the USDA's Natural Resources Conservation Service web site describes the soils on the site as stony, wet, and in some cases subject to erosion.

Soils with Agricultural Capability Classifications ranging from VIIs, indicating severe limitations due to stone content, to IIw, indicating a high productivity potential which is somewhat limited by wetness, were observed on the subject site. Because no federal lands are proposed to be committed or otherwise involved in the Preferred Alternative, the Farmland Protection Policy Act (FPPA) does not apply to this proposal, and no further analysis under this impact category is necessary to demonstrate compliance with NEPA. No conversion of farm land is contemplated under the preferred alternative, although the question of lengthening the runway to the east at some point, thus requiring the closure of Orchard Road and conversion of some acreage of existing orchard land, will likely arise again in future discussions pertaining to airport development.

Silt fences, runoff diversion tactics, and storm water detention are commonly implemented in similar construction projects, and should be utilized for any project on the airport in order to minimize adverse impacts of development related activities. FAA Advisory Circular 150/5370-10 provides additional measures which are advised to be implemented to minimize adverse impacts of airport construction activities. In addition, DEQ's 2000 publication "Best Management Practices for Storm Water Discharges Associated with Construction Activities" should be followed during all phases of the project. Please see the above related discussion regarding water quality impacts.

A summary of the environmental checklist items and preliminary findings is presented in **Table 7-3**.

TABLE 7-3
KEN JERNSTEDT AIRFIELD
ENVIRONMENTAL CHECKLIST

Potential Impact Category	Existing Conditions / Comments	Further Action Needed?
Noise	Residential areas located southeast of airport partially located within 70 and 65 DNL contour (2022). Property acquisition recommended to provide clear primary surface and other runway clearances will also reduce exposure to higher noise levels off airport property.	POSSIBLE
Compatible Land Use	Relocate restaurant in Runway 7 RPZ. Local governments must adopt and Map Airport Overlay Zoning, planned improvements, and ensure consistency of zoning provisions with State law. Future uses in the vicinity must have the burden of demonstrating compatibility with aviation and compliance with ORS Ch. 836.600-630.	YES
Social / Socio-Economic	Expected to be positive, as is typical with airport projects. Observe requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 in relocating existing business from RPZ Zone.	YES
Water Quallty	Any wastewater distributed to a septic drain field may require application for an Underground Injection Control (UIC) permit from DEQ. DEQ requires surface storm water runoff be contained, treated, prior to discharge to any natural drainage system, water body. NPDES Permit; maintaining maximum physical separation between construction and sensitive waterways, adherence to FAA Advisory Circular 150/5370-10 required. Document to DEQ any chemicals stored on site. For fuel or agricultural chemical storage, see Water Quality section of this Environmental Checklist, observe compliance with DEQ requirements. Cedar Creek water quality is of concern.	YES
Special Land Uses, DOT Act Section 4(f)	No parks, recreation areas, or refuge areas per this section affected.	NO

TABLE 7-3
KEN JERNSTEDT AIRFIELD
ENVIRONMENTAL CHECKLIST

Potential Impact Category	Existing Conditions / Comments	Further Action Needed?
Historic, Architectural, Archaeological, and Cultural Resources	Records no longer provided by SHPO. Significant cultural resources possible on-site. Please see above discussion. Halt construction if resources discovered, notify identified tribes, SHPO of all development plans.	POSSIBLE
Biotic Communities	ODFW concerned primarily with water quality impacts as they relate to the tributary to Hood River, Cedar Creek, which originates on site. See Construction Impacts, Water Quality sections of Environmental Checklist narrative.	YES
Endangered and Threatened Species	Several Threatened, Endangered, and Species of Concern were identified as occurring in vicinity. A Biological Evaluation or Assessment is recommended by USFWS prior to major construction or similar undertakings. Please see narrative.	YES
Wetlands	According to National Wetlands Inventory Maps produced by the USFWS, Cedar Creek is a jurisdictional wetland. Other resources on-site possible. Wetlands Determination / Delineation is recommended.	YES
Floodplain	No flood plain affected by the project.	NO
Shoreline Management	Not Applicable to this facility.	NO
Coastal Barriers	Not Applicable.	NO
Wild and Scenic Rivers	Not Applicable.	NO
Farmland	Public airport improvement projects on private lands are exempt from Farmland Protection Policy Act (FPPA).	NO
Energy Supply and Natural Resources	No adverse impacts anticipated.	NO

TABLE 7-3
KEN JERNSTEDT AIRFIELD
ENVIRONMENTAL CHECKLIST

Potential Impact Category	Existing Conditions / Comments	Further Action Needed?
Light Emissions and Glare	No hazards reported by local planners or operators, upon inquiry. No analysis of existing light emissions which might pose potential hazards to aviation performed.	POSSIBLE
Solid Waste Impacts	Cedar Creek and other surface and ground water systems must be considered and protected from contamination during the handling of waste materials. Development under the Preferred Alternative would not considerably increase production of waste at the facility, except during construction phase.	NO
Construction Impacts	Temporary impacts will accrue during construction phase. Of particular concern is any runoff which might make its way to Hood River via the Cedar Creek tributary. Adherence to the provisions of FAA Advisory Circular 150/5370-10 should preclude foreseeable adverse impacts.	YES

Ken Jernstedt Airfield Airport Master Plan
2009 Update

"Exhibit A"

(Record of the County Planning Commission)
(April 22, 2009)

Hood River County Planning Commission
County Administrative Building
601 State Street
Commissioners Conference Room
April 22, 2009

DRAFT MEETING MINUTES

PRESENT
Chair: Bill Uhlman; Commissioners: Stan Benson, Patrick Moore, Kathie Alley, Carl Perron and Bob Schuppe.
Non voting members of Commission: Will Carey, County Counsel and Mike Benedict, Planning Director.
County Staff: Eric Walker, Principal Planner and Kim Paulk, Office Manager.

A. Call to Order
Chair Uhlman opened the meeting at 7:00 p.m.

B. Meeting Minutes
Commissioner Schuppe moved and Commissioner Benson seconded to approve the meeting minutes of March 25, 2009. A vote was called and the minutes were approved.

C. Director's Report:
Mike Benedict reported that staffing levels remain the same. Mr. Benedict added that staff is working on several enforcements that include, Andy Von Flowtow's operation of an industrial complex on Country Club Road and David Ryan of Ryan's Fruit who has expanded beyond the limits of his original permit and who has failed to meet the original conditions of a subsequent CUP. Mr. Benedict also reported that the Gorge Commission is in the process of making rules on how to regulate the expansion of urban areas within the National Scenic Area. Two options they are looking at are a no net loss approach, which would allow trades between urban areas as long as there is no reduction in NSA designated land, and a regional approach, which would require one urban area to consider the availability of land in other nearby urban areas before being allowed to expand. DLCD is expect to attend the next Gorge Commission meeting to ensure that the proposals being considered do not conflict with Goal 14 requirements for cities having a 20 year supply of land within their urban growth boundaries.

D. Land Use Counsel's Report:
Nothing to report

E. Unscheduled Items:
a. From the General Public: None
b. From Commissioners: None

F. Public Hearing Ken Jernstedt Airport Master Plan 2009 Update:
Chair Uhlman opened the hearing and read the statements required by State Statute describing how the public hearing shall proceed.

Staff Presentation:
Eric Walker, Principal Planner introduced Mike Doke, Port of Hood River, and Scott Keillor of Columbia Planning & Design, who provided the presentation.

Mike Doke, Port of Hood River staff, 1000 East Marina Way, introduced some of his associates who had been assisting him and who were in the audience and available for questions, including Michael McElwee, Executive Director Port of Hood River; Jeremy Young, Chair Airport Advisory Committee/WAAAM Museum Director; and Scott Gifford, the Airport's Fixed Base Operator (FBO). Mr. Doke provided background information regarding the plan, stating that the overall goals of the Airport Master Plan were safety and to ensure that the airport can meet the community's long term needs by planning for future facilities. Mr. Doke stated that the airport was originally owned by Hood River County and was built in the late 1940s. He noted that it came into the Port's ownership in 1976 and the following year the first Airport Master Plan was developed. The last master plan update was made in the 1990s, for the planning period of 1990 to 2010. He explained that one of the main recommendations of the old master plan was to lengthen the runway. However, he emphasized that the 2009 updated plan does not call for a runway extension, but instead, calls for a 550 foot runway shift to the east that would maintain the current 3,040 foot runway length. He explained that this proposal would involve a request to vacate Orchard Road. He explained that by doing this, the runway would move away from Tucker Road (Hwy 281), which is within the runway protection zone and has much more ground traffic than Orchard Road. Mr. Doke also gave a brief outline regarding the type of aircraft they serve. Mr. Doke stated that the Port met with the PC in October and some major land use issues were identified and he has since worked with the FAA to meet the outlined issues. Mr. Doke stated that they have no intention to increase airport traffic or the noise, but that the Port is simply trying to bring the airport up to a standard that meets the size of aircraft it currently serves. He explained that developing the airport to a B-II standard, which is called for in the airport master plan, will allow it to better serve the B-II aircraft currently using the airport in a safer manner. Mr. Doke provided information about the various uses occurring at the existing airport and the services it offers the community. Mr. Doke stated that he has had some discussions with others about providing a separate bike path around the shifted runway. He explained that a separate bike path is not part of the Port's current proposal, but that they were open to the concept realizing, however, that such a proposal includes a number of significant factors that will need to be taken into consideration.

Scott Keillor, Columbia Planning & Design, Inc., provided the PC with a copy of his power point presentation, dated April 15, 2009, and proceeded to give his presentation. He explained that the Airport Master Plan had been was adopted by the FAA, Port of Hood River, and the Airport Advisory Committee in 2004. He indicated that the 2004 Airport Master Plan was updated in 2009 to respond to issues raised by the Planning Commission at their October, 2008 work session. In addition to the revised master plan, Mr. Keillor indicated that a staff report was also prepared, which included, among other things, a traffic analysis to study impact of proposed Orchard Road Vacation; a white paper on the "public good" for Orchard Road Vacation; findings regarding compliance with the Oregon Airport Planning Rule, including a new runway protection zone and noise contour provisions; various zoning ordinance updates to Article 7 (Exclusive Farm Use Zone), Articles 33 (Airport Development Zone), and Article 34 (Airport Height Combining Zone) and various Comprehensive Plan changes to the Policy and Background Documents, as well as to the County Transportation System Plan. Mr. Keillor indicated that the Port of Hood River was requesting that the PC accept the staff recommendation and forward the request to the Board of Commissioners for public hearing.

Mr. Keillor explained the main purposes of the Airport Master Plan, including the following:

1. Safety. He explained that shifting the runway 550' east would take Tucker Road/Highway 281 out of the runway protection zone. He noted that the purpose of relocating the taxiway 35' to the north would be to meet FAA standards for a B-II airport. He also indicated that moving fuel and servicing facilities to the north side of the airport would improve safety by allowing planes to get service without having to cross the runway.

2. Facilities Planning. Mr. Keillor indicated that the master plan addressed the need to replace aging base operation's buildings on Airport Road and relocate them over time to safer locations, as well as to meet FAA and Oregon Department of Aviation guidelines for a B-II type airport (for planes over 12,500 lbs; some such planes now use the airport).
3. Long-Term Viability. Mr. Keillor explained the importance for the airport to operate in a safe manner and that the facility upgrades proposed as part of the master plan will help fulfill this obligation. He emphasized that adoption of the master plan will help ensure consistency with County planning & zoning requirements.

Mr. Keillor indicated that adoption of the airport master plan would cause the imaginary airspace around the airport to automatically shift 550' to the east with the corresponding runway shift and that it would not result in any new obstructions. He noted that the proposed Airport Master Plan would become part of the County's TSP and adoption would ensure consistency with the Oregon Transportation and Airport Planning Rules, including adoption of a runway protection zone and airport noise contours. He indicated that there are two houses east of the airport that would need to be removed before the runway would be allowed to shift as proposed.

Mr. Keillor described some of the various zoning ordinance changes proposed, including the following:

1. Article 7 (EFU zone) – Add a provision indicating that the proposed shift of the runway onto EFU zoned land would require a conditional use permit.
2. Article 33 (AD zone) – Amendments to make allowed uses in the AD zone compatible with those found in the Airport Planning Rule, and adding a 30 foot building setback from Cedar Creek to be consistent with recommendations from the master plan.
3. Article 34 (AH) – Amendments to allow 35 foot high buildings in non-critical airspace areas of the AH zone with FAA notification; Limitations on new water impoundment areas; Addition of new definitions for greater clarification.
4. Article 37 – A new article intended to implement the Noise Contour Overlay, which is required by the Airport Planning Rule. Mr. Keillor explained that this new article with impact only the airport property and 11 parcels immediately southeast of the airport along Orchard Road. He explained that compliance would require new residential improvements to meet upgraded insulation requirements to minimize potential noise impacts associated with the airport.

Mr. Keillor closed his presentation by asking the Planning Commission to recommend to the County Board of Commissioners adoption of the 2009 Airport Master Plan and associated Comprehensive and Zoning Ordinance amendments, as detailed in staff report and associated material.

Chair Uhlman opened up the hearing for public testimony.

G. Public Testimony:

Donald Durr, 1850 Tucker Road, stated that he was not against the airport but was concerned about the vacation of Orchard Road. He had concerns about the increased time it will take to travel down the road and for emergency responders. Mr. Durr asked if anyone has looked into how much longer it would take for a fire truck to get to one of the homes on Orchard Road or Cooper Dam Road? Mike Doke stated that the fire chief did a run through to see how much longer it would take as an emergency responder to Cooper Dam Road and the difference is about 1 minute 40 seconds, although there would be no delay anticipated for first responders. Mr. Durr stated that he thought that a new road was supposed to be put in going down Nunamaker Road to Copper Dam Road and then out onto Orchard Road. Mike Doke stated that that was a part of the 1990 plan, adopted in 1993, but that the Port has

abandoned the new road concept as part of its latest update. Mr. Durr stated he is also concerned about noise & gliders. Mr. Durr added that just the other day a plane came out of the museum to take off and he was standing within 3 feet of his wife and he could not hear what she was saying to him; the noise hurt his ears.

Mr. Durr stated that he was bothered by how pilots cut over his property. He indicated that it was his understanding that 30 or 40 years ago when he moved out there the flight path was supposed to be 500 feet of elevation or over the north-south turn on Hays Road. He added that last year a plane almost hit his shop; his shop is 25 feet high and off to the side of the airport. The direction of the flight path has him concerned, and it seems to be getting worse with the gliders who for some reason come off of the ground and start turning within 300' of his house. Mr. Durr asked if there is some way we can regulate this behavior. He indicated that he was told that once they leave the airport that it's not the airports responsibility, so once they are up in the air what can you do to them. A lot of the planes have the number too obscured to read them because he tried to get the numbers off the plane and could not see them. He went to visit one of the pilots on Orchard Road and asked him very nicely if he would quit flying over his house, because it is supposed to be 500 feet before going in a north-south direction. Mr. Durr asked if there is any way the noise can be controlled and a set pattern of flight be adhered to so he can feel safe at home with his grandchildren playing outside. Mr. Durr emphasized that if this can be done the plan should work well.

Mike Doke stated that there is a set flight pattern and we can report them to the FFA. He indicated that if you cannot see the plane's pin number, you can note the time of day and a description of the plane, and then report it to the airport personnel. He noted that being in a tight knit community, we can typically find out who is not following the flight path even without the planes numbers. Mr. Doke stated that if they do not follow the rules, they will be turned into the FFA.

Chair Uhlman stated that perhaps the Port could address enforcement issues at the airport after public testimony was complete.

Dale Harris, 3925 Portland Drive, stated that he is on the Airport Advisory Committee and has been a pilot for 50 years without any accidents or violations from the FFA and has been an instructor for 45 years; he has trained 2 to 3 thousand colleagues with regards to safety. He indicated that he has flown everything Boeing has made, including a 747. He noted that he was a licensed examiner on a 747 to PC9, including light airplanes. He was an instrument ground instructor and a visual ground instructor. Mr. Harris stated that he was sharing his background because he felt it gave him some credibility regarding his safety concerns at the existing airport. He feels the airport is a very unsafe airport. Mr. Harris stated that in regards to the gentleman that just spoke (Mr. Durr), he flies out of the airport occasionally and rents an airplane when he does. He makes his turns over the river on 24, and normally goes at least to Markham Road before he makes a turnout. He stated that he sees a lot of unsafe things that go on at this airport, including illegal traffic problems, people flying way too low when doing their turnout at the airport, gliders making a 30 degree decent at high speeds into the airport, and the conflicting traffic on the ground. He thinks all these things are things that may not be able to be addressed by the Port, but require FAA notification to be resolved. He is particularly concerned with the runway as it is and its encroachment into the runway protection zone. He indicated that every time he drives down Tucker Road he looks to see if someone is taking off. If you keep the runway the way it is or you do not approve this plan update, he suggested that a sign be posted on Tucker and Orchard Roads stating "low flying aircraft." He feels this is a disaster waiting to happen, and FFA needs to get out here and follow through with some violations. He noted that a shift of the runway to the east will help with some of the dangers that exist, especially in regards to twin engine planes, which can cause a very

dangerous situation should it lose an engine at take-off. He indicated that the options are to move the runway east or limit the types of planes that use the runway.

Jonathan Graca, 1015 4th Street, stated that the Hood River Valley Residents Committee is interested in providing safe bicycle and pedestrian paths in Hood River and that eliminating Orchard Road would eliminate a safe bike route. He indicated that many bike riders use Orchard Road as an alternative to Tucker Road, which is more dangerous given the amount of traffic and its narrow shoulders.

Scott Gifford, President of Classic Wings Aero Services Inc., 3608 Airport Road, introduced himself as the contracted operator of the airport and provider of flight training, aircraft rental, pilot supplies, scenic flights, and fuel. He noted that he has been in the aviation industry for 30 years and is a flight instructor and former corporate pilot; he flew air charters, air taxis, and was a Forest Service pilot for a few years. He noted that he has over 5,000 flight time hours and is an airplane mechanic with FAA inspection authorization. Mr. Gifford stated that he supports the Airport Master Plan and the relocation of the runway. He addressed some misconceptions that had heard, including one that the airport is used by only the top 2 percent of the population. He emphasized that the airport is not only used by private airplane owners, but that businesses in the area also depend on the airport. He indicated that the largest users of the airport include Insitu and the agriculture community. He also explained that it was common for people to fly in for an hour or two because they come to Hood River for business meetings. He also talked about people flying in for the fruit loop and the WAAAM facility, and how the airport is often used by the Coast Guard, the Sheriff's Department, Forest Service, National Guard, and other agencies. He noted that the airport also provides flight instruction, and that schools from all over the Pacific Northwest use the airport during cross country flight training. He emphasized that the airport is an important economic engine for the community. He explained that most of the funding (95 percent) for the proposed airport improvements come from the FAA and is raised by aviation taxes on the fuel; so the users are the ones paying the majority of the funding for these kinds of projects. The other 5% comes from the Port. He expressed his opinion that the plan should be adopted for several reasons, the most important reason being safety. He described how a typical twin engine airplane that flies in the area carries 6 people, cruises about 200 miles per hour with a range of 800 to 1000 miles, and if this airplane, during takeoff, has a problem and has to abort the take off the plane is going to end up on one of the public roads as the runway is set up now. He emphasized that currently both roads are within the runway safety zones, which causes an unsafe situation. He also expressed his opinion that if we accept the plan updates, it will send a message to the FAA that the community supports the airport and that will help keep them funding these types of improvements in the future. Mr. Gifford offered to answer any questions the Commissioners might have.

Casper Pepitone, 1658 Orchard Road, stated that his home is the first house south and east of the airport runway and that he supports the shift of the runway to the east for safety reasons. He understands the closure of Orchard Road will mean about a 5 or 6 minute increase in travel time for him and he finds this a minor inconvenience given the added safety that will result. He indicated that it was his understanding that the fire department finds that the added time for first responders is within acceptable limits. He noted that closing a portion of Orchard Road will also help with the speed and increased traffic along this roadway. He strongly supports the plan. Mr. Pepitone indicated that he disagrees with the comments that bikes would be safer on Orchard Road because it has a ditch and no shoulders. He explained that as a driver he finds the safety of the bikes and vehicle traffic a real problem on Orchard Road.

Peter Cornelisen, President Hood River Valley Residents Committee, 1003 5th street, stated his concerns are regarding biking and pedestrian traffic on Orchard Road if the runway is approved and the road is

closed. He described that, as a bike rider in the Hood River Valley, one of the stretches he dislikes the most due to heavy traffic and a limited road shoulder is along Tucker Road. He feels it is very dangerous and poses a safety hazard to both motorists and bikes. He indicated that Orchard Road is a life saver for bikes and is a far better option than Tucker Road. Mr. Cornelisen asked that the Commission consider requiring the Port to retain a paved bike and pedestrian path around the airport expansion.

Jeremy Young, 1680 Orchard Road, introduced himself as Chairman of the Airport Advisory Committee, volunteer director for WAAAM, and resident along Orchard Road. Mr. Young stated that WAAAM is international known as the largest flying fleet of antique aircraft in the world. He stated that they have 92 aircraft registered at the Hood River Airport. He noted that WAAAM hosts a yearly fly-in event that brings in many pilots and others into the community. He noted that in 2008, WAAAM had 221 aircraft visit with the majority of these aircraft being antique or classic. Mr. Young stated that he looks forward to the Airport Master Plan being approved, not only for the safety of the airport, but also for the safety of the type of aircraft using the airport. He wants to make sure that the airport endures and stays for generations to come. Mr. Young indicated that the existing airport condition poses some risks. He explained that there have been two off-field landings east of Orchard Road in the last 3 years, with these landings occurring due to downdrafts and the pilots misjudging the runway. He expressed his fear that someone will get hit on Orchard Road during one of these off-field landings. He feels that the airport will be safer with the shift of the runway and the vacation of Orchard Road. He finally indicated that he thought Orchard Road was not a great place for bikes due to the speeding cars and tight corners.

Michael McElwee, Executive Director, Port of Hood River, 1000 Port Marina Way, urged the Commission to vote yes on the Master Plan. He added that he is not a pilot, but as the manager of the airport, he sees that it is an asset and an essential facility for the community. He explained that in the past the Port worked with the FAA to adopt the plan, but did not also forward to the County for adoption, which he felt was a mistake. He explained that safety was paramount to the Port and the main focus of the master plan. He emphasized that the Port had no plans to extend the length of the runway now or in the foreseeable future. He indicated that the issues involved in vacating Orchard Road were difficult and challenging, but that the trade off was safety. He noted that a bike path around the runway is a concept they might be willing to support, realizing, however, that there needs to be a better understanding of the variables involved, including such things as cost and FAA concurrence.

Chair Uhlman asked if anyone else waited to provide public testimony; none offered. Mr. Chair asked if there were any interested public agencies who wanted to testify.

Don Wiley, Hood River County Public Works, talked briefly about the process required to vacate Orchard Road. He indicated that there were many factors that needed to be considered in deciding whether or not to vacate Orchard Road. He emphasized the need for a balance between airport safety and the loss of connectivity and delays in emergency response times, but that safety related factors were most important. He indicated that based on the testimony provided he thought there may be a good case for supporting the vacation of Orchard Road. Mr. Wiley indicated that he was generally supportive of the idea of an alternative bike path around the shifted runway to address the loss of connectivity.

Chair Uhlman asked the Planning Commission if they had questions:

Commissioner Benson asked the Port if they had any plans to fence off the airport property. Mike Doke stated that fencing was included as part of the master plan. He indicated that a fence was important to keep wildlife, domestic animals, and the general public out of the airport; not to mention that it's also

required by FAA. Commissioner Benson asked if a bike trail was to be put in would the fence be placed to keep them out of the runway safety zone. Mike Doke replied, absolutely.

Commissioner Moore, asked about wildlife getting trapped within the boundary of the airport. He mentioned that a herd of elk ran across the runway a few years back. Mike Doke stated that the airports FBO would make sure they were cleared out if wildlife happened to get trapped in the fenced area. Commissioner Moore asked Dale Harris about the 3 options he raised during his testimony, including (1) do nothing and pray, (2) complete the projects as outlined in the proposed plan, or (3) shorten the runway. Based on these three options, Commissioners Moore asked, of the 90 aircraft based in Hood River Airport, how many would be able to use a shortened runway? Mr. Harris stated that he was not sure and Mike Doke would be better at answering his question. Mike Doke stated that the existing 3,040 foot long runway is already considered a short runway. He indicated that the existing runway length is able to accommodate 95% of the current air traffic, but that a shortened runway would not be able to meet even a B-I standard and, as such, would likely eliminate future FAA funding for the airport.

Scott Gifford stated that a shortened airport runway would stop many of the planes from being able to use it. He stated that even though he has only been the FBO operator for a short amount of time, the aircraft he has seen that periodically use the airport would not be able to use a shortened runway, including two from the museum and one base aircraft. He expressed his opinion that a shortened runway would do more harm to the airport than help.

Commissioner Perron stated that he had no questions.

Commissioner Alley, stated that she had no questions.

Commissioner Schuppe asked what criteria would be used to change the designation of the airport from B-I to a B-II. Mike Doke stated that the airport would be considered an official B-II airport when the taxiway is moved further north of the runway; however, that it is already considered a B-II airport and has been since the new master plan was approved by the FAA. He explained that all construction on the airport, as detailed in the approved master plan, would be funded to develop the airport at a B-II designation. Commissioner Schuppe asked if the western 550 feet of the existing runway was proposed to be vacated or if it would remain. Mr. Doke stated that the vacated runway is proposed to be left and painted with chevrons and used as an over-run for safety purposes. He noted, however, that the maintenance of this particular area would not be funded by FAA since it's not a required improvement.

Chair Uhlman stated that a citizen asked about enforcement and what can be done if they see something that should be enforced. Chair Uhlman also asked what happens once a citizen complaint comes to the airports. Mr. Doke stated that they talk with the pilot at the airport level. If complaints continue, they would contact the enforcement arm of the FAA, called Flight Standards. He explained that planes have a pin number on them and if there is a violation a citizen should look for that number and call the airport and they can identify the pilot and report the violation to Flight Standards. He indicated that if a citizen can't identify the plane's pin number, they can get a description of the plane, the time the incident occurred, and what happened and the Port will follow through. Chair Uhlman asked if they log those complaints so they can be tracked. Mr. Doke stated that they do.

Commissioner Schuppe asked who determines who is able to land at the airport. Mr. Harris stated that there is nothing the airport can do to prevent a pilot from landing at this airport. If the pilot makes a bad decision, the FAA can fine the pilot. He indicated that if there are flight violations or an accident, FAA

will get involved. Commissioner Schuppe asked if it was normal business for them to watch for people who violate the active runway rules. Mike Doke stated yes.

Chair Uhlman asked if there were any more questions; none stated. Chair Uhlman closed the hearing for deliberations.

H. Deliberations:

Commissioner Schuppe, stated that the updated Airport Master Plan was a great improvement over the original plan; it addressed obstacles within the runway protection zones, it improves spacing between the taxiway and runway, and it addresses the future aircraft and recreational needs at the airport. He indicated that the Orchard Road vacation could turn out to be a positive safety issue by decreasing the traffic dangers at Nobi's corner. Commissioner Schuppe felt that maintaining the existing runway when it shifts to the east gives an over-run capability that could be helpful to pilots. Commissioner Schuppe added that the real issue that must be considered is if the public is best served by vacating Orchard Road and increasing aircraft safety or by not vacating Orchard Road and maintaining connectivity and emergency response times. He noted that he was glad to hear of the concerns raised about planes crossing Orchard Road because he feels this is the big safety problem. He indicated that he bikes on Orchard Road a lot and does not find it a very safe route because it's narrow, the cars drive fast, there are three blind corners, and it is often full of gravel. Commissioner Schuppe recommended that when Tucker Road (Hwy 281) is repaved after the Windmaster sewer project is completed, the County and ODOT needs to work together to leave as much space as possible to make a safe bike lane there. He felt that, based on the testimony, emergency response times for first responders should not change much with Orchard Road being vacated.

Commissioner Alley agrees with Commissioner Shuppe's comments.

Commissioner Perron also agrees with Commissioner Schuppe's comments and stated that he was impressed with the Orchard Road residents being in support of this project, especially with the vacation of Orchard Road having such a direct affect on them. Commissioner Perron expressed general support for the concept of a bike path around the shifted runway as it would benefit the community and help with future connectivity plans.

Commissioner Moore stated that they have received good public input, and the plan is okay. However, he was concerned about recommending approval of the plan before knowing if the Board supports the vacation of Orchard Road or not, especially in this case when the plan is based so heavily on Orchard Road being vacated. He also expressed concerns about the loss of a public route that has provided connectivity to the area for more than 100 years. He emphasized that the Planning Commission has a charge to think about all public citizens who use Orchard Road and not just the people that live on it.

Commissioner Benson stated that Planning Commission was not responsible for approving or denying the request, but for simply making a recommendation to the Board of Commissioners for their decision, including the road vacation. He noted that there will be a trade-offs, including a small inconvenience for a great deal of safety. He agreed with Commissioner Schuppe about supporting a bike path along Tucker Road. He saw that option as a better solution. Commissioner Benson expressed his support for the plan.

Chair Uhlman stated that he appreciated Commissioner Schuppe's hard work and leadership. He indicated that he thought the plan was well balanced and a much better product due to Commissioner Schuppe's input. Chair Uhlman added that Mr. McElwee summed it up the best when he said the plan was about balancing different safety features against each one another and he felt that this plan was

generally well balanced. He agreed with Commissioner Benson that the Commission was simply making a recommendation to the Board of Commissioners, including the vacation of the Orchard Road, and that the Board would take that into consideration when making its decision. He then asked if there were any further deliberations or if someone wished to make a motion.

Commissioner Benson asked if it was appropriate to add a recommendation to the Board regarding the support of a bike path along Tucker Road.

Chair Uhlman stated that everything that was said about the bike path would go to the BOC for consideration; however, a bike path is not necessarily a part of the current proposal.

Commission Schuppe stated that we need to lobby the BOC to do something about the bike path along Tucker Road. He thought that the BOC could work with ODOT to try and make this happen. He indicated that ODOT was obtaining a lot of stimulus money right now and, with some lobbying, the BOC may be able convince ODOT to fix this long term safety problem. He expressed his concern that at this time there was no stimulus money dedicated for Hwy 35 or Hwy 281 projects, which he felt was inexcusable. He reiterated that asking the Port to put the bike path around the airport, just to end up at Nobi's corner would not fix the larger problem, as this corner is very unsafe.

Commissioner Benson moved to recommend to the BOC approval of the 2009 Airport Master Plan Update and adoption of the proposed Comprehensive Plan and Zoning Ordinance amendments as set forth in staff report dated April 22, 2009. The motion was amended to include the typo fixes identified by staff in their memorandum, also dated 4/22/09.

Motion was seconded by Commissioner Schuppe.

Chair Uhlman called for a vote:

Commissioner Benson	Yes
Commissioner Perron	Yes
Commissioner Alley	Yes
Commissioner Schuppe	Yes
Commissioner Moore	No
Chair Uhlman	Yes

I. **Meeting adjourned at 9:10 P.M.**